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# **The New Trade/ New Growth Nexus for Late Industrialisers**

**Exploring Learning-by-Doing Processes for Garment  
(Cambodia, Bangladesh) and Cut-Flower (Kenya,  
Ethiopia) Exporters: Integrating Global Value Chain  
and Firm-Level Analyses**

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Thesis submitted for the degree of PhD

2016

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## **Abstract**

This thesis explores the implications of the ascendency of Global Value Chains (GVCs) for contemporary processes of learning by doing. The conceptualisation of learning by doing developed by Nelson and Pack (1999), based on Arrow (1962) is used as the basis for this analysis. Within this model two types of learning by doing, the accumulation of capital and assimilation of new technologies, must work together. As a result, the learning by doing process ascribed proceeds in a vertical way: moving from lower to higher value activities. However, while challenging some of the assumptions underpinning neoclassical growth theory, the Nelson and Pack (1999) model assumes automatic and non-rivalrous knowledge spillovers. Hence, the process of learning by doing process is left ambiguous.

In comparison, the classification of governance developed by Gereffi et al. (2005) is based on the extent to which dimensions of technology can be codified as well as controlled by the lead firms which drive GVCs. Hence, implicit within the classification is the rivalrous nature of knowledge spillovers. This typology is used as an organising concept to explore contemporary learning by doing and subsequently upgrading processes. Because buyer-driven GVCs such as textiles and clothing and high value agriculture have recently been the entry point for low income countries into the modern export sector they are the research focus of this thesis. A mixed methodological approach is used to analyse the nature of integration and management of the textiles and clothing GVC in Cambodia, compared to Bangladesh. A similar approach is used towards analysis of the cut-flower GVC in Kenya, with Ethiopia used as a comparator case study.

Through positioning the role of the state as either directive or facilitative it is shown how the institutional context within which GVCs operate, referred to as external governance, exerts a direct influence on learning by doing and subsequently upgrading processes. As a result, different levels and types of learning by doing and upgrading processes are identified within the same GVCs as conventionally understood. These results suggest the new trade/new growth nexus for late industrialisers requires actively changing GVC governance structures to effectively stimulate types and levels of learning by doing and subsequently upgrading processes.

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## Table of Abbreviations

ACP	African Caribbean and Pacific
AGOA	African Growth and Opportunity Act
ANSA	Affiliated Network for Social Accountability
ASEAN	Association of Southeast Asian Nations
ATC	Agreement on Textiles and Clothing
BEPZA	Bangladesh Export Processing Zones Authority
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BKMEA	Bangladesh Knitwear Manufacturers and Exporters Association
BBS	Bangladesh Bureau of Statistics
CABE	Centre for African Bio-Entrepreneurship
CDC	Council for the Development of Cambodia
CIF	Cost Insurance and Freight
CMT	Cut-Make-Trim
CNRP	Cambodia National Rescue Party
COTU	Central Organisation of Trade Unions
CPA	Cotonou Partnership Agreement
DFQF	Duty Free Quota Free
EBA	Everything But Arms
EHPEA	Ethiopian Horticultural Producers and Exporters Association
EIA	Ethiopia Investment Agency
EIC	Economic Institute Cambodia
EPA	Economic Partnership Agreement
EPRDF	Ethiopian People's Revolutionary Democratic Front
EPZ	Export Processing Zone
ERS	Economic Recovery Strategy
ETB	Ethiopian Birr
EU	European Union
FDI	Foreign Direct Investment
FAO	United Nations Food and Agriculture Organisation
FOB	Freight on Board
FPEAK	Fresh Produce and Exporters Association of Kenya
GAP	Good Agricultural Practice
GATT	General Agreement on Trade and Tariffs
GCC	Global Commodity Chain
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GMAC	Garment Manufacturers Association Cambodia
GNI	Gross National Income
GSP	Generalised System of Preferences
GTP	Growth and Transformation Plan
GVC	Global Value Chain
HCDA	Horticultural Crops Development Authority
HS	Harmonised System
IDE	Institute of Developing Economies
ILFS	Integrated Labour Force Survey
ILO	International Labour Organisation
IMF	International Monetary Fund
JETRO	Japanese External Trade Organisation
KES	Kenyan Shilling
Ksh	Choose
KFC	Kenya Flower Council
KIHBS	Kenya Integrated Household Budget Survey
FPEAK	Fresh Produce and Exporters Association of Kenya
LBD	Learning by Doing

LDC	Least Developed Country
LIC	Low Income Country
LSE	London School of Economics
MFA	Multi Fibre Agreement
MFN	Most Favoured Nation
MIC	Middle Income Country
MNE	Multi-National Enterprise
MOC	Ministry of Commerce
MOU	Memorandum of Understanding
NBE	National Bank of Ethiopia
NIC	Newly Industrialised Countries
OBM	Original Brand Manufacture
ODA	Overseas Development Assistance
ODM	Original Design Manufacture
OEM	Original Equipment Manufacture
ODI	Overseas Development Institute
OLS	Ordinary Least Squares
PRSP	Poverty Reduction Strategy Paper
RGC	Royal Government of Cambodia
ROO	Rules of Origin
SSA	Sub-Saharan Africa
SAP	Structural Adjustment Programme
SEZ	Special Economic Zone
SOE	State Owned Enterprise
SSA	Sub-Saharan Africa
SNEC	Supreme National Economic Council
STATA	Data Analysis and Statistical Software
TFP	Total Factor Productivity
Tk	Bangladeshi Taka
TNC	Trans National Corporation
US	United States of America
VCA	Value Chain Analysis
VERs	Voluntary Export Restrictions
UNCOMTRADE	United Nations Commodity Trade Statistics
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UN-OHRLLS	United Nations Office for the Least Developed Countries and Small Island Developing States
UNTAC	United Nations Transitional Authority in Cambodia
WTO	World Trade Organisation

# **1. Motivation, Objectives, Structure**

## **1.1 Introduction and Motivation**

The latest phase of globalization which began in the 1980s has not only been characterized by shifts in patterns of global trade quantitatively (in terms of composition) and qualitatively (in terms of how), but also by a silent revolution in economics which has developed in tandem. New trade theory is a branch of theoretical developments in economics which also began to unfold during the 1980s. Contrary to traditional theories of the past which assumed away the significance of variables, such as geographical location, or simply took others as given, such as the free flow of technology and knowledge, factors previously excluded from analysis are now included as explanatory reasons for growth differentials across countries and regions.

This revolution has been informed by the experience of the East Asian Newly Industrialised Countries (NICs): their process of ‘catch up’ through trade-induced growth and the pursuit of an export-orientated, as opposed to import-substitution strategy, both supported and undermined traditional theories of trade-induced growth and associated policy prescriptions. However, as pointed out by Young (1991), blanket references to the modern export-led growth successes of the East Asian NICs masks remarkable differences in policy amongst them. Although there are some commonalities between first-tier East Asian NICs (Hong Kong, South Korea, Singapore, Taiwan), there also exists a significant degree of heterogeneity in terms of trade and investment policy.

Despite this, there is broad agreement in relation to the speed at which the transition from agrarian societies into industrialized nations took place. As a result, there has been some convergence around the role of fundamentals in both determining and sustaining growth. This includes the important role of human capital formation, in addition to economic geography considerations.

Arguments made in support of protection for infant industries are no longer based solely on terms of trade as indicated by relative prices, which was characteristic of the structuralist debate of the past. Instead because of the high sunk costs associated with accessing particular markets, individual firms and entrepreneurs may need government assistance in order to acquire and learn new methods and techniques of production and break into new export markets. New trade theory therefore supports the case for a more active government intervention to assist infant industries and move an economy towards a more dynamic trajectory. However, dividing lines remain in terms of just how facilitative or directive governments should be.

This debate has been accentuated in recent years, particularly in view of the recent ascendency of Global Value Chains (GVCs). The current interpretation by mainstream economists refers mainly to the degree of vertically fragmented production and trade. This discourse posits that within the context of GVCs the costs of infant industry protection are even higher than in the past. This is precisely because of the degree of fragmentation of global production which means that countries now specialise in tasks within a value chain, rather than final products.

Alternatively, in view of the depth and breadth of GVCs others argue that the need for industrial policy is actually heightened within the current context. This is because new estimates on the degree of intra-firm trade and shares of global trade coordinated by Trans-National Corporations (TNCs) translate into more hierarchical and quasi-hierarchical governance structures driven by Foreign Direct Investment (FDI) and other non-equity modes according to the GVC governance typology (Gereffi et al., 2005; UNCTAD, 2013a). Changes in the nature of inter- and intra-firm relations across borders have implications for conventional upgrading processes, not all of which have been fully grasped.

In light of these trends, this thesis explores what the ascendency of GVCs implies for new trade/new growth theory and contemporary understandings of learning by doing processes. The conceptualisation of learning by doing developed by Nelson and Pack (1999), based on Arrow (1962) is used as the basis for this analysis. Within this model two types of learning by doing, comprising both tacit and explicit forms of knowledge, coupled with the accumulation of capital and assimilation of new

technologies, must work together. As a result, the learning by doing process ascribed in this model proceeds in a vertical way: moving from lower to higher value activities. However, while challenging some of the assumptions underpinning neoclassical growth theory, the Nelson and Pack (1999) model assumes automatic and non-rivalrous knowledge spillovers. Hence, the process of learning by doing is left ambiguous.

In comparison, the classification of GVC governance developed by Gereffi et al. (2005) is based on the extent to which dimensions of technology can be codified as well as controlled by the lead firms which drive GVCs. The GVC governance structures developed by Gereffi et al. (2005) are therefore used as organising concepts in order to explore the implications of the ascendency of GVCs for contemporary learning by doing, and subsequently upgrading processes, using Nelson and Pack (1999) as our point of reference.

This exploratory analysis begins with selected country case-studies in Asia and the archetypal entry stage into GVCs – the textile and clothing sector. Cambodia is developed as a major case-study and Bangladesh is referred to as a comparator country case-study. We then proceed to explore case-studies in Africa and archetypal GVCs in the modern agricultural export sector. Kenya is developed as a major case-study, with Ethiopia referred to as a comparator case-study.

These case-studies were selected based on how exporting takes place and where countries are located within the respective GVCs. Although operating in different sectors – high value agriculture and light manufacturing – the respective GVCs exhibit similar characteristics and tendencies in terms of value chain governance and the nature of inter and intra-firm relations. Because the functional upgrading trajectory described in the GVC literature is considered challenging within some types of value chain governance, we explore the extent to which learning by doing and types of upgrading, including functional, are influenced by the nature of value chain governance.

## **1.2 Thesis Objectives**

The research motivation of this thesis relates to the challenge of export diversification and the ability of late industrialisers to tap into the modern export sector. The changed nature of global trade as reflected by the ascendency of GVCs has implications for late industrialisers, including in sub-Saharan Africa (SSA) where most Least Developed Countries (LDCs) are located, in terms of their export-orientated growth strategies. This is because contributions to the case-study GVC literature which have assessed how patterns of global trade have changed have subsequently linked these shifts to qualitative changes in value chain governance, and by consequence, firm (and country) upgrading trajectories.

For example, with particular reference to SSA, Gibbon and Ponte (2005) describe increasing producer specialisation within the lower value added nodes as opposed to progressive movement towards higher value added nodes such as processing, retailing and marketing. This reflects interrelated processes: the fragmentation of global production distributed across countries and the consolidation of activities amongst lead TNC firms. Manifested at the global level, this has resulted in the marginalization of SSA in global trade through locking producers into buyer-driven GVCs and inhibiting movement into higher value nodes of production, such as processing and marketing.<sup>1</sup>

Despite this less sanguine view regarding upgrading processes over time, as a point in time there are new trade opportunities for SSA with the potential to rapidly and dramatically expand formal employment opportunities. Contract farming is a form of vertical integration between producers and buyers and represents how global agribusiness is making renewed inroads into African agriculture (Oya, 2012). The major difference between this sector and the textiles and clothing, or ready-made garment (RMG) sub-sector is that investment is resource seeking rather than efficiency seeking (UNCTAD, 2011).

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<sup>1</sup> Keane (2014a).

The proposed research seeks to explore how new trade/ new growth theory applies to late industrialisers, without being limited by the assumptions of neoclassical trade theory. If the production and export of ‘modern’ goods such as horticulture may be considered more sophisticated than other types of traditional agricultural goods, then the comparison between the textiles and clothing sector and cut-flower GVC is a valid one. Both products are traded in similar types of GVCs, as conventionally understood. There are also similarities in terms of how the initial ‘seeding’ process of the modern sector takes place: an aspect referred to in Nelson and Pack (1999) but otherwise left unexplained.

In order to explore the applicability of new trade/new growth models, such as Nelson and Pack (1999) to the selected country and industry case-studies, additional indicators related to external and internal value chain governance are necessary in order to expand the analytical framework. The end result is a distinction between different types of external value chain governance - those that correspond to the post-Washington consensus and the role of state as facilitator, compared to more directive and developmental approaches – and resultant learning by doing and subsequently, upgrading processes within GVCs.

Differences in integration and management processes, the interface between external and internal GVC governance, are expected to result in divergent learning by doing processes. We refer to the governance structures that surround trade: externally, as facilitated and orchestrated by governments for private sector actors; and, internally within the value chain given the nature of intra and inter-firm relations.

It is demonstrated how aspects of external governance operate less as a framework condition, but rather as a function of either a more directive or facilitative approach adopted towards GVC integration and the management of foreign capital and know-how. In turn, external value chain governance exerts a major influence on the type of learning by doing achieved and subsequently upgrading processes within GVCs.

### **1.3 Research Questions, Hypotheses and Methodology**

The overarching research hypothesis is that new trade/ new growth models such as Nelson and Pack (1999) are contingent on the governance structures which surround trade. From this hypothesis we derive the following overarching research question:

- What are the identifiable learning by doing processes apparent within the textiles and clothing and cut-flower sectors?

In turn, the following hypothesis may be identified:

- Null: There are no differences between the sectors in terms of related processes of learning by doing.
- Alternative: There are, related to global value chain governance and the interface and interaction between external and internal structures.

A number of sub-research questions are subsequently generated, as follows:

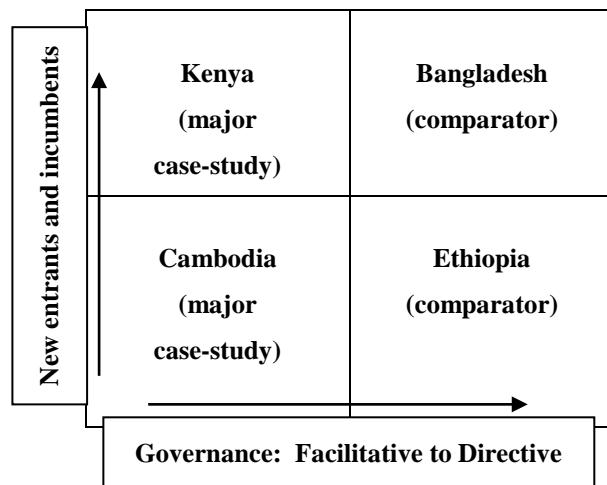
- How do learning by doing processes differ between sectors/countries?
- How are these differences related to the internal governance between firms and nature of contractual relations?
- How are these differences related to external governance structures?

The associated governance structures of the major and comparator case-studies are expected to lie at two different ends of an external governance spectrum which ranges from positive functional (facilitative) to positive selective (directive) as shown by Figure 1.<sup>2</sup> Positive functional policies correspond to the post-Washington consensus and its perceived role of the state as facilitator. In comparison, selective positive policies include those which are more strategic, directive and developmental. These differences in external governance are expected to influence internal GVC governance structures and therefore learning by doing and subsequently, upgrading processes.

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<sup>2</sup> See Lall (1997).

**Figure 1: Relative Position of Country Case Studies**



A mixed-methodology is adopted because the aim is not to infer findings from a sample to a population, but to “engender pattern and linkages of theoretical importance” (Bryman, 1989: 173). Induction is used to reveal patterns between the country case-studies and deduction in order to the hypotheses, derived from theory as well as case-study and data analysis. In order to reach the thesis conclusions, abduction is used to identify the best available explanation for results. Finally, the approach has been reductionist given the need to define a number of ambiguous concepts.

Since the starting premise is that knowledge spillovers are not automatic and rivalrous, the governance typology developed by Gereffi et al. (2005) is referred to, so as to classify internal governance structures. Some of the rivalrous elements of knowledge are implicitly incorporated within the GVC governance framework developed by Gereffi et al. (2005). These aspects are made more explicit in view of the interaction between external and internal value chain governance structures.

The logic of our case-study selection, as well as the research methods deployed - qualitative and quantitative - was guided by the need to elaborate upon causal theories through comparative analysis. Although the participation of the selected country case-studies with their respective GVCs is relatively well known, outcomes in terms of learning by doing and upgrading processes have not been explored in a systematic

way. Moreover, the influence of external governance structures on internal GVC structures and relationships between firms operating across borders is found to be wanting within the GVC literature.

The value chain analysis is couched within a new/trade growth framework in order to explore contemporary learning by doing processes in view of the ascendency of GVCs. For example, within the Gereffi et al. (2005) governance framework it is posited that lead firms exert control including through direct ownership either as a result of low producer capabilities and/or because of complex transactions. As producers' capabilities increase - an obvious outcome of learning by doing - governance structures are posited to change.

Subsequently, lead firms take a more hands off role as the capabilities of their suppliers increases, which changes internal value chain governance into a more relational type. This causal chain of relations within the Gereffi et al. (2005) governance framework is interrogated. It is shown how effectively stimulating types of learning by doing which comprises both tacit and explicit forms, may require actively changing GVC governance structures so as to enable both processes. Inducing these changes, as demonstrated through the use of comparative case-study analyses requires more directive as opposed to facilitative approaches.

#### **1.4 Thesis Structure**

In Chapter Two we chart the development of New Trade and New Growth Theory and introduce more recent theoretical developments related to the organisation of firms in the global economy. Although coming from different perspectives, we describe some of the similarities between this emerging literature and the more qualitative and quantitative GVC literature.

Attention is drawn to the continued limitations in empirically testing for learning by doing and some of the tensions that exist within the literature. We briefly introduce recent contributions to the New Trade/New Growth literature which adopt more of a sectoral approach to measurement, such as Hausmann et al. (2006) and Hausmann and

Klinger (2006). In a similar vein to Young (1991) and Grossman and Helpman (1989), these new measures explore the Southern imitation of Northern goods, but selectively incorporate aspects of New Trade/New Growth theory.

Both models fail to incorporate aspects related to the external and internal governance of trade and assume knowledge spillovers to be automatic. This is illustrative of the tensions that exist within New Trade/New Growth theory. Because of these tensions, we briefly review the application of these new measures to our selected country case-studies. We argue their application and associated policy prescriptions retards rather than advances the theories relevance for late industrialisers; this in turn provides the research justification for the research carried out in this thesis.

In Chapter Three, we introduce the GVC literature. We begin with an overview of the 1990s wave of the more qualitative case-study literature which explored how firms, and labourers, in developing countries were both affected by and adapted to changes in developed country markets. These included the quest for economies of scope over marketing and retailing nodes by lead firms, within a wave of mergers and acquisitions as the process of financial globalisations took off. Finally, we refer to the more recent additions to the qualitative GVC literature which now draws attention to the motivations of investors, their social embeddedness and subsequent upgrading processes.

The mainstream incorporation of the GVC literature and new quantitative approaches which seek to measure trade in value added are introduced next. We discuss some of the conceptual as well as methodological challenges related to measuring trade in value added at the country level, within the current context of global production networks which span multiple countries. Finally, we conclude with a summary of research gaps, including the influence of external governance structures and public policy considerations, on internal value chain governance and firm-level organisation.

Chapter Four describes our research methodology, which is mixed and draws on both qualitative and quantitative research methods. We describe how our approach to case-study analysis is structured, and why different methods were deployed to answer the overall research question and sub-research questions. Because of the need to define

concepts and assign indicators to these, including learning by doing processes operating at different levels, we present in detail the analytical framework applied to the GVC sector and country case-studies.

Chapter Five introduces the textiles and clothing GVC, a highly regulated sector which has experienced waves of fragmentation and consolidation. We identify the respective position of our major country-case study Cambodia and its comparator of Bangladesh within the current GVC structure. We briefly outline the comparative elements to be explored in the textiles and clothing case-studies.

Chapter Six introduces the first case-study of Cambodia and explores its engagement with the textiles and clothing GVC. We position the role of the state in Cambodia as facilitative. In Chapter Seven we present our comparator case-study of Bangladesh. We position the role of the state in this case as more directive. These country case-studies present both theoretical as well as methodological insights which are subsequently taken forward in the next set of case-studies undertaken in the cut-flower sector. These findings are summarised in Chapter Eight.

Chapter Nine presents an overview of the cut flower GVC, as a sub-sector of the horticulture GVC. We introduce the respective country case-studies and how they are positioned within the GVC. In Chapter Ten, the major case-study of Kenya and its integration process with the cut-flower GVC and subsequent outcomes in terms of learning by doing and upgrading processes are analysed. We position the role of the state in Kenya as facilitative. In Chapter Eleven, Ethiopia is introduced as the comparator case-study to Kenya. In this case, we position the role of the state as more directive, although we describe some facilitative elements. Chapter Twelve summarises the main findings from this comparative analysis.

The results of the country case-study analysis in both sectors are drawn together in Chapter Thirteen and the results summarised in terms of identifiable learning by doing and upgrading processes. We conclude this thesis by stating the main conclusions derived through the comparative analysis. We relate these conclusions back to the original research questions posed. Finally, we describe avenues for further research.

## **2. Theory and Empirical Review**

New trade theory developed and modelled in the 1980s, has many guises. The term forms ‘an umbrella’ for the incorporation and modelling of factors that may result in increasing returns to scale in production. It is part of a branch of other ‘new’ theoretical developments including relating to new economic geography, new growth theory and new institutionalism. What distinguishes the ‘new’ revolution from neoclassical theories of the past is that instead of assuming aspects of market failures away, such as information asymmetries, they are incorporated as additional explanatory variables for differential growth performances across countries (Fine 2002).<sup>3</sup>

Despite these developments, there remain some major tensions within the theory. This section first reviews how new trade/new growth theory initially developed and how it continues to do so. Tensions within the theory, related to the assumption of automatic knowledge spillovers, are outlined. In view of these, the incorporation of value chain governance within our analytical framework is justified.

### **2.1 Developments and Tensions within New Trade/New Growth Theory**

The historical antecedent of new trade theory was standard neoclassical trade theory (and growth theory); structuralism was the contending theory to that propagated by the neoclassicists. The post-war period of the 1950-80s saw countries divided in terms of trade policy between those that had espoused export orientation (the East Asian NICs) and those that had pursued import substitution (ISI), such as sub-Saharan Africa. The economic crises of the early 1980s changed all that: fuelled by oil price rises and the recycling of petrol dollars in the newly created Eurodollar market, it led to sharp increases in interest rates in the US and UK and a subsequent sovereign debt crisis in much of sub-Saharan Africa, and witnessed the rise of neo-liberalism in Anglo-Saxon economies.

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<sup>3</sup> For example, New Trade Theory incorporates and models increasing returns and external economies, made possible in part by improvements in modelling techniques.

As a result of the increased leverage of multilateral institutions because of the debt crisis of the 1980s, susceptible countries were advised to undertake economic structural adjustment. This meant a radical overhaul of government policies in relation to trade and investment, including market control measures such as marketing boards in the agricultural sector. Aspects of new trade theory were reconciled and considered, in order to reinforce aspects of standard trade theory, such as the Ricardian ‘vent for surplus’. By pursuing a more open trade and investment policies, embodied within the ‘Washington Consensus’ and getting their ‘prices right’ developing countries could benefit from external economies of scale through trade.<sup>4</sup> The justification for such policies was based on the historical experience of the East Asian NICs - as publicized in the trailblazing *East Asian Miracle* report (World Bank, 1993) - which had managed to converge in their incomes with the West over the post-war period.

Hence, new trade/new growth theory developed on the historical growth experience of the East Asian NICs which supported neoclassical theories of convergence, but confounded the assumption of diminishing returns to capital. Capital accumulation and transfers of technology both played pivotal roles in the post-war period as drivers of growth in the East Asian NICs; these transfers occurred within a conducive international environment. This included the ‘flying geese’ model of recycling comparative advantage through trade and investment links, and movement up the value-added ladder, on the initial basis of an abundance of low-skilled labour and links with, and access to the market of, the initial ‘lead goose’ - the US (Ozawa, 2006).<sup>5</sup>

However, contrary to neoclassical growth models which treat technological progress as totally exogenous, New Growth theories endogenise the process of technological development, which occurs as a result of knowledge spillovers from the productive

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4 Krugman and Helpman (1989) make reference to the Kemp-Negishi (1970) requirement that sufficient conditions for gains from trade arise from economies of scale; those that are achieved from foreign sources via international trade are more conducive to gains from trade than national economies of scale; a country gains from trade if it brings about an expansion of its increasing returns industries and a contraction of decreasing returns industries.

5 The ‘flying geese’ model developed by Akamatsu (1962) provides a stylised description of economic development in the East Asian region, based on a stylised ‘catch-up’ process of technological and industrial upgrading: a new product and imported technology is adopted, adapted and subsequently exported as domestic production grows in scale; production subsequently relocates to countries within the region and thus, the process begins again. Japan’s textile industry was used as the ‘flying geese’ models initial basis by Akamatsu (1962). There are also clear parallels between this model and Vernon’s product cycle theory (1966).

actualisation of given goods; within country interactions between human capital and capital formulation generates increasing returns.<sup>6</sup>

Despite this advancement, there is ambiguity in differentiating between the extent of endogeneity compared to exogeneity of technological change, as exemplified by the debate between the accumulationists and assimilationists in the early 1990s. The accumulationists argued that the East Asian miracle was more ‘perspiration than inspiration’ (Krugman, 1994). The assimilationists argued that the sustenance of high growth rates could only be explained by introducing productive factors that increased returns to scale, as opposed to static optimisation by itself (Nelson and Pack, 1999). Both used standard neoclassical growth theory and growth accounting as the methodology on which to base their arguments; the following section presents a summary of this debate and highlights the continued areas of contention.

### 2.1.2 The Assimilationists

The assimilationists argued that the learning process which underpinned the assimilation of new technologies was instrumental in preventing a decline in the marginal product of capital, despite the rapid growth in capital-labour ratios generated by very high investment ratios in the East Asian NICs during their catch-up process. Nelson and Pack (1999) made this case through the use of a simple two sector model: a craft sector and a ‘modern’ sector (see Box 1).

Technology was being progressively adopted and absorbed and human capital was increasing in response to demand. Although the Nelson and Pack (1999) model describes how the modern sector ‘seeds’ the development process, the initial starting point which gives rise to this fertilisation procedure is not described. However, it is generally acknowledged by the assimilationists - as described in Kim and Nelson (2000) - that a process of imitation, reverse engineering and learning from existing technologies began after the post-war period.

Existing technologies were acquired based on the potential needs in the market, and the knowledge or products that would meet these needs. Effective interactions with marketing and production teams that supplied/required these were fostered. Although

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<sup>6</sup> Testing for endogenous growth within a neoclassical framework, Romer (1986) and Lucas (1988) stress the interrelationships between the rate of technical advance and the rate of growth of physical and human capital; increasing returns and the generation of positive externalities in the growth process, such as knowledge and human capital formulation, lead to permanent changes in growth rates.

highly stylised, this represents a general understanding of the experience of first-tier NICs compared to, say, second-tier NICs, where reliance on FDI was greater.

### **Box 1: Accounting for Growth: The Assimilationists Approach**

If factor prices in the two sectors were the same, unit costs using modern techniques would be lower than costs using craft technology. However, the modern sector requires 'educated' labour while education is not necessary or productive in craft technology. At the start of accelerated development almost all of capital and labour is in the craft sector. It is assumed however, that there is a tiny amount in the modern sector that serves, in effect, to 'seed' the development process. At any time, output per unit of labour input in the economy or industry as a whole will be the weighted average of labour productivity in the two technologies, the weights being the proportion of labour employed by each of the technologies. Let  $a_c$  be output per unit of labour in craft technology and  $a_m$ , be output per unit of labour in modern technology, with  $a_c < a_m$ . Then:

$$\begin{aligned} Q/L &= a_m L_m / L + a_c L_c / L \quad (1) \\ Q/L &= a_c + (a_m - a_c) L_m / L \quad (2) \end{aligned}$$

As  $L_m / L$  grows over the development process, so does  $Q/L$ . Since capital per unit of output is the same in the two sectors, an increase in  $L_m / L$  is accompanied by a rise in  $K/L$ . Indeed, within this model  $Q/L$  and  $K/L$  grow at the same rate. The model assumes the price of the product is the same if produced by the modern or craft sector, similarly the cost of capital for both sectors; differences in labour costs are the only factor that affects the relative profitability of the two technologies.

Let  $w$  be the price of labour in the craft sector, and  $g w$  its price in the modern sector, with  $g > 1$ . Thus  $g$  (for graduation) reflects an education premium. It is assumed that  $g$  never is so large so as to completely offset the productivity advantages of modern technology. If one uses a prime over a symbol to denote an inverse, then the difference between the two sectors in cost, and profit, per unit of output, and capital, can be written:

$$\Delta C = W (a'_c - g a'_m) \quad (3)$$

The higher profitability of modern technology than craft provides an incentive to shift resources from the latter to the former. Within this model the strength of the response is determined by the effectiveness of entrepreneurship, denoted by  $e$ :

$$\begin{aligned} d/dt(\log K_m / K_c) &= ew (a'_c - g a'_m) \quad (4); \\ d/dt (\log K_m / K) &= ew (a'_c - g a'_m) (1 - K_m / K) \quad (5). \end{aligned}$$

If  $w$  and  $g$  are constants, the time path of  $K_m / K$  (and  $Q_m / Q$ ) will trace out a logistic function.  $L_m / L$  will be increasing as these variables grow, but lagging behind them. Of course in the limit they all approach one. If  $w$  increases as development proceeds but not  $g$ , the rate of expansion of the modern sector relative to the craft will be accelerated - since modern technology saves on labour, an increased  $w$  increases its cost advantage. An increase in the education premium,  $g$ , over the development trajectory will diminish the cost advantage of modern technology. On the other hand a decline in  $g$ , say as educated labour becomes more plentiful, will enhance it.

As capital and labour shift to the modern sector,  $K/L$  and  $Q/L$  will increase. If the amount of educated labour is responsive to demand, human capital also will be increasing. Economic analysts studying the aggregate data generated by this process might conclude that growth of  $Q/L$  was caused by the growth of physical and human capital per worker (and indeed such growth of capital was required for growth) and infer that growth was due to 'movements along the (economy-wide) production function. However, this explanation would repress two things. First, the force driving growth was the progressive adoption and absorption of modern technology - the  $m$  technology became more widely used and was effectively utilised so that  $a_m > a_c$  (in contrast to the experience of many LDCs that purchase large amounts of equipment but utilise them very inefficiently so that  $a_m$  barely exceeds  $a_c$ ). Second, while the profitability of employing modern technology was motivating the shift, the rate at which the modern sector replaces the craft was being determined by the strength of entrepreneurship.

Source: Adapted from Nelson and Pack (1999).

Nelson and Pack (1999) rely on the strength of ‘entrepreneurship’ to determine the responsiveness of resource transfer from the ‘craft’ to ‘modern’ sector, though the role of the state is generally acknowledged as being a critical ingredient of the ‘seeding’ process. This role includes governing the market, so as to reward and foster entrepreneurship, and to promote the assimilation and absorption of modern technologies by lead firms within country. A strong policy emphasis shaped the export-orientated growth model in order to avoid diminishing returns and being limited by the extent of the domestic market.

They acknowledge the proactive management of the real exchange rate so as to maintain competitiveness in export markets. Hence, certain aspects such as the need to govern the market come into play. The process of engaging with the modern export sector was supported by the state, but led by domestic entrepreneurs.

### **2.1.3 The Accumulationists**

In contrast to the assimilationists, the accumulationists argued that during the catch-up process of the East Asian NICs, which began in the post-war period, the share of capital - the most rapidly growing factor of production - was quite high and remained so; thus capital growth accounted for a large part of their successful growth experience, under the logic being employed. The weighting of the proportion growth of inputs calculates how much output growth was accountable to factor accumulation - movement across a given single, economy wide, production function - in the absence of an outward shift.<sup>7</sup> Technological change is considered exogenous and assumed to fall on all firms equally like a ‘manna from heaven’ which subsequently results in an outward shift in the production function.

Box 2 highlights how changes at the firm level, influenced by the external environment, are central to understanding processes of technological change. Precise assumptions about the nature of technical change are critical: fitting a production function to the data assumes technology is Hicks-neutral. That is, a change in technology does not change the ratio of capital’s marginal product to labour’s for a

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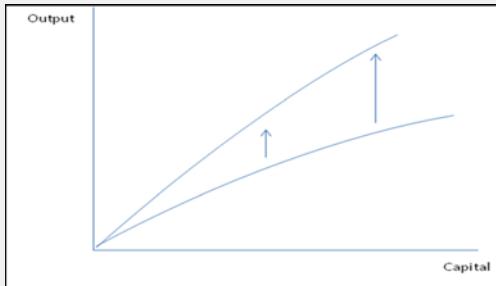
<sup>7</sup> Caused by an exogenous shock or population growth in the Solow-Swan (1956) growth model.

given capital-labour ratio (derived from a standard neoclassical production function which assumes perfect competition). Moreover, the methodology suppresses the major structural changes that occurred such as the progressive replacement of smaller by larger, more efficient firms.<sup>8</sup>

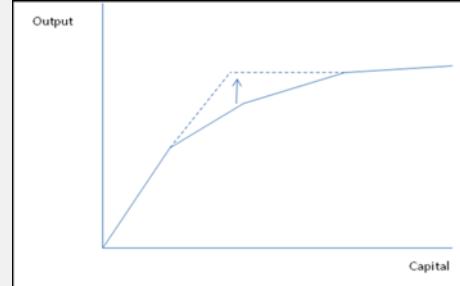
### Box 2: A New View of Technological Change

Atkinson and Stiglitz (1969) argue that if the effect of technological advance is to improve one technique of production but not other techniques, then the resulting change in the production function is represented by an outward movement at one point in time (Figure 2) and not a general shift (Figure 1). What Figure 2 essentially shows is how technical progress may be localized to one technique and may not necessarily result in spillovers, i.e. learning by doing is highly specific to individual firms. Figure 1 would only be reached if there were spillovers to all techniques across all firms.

**Figure 1: General Shift**



**Figure 2: Shift at a Point in Time**



Nelson and Winter (1974) highlight how and why the understandings of the market environment are critical to understanding processes of technological change: there are significant rewards for solving problems early and penalties for being wrong, or late; these rewards and penalties are not mere conjectural possibilities, they actually occur, and their occurrence helps to shape the future course of events. Not all firms are alike, they are instead heterogeneous. The extent of rewards, penalties and the rates of introduction and diffusion of new techniques, depends on a complex of environmental and institutional considerations that differ sharply from sector to sector and period to period. They argue that such a view thus leads one to focus on a set of questions which concerns competition, profit and investment within a dynamic context: Is the investment of a particular firm strictly bounded by its own current profits? Can firms borrow for expansion? Are there limits on firm size, or costs associated with the speed of expansion? Can new firms enter? How responsive are ‘consumers’ to a better or cheaper product? How long can a firm preserve a technically based monopoly? What kind of institutional barriers or encouragements are there to imitation?

Despite the limitations with growth accounting, which includes its inability to explain why factor accumulation may be persistent while growth is not (Easterly and Levine, 2001) and the inability in most developing countries to account for capital,<sup>9</sup> growth decompositions continue to be included in most country growth assessments.<sup>10</sup> There

<sup>8</sup> See Nelson and Winter (1974) and Nelson and Winter (1982).

<sup>9</sup> King and Levine (1994) use a standard perpetual inventory method with an estimate of initial capital. They assume a depreciation rate of 7% per annum and an initial capital stock of 1.3 times the GDP in 1993 (based on cross country estimates of capital output ratio for developing economies).

<sup>10</sup> They say nothing about causality Rodrik (2008a); moreover, are subject to the Cambridge critique of the aggregation of capital.

are serious limitations in reconciling growth accounting at the macro level with measures of total factor productivity, which has micro foundations; the literature continues to be highly divided on this issue.

#### 2.1.4 Role of Human Capital

Where both the assimilationists and accumulationists converge is in relation to the rate of human capital growth as being a significant factor in the sustenance of economic growth, even if they diverge as to how it is significant. Additional human capital indicators have been incorporated into neoclassical production functions (Lucas, 1988; Mankiw et al., 1992).<sup>11</sup> Positive spillover effects and knowledge externalities are now included within endogenous growth models (Aghion and Howitt, 1992; Grossman and Helpman 1991; Romer, 1990; Young, 1991).

Jones (1995) classifies the latter literature as R&D based models, since they attempt to address some of the limitations with original endogenous growth models, which are unable to explain long-run growth because of the assumption of exogenous technological change. The AK model was the first extension to the Solow-Swan growth model. In this model, the growth of the economy is endogenised by the linear production function for capital; any policy that raises the savings rate accelerates economic growth permanently; this is in contrast to the Solow-Swan model which emphasized diminishing returns to capital. In Arrow (1962) the accumulation of capital generates new knowledge about production in the economy in a whole, which is a by-product of capital accumulation. Within AK models, the role of savings in terms of driving growth posits a clear role for government policy in terms of taxation policy. However, there are challenges in terms of differentiating between private and public welfare gains, including with regards to externalities and human capital investments.

In comparison, in R&D models, long-run growth is driven by technological progress, which results from the actions of profit-maximising individuals searching for innovations; the discovery of an innovation raises productivity and is ultimately the source of long-term growth. However, even in R&D models, assumptions about the

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<sup>11</sup> Known as an augmented Solow model, which assumes physical and human capital earn the same interest rate.

nature of technological development, and more specifically knowledge spillovers, are not uniform.

In Romer (1990) knowledge is assumed to be non-rival; increasing returns to scale in the production function reflect the non-rivalrous nature of knowledge, e.g. doubling the stock of knowledge would lead to more than a doubling of output. This is as opposed to neo-Schumpeterian and evolutionary growth models which start from the assumption of a rivalrous nature of knowledge and technological development. By making knowledge spillovers non-rivalrous, it is possible to reconcile new growth theory with neoclassical growth theory, since knowledge, when made available, is freely accessible by all.<sup>12</sup>

This becomes much more problematic though once the rivalrous nature of knowledge spillovers is acknowledged. As argued by Romer (1994:13): “Even though the information from discoveries is non-rival - it is technologically possible for everybody and every firm to make use of them at the same time - economically important discoveries usually do not meet the other criterion for a public good; they typically are partially excludable, or excludable for at least some period of time. Because people and firms have some control over the information produced by most discoveries, it cannot be treated as a pure public good. If a firm can control access to a discovery, it can charge a price that is higher than zero.”

It is further noted that acknowledging the role of government policies in stimulating discovery, diffusion and technological advance would be more insightful than the standard neoclassical prescription of more saving and more schooling. Moreover, this would lead to policy debates about tax subsidies for private research, antitrust exemptions for research joint ventures, the activities of multinational firms, the effects of government procurement, the feedback between trade policy and innovation, the scope of protection for intellectual property rights, etc. (*Ibid* : p21). These are precisely the areas of interest to this thesis.

## 2.2 North-South models of New Trade/New Growth

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12 In neoclassical growth models technology is treated as a pure public good. As a result, firms can be treated as price takers and an equilibrium with many firms can exist.

The interdependence of ‘increasing returns industries’ between Northern and Southern economies was best illustrated by Grossman and Helpman (1991). Their model developed processes related to the production of ‘new’ goods by a more technologically advanced country, with international knowledge spillovers occurring through trade; they formalised the links between trade, innovation and growth, based on models of monopolistic competition.<sup>12</sup> They derived positive links between trade and technology when product innovation drives growth.<sup>13</sup> In their model, firms cover their upfront investment costs by exploiting their market power.

This implies that innovation usually gives rise to imperfect competition because it requires a market structure conducive to innovation.<sup>14</sup> Although Southern imitation of Northern goods reduces the expected duration of monopoly profits for Northern innovators, this effect is more than offset by the relocation of intermediate good production in the South, which releases Northern resources into the Research and Development (R&D) sector.<sup>15</sup> This is in addition to the productivity increases that result from offshoring and/or outsourcing stages of production in order to reap external economies of scale.<sup>16</sup>

Grossman and Helpman (1991, 1989) proceed to develop their dynamic North-South trade and growth model based on imperfect and monopolistic competition, which encompassed the concept of increasing returns. They take the view that technological progress results from the intentional actions of economic actors responding to perceived profit opportunities; returns come most often in the form of economic rents in imperfectly competitive product markets and thus provide the impetus for growth, as in the Schumpeterian process of creative destruction. They distinguish between product specific information and more general technical information; the latter is treated as a public good which contributes to the knowledge stock and facilitates subsequent innovations. As a consequence, investment incentives are endogenously

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13 As summarised by Davis and Darity (2005), with external economies of scale to the firm, but internal to the industry, production achieves a global span in terms of location: “Gains from trade are possible for industries with scale economies arising at an international level...Thus, trade can be beneficial with external economies at an international level for nations, with opportunities of accessing economies and avoiding diseconomies of scale in integrated markets” (*Ibid*: 1017).

14 Both internal and external economies of scale can be viewed as a kind of technological progress that increases the efficiency of an economy (Caves 1982). However, countries with ‘increasing returns industries’ are likely to gain more, and in doing so are also likely to further increase their market power and ability to innovate.

maintained by technological spillovers which allow successive generations of researchers to achieve technological breakthroughs using fewer resources than their predecessors.<sup>15</sup>

Although the Grossman and Helpman (1991) model is distinctively neo-Schumpeterian, Davis and Darity (2005) point out that the model has deeply classical roots, linked to the Smithian concept of the extent of the market and specialization through division of labour. However, as noted by Mondal and Gupta (2008:28) although the imitation rate in the South (of Northern goods) is endogenously determined, the multinationalisation of Northern firms in their model is not explicitly considered since imitation is assumed to be based on ‘given’ technologies; they make reference to Vernon (1966) who notes that a Northern firm will only transfer its production to a lower wage or Southern country, once its products have become standardised in the home [Northern] economy. This clearly resonates with the GVC governance typology we introduce in the next chapter.

Similar to Grossman and Helpman (1991), Young (1991) takes as ‘given’ the existence of technical processes produced by path breaking R&D by the more technologically advanced country and explores their productive actualisation and process of ‘learning by doing’ in the less technology advanced country. Knowledge spillovers occur nationally, but in the absence of the introduction of new goods or ideas, national knowledge spillovers and ‘Learning by Doing’ cannot be sustained. As a result, the less technologically advanced country may experience immiserising growth vis-à-vis the more technologically advanced trading partner. This situation arises should trade, according to comparative advantage, result in the production of goods in which ‘learning by doing’ has been exhausted and if new innovations are not forthcoming.

Two important characteristics of industry level analyses of technical progress are incorporated by Young (1991). The first are knowledge spillovers across industries. Productivity increases as indicated by output are taken as a function of learning by

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<sup>15</sup> The process of knowledge accumulation endogenously generates the productivity gains that sustain growth in the long-run.

doing which has occurred in other industries.<sup>16</sup> The second is the existence of strong diminishing returns in the process. This is in contrast to assuming that increases in cumulative experience will always yield a reduction in costs – i.e. that the productivity gains from learning by doing are essentially unbounded: Young's model points out that a bound is reached, where additional proportional increments to experience yield no additional gain in productivity.<sup>17</sup>

The fact that Learning by Doing may experience a plateau in Young (1991) is similar to what occurs with Arrow (1962). However, the key difference is that Learning by Doing is a cumulative function of output in Young (1991) compared to investment in Kaldor and Mirrlees (1962). Young (1991) therefore makes a distinction within the 'modern' sector between mature industries, those that have exhausted Learning by Doing opportunities, and infant industries, where Learning by Doing from given technologies continues.

Despite being informed by the experience of the East Asian NICs, the models developed by Grossman and Helpman (1991) and Young (1991) posit Northern economies as innovators and Southern economies as the recipients of 'given' technologies and 'imitators' of Northern developed goods. How these goods are obtained and actualised in practice remains ambiguous. Not only is the assumption of knowledge spillovers a key limitation, but the distinction between the North and the South is a crude one which is arguably out of date. The following section introduces two measures that attempt to address some of the gaps and controversies within the new trade/new growth theory and literature to date and highlights some continued limitations, as well as contradictions.

### **2.2.1 The Sophistication and Productivity of Exports**

The export sophistication measure developed by Hausmann et al. (2006) began to feature within many World Bank country growth assessments in the previous

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16 It is noted that no formal analysis of cross-industry spillover effects in learning by doing has been made. However, that it seems reasonable to assume that many of the technical and managerial advances brought about by experience in the production of certain products have applications elsewhere. Reference is made to 'learning by doing' which has been incorporated into models such as Boldrin and Scheinkman (1988), Stokey (1988) and Succar (1987); in addition to anecdotal evidence reported in Rosenberg (1982) and Jaffe (1986).

17 In other endogenous growth and learning by doing models output is taken as a function of capital, labour, cumulative experience and the elasticity of output (i.e. a one percent increase in cumulative experience always leads to a percentage reduction in costs).

decade.<sup>18</sup> Its use and associated policy prescriptions closely correspond to that of the post-Washington Consensus with the role of the state posited as facilitator and subsidizer of export activities. The measure is based on export data and the per capita incomes of exporting countries. It posits that producers ‘upgrade’ by increasing the technological sophistication of their exports, as indicated by the income which accrues to specific product lines (Box 3).

### **Box 3: The Export Sophistication Model**

The determination of the production structure of an economy is one in which standard comparative advantage plays a role, but not exclusively. This is illustrated in the following way. Suppose all units of goods have an exogenously given world price,  $p$ . Each good is identified by a certain productivity level  $\theta$  which represents the units of output generated by an investment of a given size. The range of goods that an economy is capable of producing is given by a continuous interval between 0 and  $h$ . The role of comparative advantage is captured by assuming the upper boundary of this range,  $h$ , is an index of the skill or human capital level of the economy. Hence a country with higher  $h$  can produce goods of higher productivity, or ‘sophistication.’ Projects are of a fixed size and entail the investment of  $b$  units of labour. The  $\theta$  associated with an investment project is discovered only after the investment is sunk. All that investors know *ex ante* is that  $\theta$  is distributed uniformly over the range,  $0-h$ , *i.e.* the cost discovery process becomes socialised: once the  $\theta$  associated with a project/good is discovered, this becomes common knowledge; others are free to produce the same good without incurring the additional ‘discovery’ costs (but at a somewhat lower productivity than the incumbent).

Expected profits depend on expectations regarding both the investors own productivity in the modern sector, compared to everyone else’s. In sum, these equate to the product price and expected productivity. Expected productivity, and in turn profitability, are determined by ‘skills’ ( $h$ ) and the number of investors engaged in cost discovery,  $m$ . The larger the  $m$ , the higher the productivity in the modern sector, which results in increasing returns to scale in the modern sector. However, increasing returns in this model arise from cost information spillovers rather than technological externalities (as in other endogenous growth models).

In equilibrium the number of entrants into the modern sector is endogenous and determined by the requirement that excess profits are driven to zero. Each modern sector requires  $b$  units of labour upfront, resulting in a sunk investment of  $bw$ , where  $w$  is the economy’s wage rate. Long-run equilibrium therefore requires equality between the present discounted value of  $r(p, h, m^*)$ , where  $p$  is the discount rate, and the sunk cost of investment. Wages are determined by the intersection between supply and demand; the modern sector’s labour demand therefore equals  $m^*b$ . The traditional sector’s labour demand is given by the decreasing function  $g(w)$ ,  $g'(w) < 0$ . Labour market equilibrium is therefore given by:  $m^*b + g(w^*) = L$ . In the short-run labour markets clear, but  $m$  is taken as fixed.

In terms of comparative dynamics, starting form an initial equilibrium given by  $m^0, w^0$ , an increase in a country’s labour endowment results in lower  $w$ . This induces more firms to enter the modern sector and engage in cost discovery, which in turn pulls wages up. What is key for this result is the presence of information spillovers in the modern sector. In sum, the models shows how productivity in the modern sector is driven by  $\theta^{max}$  which depends on country size ( $L$ ), human capital ( $h$ ) and the number of entrepreneurs engaged in cost discovery.

Source: Adapted from Hausmann et al. (2006).

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18 And for each of the selected country case studies with the exception of Bangladesh.

The measure does not require industry data, simply information on the per capita incomes of exporting countries and disaggregated export data. It includes similar indicators to Lall et al. (2005)<sup>19</sup> but as opposed to constructing competitiveness indices and locating countries and regions within upper or lower quartiles, it instead presents sophistication results across products and for individual countries export baskets. It also excludes much of the discussion related to the development of industrial capabilities as emphasized by Lall (1993, 2000), since it focuses solely on income and limited human capital indicators, such as population size.

The measure eschews a primary/manufacturing distinction and includes analysis of the contribution of primary commodity exports to income and therefore also to productivity. All export goods are ranked according to the income levels of the country that exports them; this is taken as a measure of ‘sophistication’. Productivity is indicated by the income generated by the export of the product(s).<sup>20</sup> Gross Domestic Product (GDP) and per capita income as aggregate measures are considered to encapsulate New Trade/ New Growth aspects. The logical postulate is that an increase in a country’s GDP leads to the export of increasingly sophisticated goods (since, all rich countries produce similar goods).

However, it is acknowledged that while some countries have managed to export more sophisticated goods than their level of GDP would otherwise indicate, others such as Switzerland - in the case of watches - and Belgium - in the case of chocolates - export products which cannot be explained by the ‘normal forces of comparative advantage’ (one could also add cut-flowers and the Netherlands to this list). It is in this respect that aspects of New Trade Theory such as increasing returns to scale, network effects, technological spillovers and thick-market externalities are noted as helping to resolve

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19 Using export data for 97 countries from UN Comtrade, relative sophistication scores for 1990 and 2000 were calculated for 237 products at the SITC Rev. 2 3-digit level and for 766 products at the 4-digit level. To obtain an average value for exporter incomes, countries were divided into ten income groups using World Bank data on nominal per capita GNI.

20 This is calculated by taking a weighted average of the per-capita GDPs of the countries exporting a product, where the weights reflect the revealed comparative advantage of each country in that product; for each good, an associated income/productivity level is generated (called PRODY). An income/productivity level is subsequently constructed, which corresponds to a country’s export basket (called EXPY), by calculating the export-weighted average of the PRODY for that country. EXPY is then taken as the productivity level associated with a country’s specialization pattern. The proposed ‘novelty’ of the measure is that it presents a quantitative index that ranks traded goods in terms of their implied productivity. But moreover, EXPY provides a good indication for subsequent growth.

some of these puzzles. No mention is made in relation to trade, finance, or any other policy.

Without exploring how poor countries manage to produce more sophisticated goods than their per capita level of GDP would otherwise indicate, with specific reference to New Trade/ New Growth Theory it is noted that: “the idea that specializing in some goods is more growth promoting than in others, is not new... In models with Learning-by-Doing externalities, long-run growth tends to become endogenous and depends on economic structure and the rate at which it is being transformed. Endogenous growth models based on learning spillovers have been difficult to test empirically because we do not have good estimates on (or strong priors about) which types of goods are more likely to generate such spillovers. In our framework, production indeterminacy maps into economic performance in a straightforward and empirically verifiable way” (Hausmann et al. 2006: 2).

The measure therefore focuses on specific product lines that are assumed to generate such spillovers, since such goods are also exported by rich countries and therefore *embody* technological change. The framework developed is underpinned by a model of the ‘cost discovery process’ undertaken by entrepreneurs, which assumes knowledge spillovers in the form of ‘cost information’: sunk costs that have been paid for and subsequently become ‘socialised’.

For example, it is noted that: “even if a good comes with a standard technology (blueprint), domestic factor endowments and institutional realities will require tinkering and local adaptation.<sup>21</sup> This process is one with considerable positive externalities for other entrepreneurs. If the project is successful, other entrepreneurs learn that the product can be produced and emulate the incumbent. In this way the returns to the pioneer investor’s cost discovery become socialized” (Hausmann et al. 2006: 2).<sup>22</sup> Further that, “countries that are able to overcome these externalities through policies that entice entrepreneurs into new activities can reap the benefits in terms of higher economic growth” (*Ibid*: 17).

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21 Reference is made to Evenson and Westphal (1995) and Lall (2000).

22 The literature thus relates to the developments within new *New Trade Theory* which emphasise cost uncertainty and heterogeneity at the level of firms so as to provide a better account of global trade, such as: Bernard et al. (2003), Melitz and Ottaviano (2008).

No mention is made of the links between firms that may also help overcome such externalities; nor the specific policies that may be used by governments to correct market failures, besides ‘enticing entrepreneurs’. The fundamentals referred to in the model include the size of the labour force and ‘the number of entrepreneurs that can be stimulated to engage in cost discovery in the modern sectors of the economy’. Knowledge spillovers are assumed to become public goods.

However, instead of being the result of technological externalities, increasing returns result from cost information spillovers which subsequently reduce barriers to entry in the form of costs for incumbent firms. The overarching assumption is that the income earned from the export of new products is akin to a product rent, which is then used to invest and diversify by firms within country. However, the origins of entrepreneurs are not actually defined.

### **2.2.2 The Product Proximity Literature**

The other addition to the literature which pertains to build on New Trade and New Growth aspects, and which also began to feature prominently within World Bank country growth memorandums at around that time was developed by Hausmann and Klinger (2006). These authors explore Southern imitation of Northern goods, which are ‘new’ in the South. They take as their starting point the premise that producing new things is quite different to producing more of the same: each product involves highly specific inputs such as knowledge, physical assets, intermediate inputs, labour training requirements, infrastructure needs, property rights, regulatory requirements or other public goods.

For example, Hausmann and Klinger (2006) note that farming asparagus requires a certain type of soil, mechanized farming equipment, agribusiness that produces at an efficient scale, port infrastructure to ship the product unspoiled and ‘connections with the small group of multinational purchasers of this product’. They argue that although the exact set of production characteristics may be unique to each good, substitutability is possible. For instance, producing artichokes may require similar infrastructure, management techniques and marketing relationships to that of asparagus, but a different type of soil and planting cycle.

It is assumed that established industries have, by definition, assured the presence of all related inputs and that these are subsequently made available to new entrants into a given industry. However, firms that venture into *new* product lines will find it much harder to secure requisite inputs. Thus, it is argued that the probability a country will develop the capability to produce one good is related to its installed [physical and human] capacity in the production of another similar good, or one for which the currently existing productive capabilities can be easily adapted. Given the varying degree of asset specificity, the speed of structural transformation will depend on the density of the product space near the area where each country has developed its productive capabilities. If different goods require similar inputs and endowments they are considered ‘close’ together, but if they require totally different capabilities they are ‘far’ apart.<sup>23</sup>

With specific reference to New Growth/New Trade Theory, it is further argued that: ‘Much of the work on quality ladders or variety models (Grossman and Helpman 1989 & 1991, Aghion and Howitt 1992) implicitly assume a perfectly homogeneous product space in the sense that the distance to a new product, measured by the fixed cost needed to develop a new variety, is independent of the type of specialization the country exhibits...Young (1991) considers a continuum of goods and asks whether free trade will lead to a specialization in goods that have exhausted Learning-by-Doing versus goods that still have room to learn. However, he does not look at how the heterogeneity of the product space, and the location of individual countries in that space, affects their cost of moving to new goods’ (Hausmann and Klinger 2006: 4).

In the framework developed by Hausmann and Klinger (2006) emphasis is not on increasing productivity within single product lines but on the increases that arise from diversification across the product space. The effects of international trade are related to whether or not they force a country to specialize in the ‘sparse’ or ‘dense’ part of the product space, which in turn determines comparative advantage.<sup>24</sup>

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23 The distance between pairs of products is measured based on the probability that countries in the world export both, informed by the conditional probabilities of exported products moving in the same directions.

24 Reference is made to industry-specific Learning-by-Doing (Arrow 1962, Bardhan 1970) or industry externalities (Jaffe 1986); there may be technological spillovers between industries (Jaffee et al. 1992)

The methodology makes a clear distinction between upgrading within existing product categories [the intensive margin] and producing ‘new’ goods [movement across the extensive margin] and focuses on the latter process as opposed to the former. The metaphor used in the construction of the product proximity measure is that firms are like monkeys who occupy certain trees of related products. The forest – the product space – is taken as identical for all countries and is fixed. The PRODY indicator of Hausmann et al. (2006) is used as a measure of the productivity of each tree (Box 4).

#### **Box 4: Product Proximity Model**

The model is based on two goods: a standard good with price  $p_1 = 1$ ; and a new good with price  $p_2 > 1$ . The standard good has been produced in the economy previously, so the requisite set of capabilities exists in the country. A firm can produce the standard good and earn 1, or it can invest in the production of the new good and earn a higher price. Adapting the existing capabilities for the new good creates a fixed cost,  $C$ . The cost rises with the distance between the two goods,  $\delta_{12}$ . But once this cost between two goods has been overcome and the move made, the capabilities developed are a public good, in the sense that any other firm can now enter without having to pay the fixed cost. Therefore the returns to producing the new good in the first period are:  $P_2 - C$  ( $\delta_{12}$ ). A firm could therefore either stay in good 1 for two periods, earning 1+1, or it could jump to the higher quality good by paying the fixed cost in the first period and earning  $P_2$ . The firm would only jump if the new good is upscale, i.e.,  $P_2 > P_1$ . If not, all firms would remain in the standard good. An intra-industry spillover is represented by the move by the first generation of firms into production of the second good, since they do not internalize the benefits created for subsequent entrants. An inter-industry spillover is represented by firms which adapt their capabilities to good 2 and which do not internalize the returns from their jump subsequently enabling future generations of firms to jump into good 3.

If the product space is not continuous, there could be stagnation in the process of structural transformation with firms opting not to innovate because there are no goods at the right distance that are sufficiently attractive to pay for the adjustment costs; thus the cost of jumping and the degree to which the price of the new good exceeds the current goods determines the process of transformation. The product space is represented as a matrix of the pairwise distances for all products. As opposed to assuming a smooth quality ladder exists (as in Grossman and Helpman 1989), or that productive opportunities are determined by factor endowments (as in the Heckscher-Ohlin model), a measure of conditional probability is used which reveals the distance between products. Data is taken from Feenstra et al. (2005) ‘World Flows Data’ and are drawn from UNComtrade for the period 1962-2000 at the SITC 4-digit level of desegregation (1006 products).

As the number of exporters of any good A falls, the conditional probability of exporting another good given that you export A becomes a dummy variable, equal to 1 for every other good exported by that particular country and 0 otherwise. But only pairs of conditional probabilities going in the same directions are considered as an inverse measure of distance, marginal exports are excluded, and only those goods for which the country has a revealed comparative advantage (RCA) are included.

Source: Adapted from Hausmann and Klinger (2006).

The process of structural transformation is considered to be a result of firms, jumping from poorer parts of the forest to richer parts. The probability of doing so successfully depends on the expected productivity of those ‘trees’ and how close firms are to them,

in terms of their specific assets and capabilities. The measure is output based and assumes unit outputs per firm, i.e. it assumes perfectly competitive markets at the firm level. Despite this, the measure is posited to be complementary to the literature on the importance of forward and backward linkages and suggestive of broader dimensions of agglomeration. This is in spite of its emphasis on the flexibility of the redeployment of assets and capabilities from one sector to another.

### 2.2.3 Limiting Assumptions

Despite their limitations, there are a number of recognisable elements of Nelson and Pack (1999) within the export sophistication and product proximity measures reviewed thus far. The first is the concept of spillovers which result from production for export within the modern sector. However, whereas Nelson and Pack (1999) assume knowledge spillovers, Hausmann et al. (2006) explicitly and Hausmann and Klinger (2006) more implicitly, assume cost discovery spillovers which are subsequently made available to new entrants with no effect on market structure.

Second, both models rely on the strength of entrepreneurship. In Hausmann et al. (2006) entrepreneurship is taken to be a function of human capital, as indicated by population size. In Nelson and Pack (1999) a distinction is made between skilled and unskilled labour. In both cases entrepreneurs are assumed to be indigenous but are not really defined;<sup>25</sup> nor is the process by which the initial ‘seeding’ of the modern sector in Nelson and Pack (1999), or acquisition of more ‘sophisticated’ goods in Hausmann et al. (2006) and Hausmann and Klinger (2006) really explored.

Nelson and Pack (1999) explicitly recognise how the process of assimilation of modern technology creates the impetus for the upgrading of human capital. However, in Hausmann et al. (2006) and Hausmann and Klinger (2006) the concept of upgrading refers to the productivity of exports as indicated by the income which typically accrues to other exporters of the same product, as indicated by GDP. Technology is not explicitly discussed. Instead, specific product lines are assumed to embody technological change and a degree of asset specificity. Despite this, emphasis

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<sup>25</sup> The distinction between ‘peasants’ and ‘entrepreneurs’ is made when these measures are discussed for Ethiopia in its recent Economic Growth Memorandum (World Bank 2007a). In Grossman (1984) the entrepreneurial class is endogenously determined; entrepreneurs are defined as managers of industrial enterprises.

is placed on the flexibility of the redeployment of assets and capabilities, such as labour, from one product line to another.

The new measures put forward by Hausmann et al. (2006) and Hausmann and Klinger (2006) explicitly avoid consideration of the nature of technology. Instead the measures assume that technology embodied in the form of more sophisticated goods becomes endogenised with market structure remaining perfectly competitive during the process. Although lead firms are expected to derive a cost advantage from being the initial discoverers of a new good, in the long-run all firms are considered equal: since cost advantages are assumed to become socialized over time and freely available to all new entrants, with no long-run advantage being maintained by lead firms. If there is any role for the state it is to subsidise the cost discovery process undertaken by lead firms because of the public good element of assumed cost information spillovers. The avoidance of any discussion related to the identity of entrepreneurs leaves open a number of conundrums.

The role of the state is not explicitly discussed in Nelson and Pack (1999), but in Hausmann et al. (2006) and Hausmann and Klinger (2006) it is – with a limited role ascribed to facilitative functions. This role closely corresponds to that assumed to the state in the post-Washington Consensus.<sup>26</sup> As opposed to the role of the state being central to engineering structural transformation, as in the developmental state literature, in this latter view, the state's role is limited to responding to private sector demands, correcting market imperfections and bridging market failures as and when necessary. In this sense, the associated policy prescriptions are very predictable.<sup>27</sup>

In sum, the export sophistication and product proximity literature, taken together, selectively incorporate aspects of New Trade/New Growth Theory and attempt to make them more empirically relevant. Both assume Southern imitation of ‘new’ goods and avoid explicit discussion of how this is really achieved. Moreover, they assume that the cost discovery process, once undertaken becomes socialized. This is a

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26 The dichotomous ‘market’ versus ‘state’ approach so characteristic of the ‘Washington Consensus’ has been toned down in a ‘new development economics’ and post-Washington Consensus, which limits the role of the state to overcoming market imperfections through intervention.

27 For example, Lin (2010) refers explicitly to the role of the state as being that of a facilitator, with a primary role of correcting market failures which result from information asymmetries, during the process of structural change.

key limitation: as the advance of endogenous and neo-Schumpeterian models of growth have taught us, people and firms have some control over the information produced by most discoveries, which as a result cannot be treated as a pure public good (Romer 1994).

The new measures can only be said to retard rather than advance our understanding of New Trade/New Growth Theory and its relevance for late industrialisers. Given the heavy reliance on export value data, the authors note that it would be useful to extend the product proximity analysis to include: changes in export product unit values, the role of economic policy and industrial organization in achieving structural transformation and the role of FDI in enabling improbable transitions. These are all aspects related to the external and internal governance of trade and integration with GVCs.

## **2.3 Application of Measures to the Selected Country Case-Studies**

In the following sub-section, we briefly review the application of the measures to our country case-studies, which provides further justification for the research undertaken in this thesis and our methodology introduced in Chapter Three. We begin with Cambodia, followed by Bangladesh as a comparator country. This is followed by Kenya, and the comparator case-study of Ethiopia.

### **2.3.1 Cambodia**

In Cambodia's most recent World Bank (2009) Country Economic Memorandum on 'Sustaining Growth in a Challenging Environment' it is described how a striking feature of Cambodia's export portfolio is its low level of sophistication which has not been increasing significantly in recent years.<sup>28</sup> The methodology of Hausmann and Klinger (2006) is used to justify diversification across the product space as opposed to solely targeting sophisticated exports and trying to produce the goods 'rich countries produce.' Although the basis of the claim on which the assessment as to the fragility of the Cambodia's industry and its longer-term sustainability is tenuous, concerns

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<sup>28</sup> It argues that the level of sophistication of Cambodia's exports (as measured by variable EXPY) is lower than other countries at the *same level of development*, when in fact the countries to which Cambodia is compared to are not at the same levels of development (Brazil, Botswana, China, Hong Kong, India, Indonesia, Japan, South Korea, Malaysia, Malta, Oman, Singapore, Taiwan, Thailand and Vietnam).

were raised as far back in World Bank (2003) related to the potential for the garment industry to provide for long-term growth given limited backward linkages.

Despite experiencing double-digit growth over the last decade and hosting the garment industry for approximately the same amount of time, local linkages remain limited. The industry remains almost wholly foreign-owned and mostly detached from the rest of the economy. Notwithstanding the employment the industry creates (for mostly female migrant labourers), a combination of a highly liberal trade and investment regime, non-existent industrial policy and creation of special economic zones in an uncoordinated way has rendered the industry fragile. This became most apparent at the onset of the global financial crisis, which occurred at the same time as other changes in the external trade environment, such as the removal of safeguards of Chinese exports of textiles and clothing since the end of 2008.

Although Cambodia is a much later entrant than Bangladesh into the garment industry, there are clear differences in how trade and industrial development has been managed. Nevertheless, despite the fragility of the garment industry in Cambodia, it is hard to see what exactly Cambodia has done wrong according to the type of industrial policy interventions recommended by the Hausmann and Klinger (2006) methodology: the state has been so facilitative that each job created in 2008 was estimated to have cost around \$1,200.<sup>29</sup> Cambodia has benefited from its proximity, geographically, to larger manufacturers such as in China. Moreover, it has benefited from preferential market access to the US<sup>30</sup> and EU markets in order to attract the garment industry from Hong Kong, Taiwan and more recently, China. These aspects, including capital mobility and openness to FD are however, all ignored.

### **2.3.2 Bangladesh**

On the one hand, Rodrik (2006) criticizes Bangladesh's lack of sophisticated exports relative to China given comparable initial conditions - levels of human capital and per capita income - and continued dominance of low-skilled garments in its export basket. On the other, Hausmann and Klinger (2006) surmise that actually, Bangladesh has fared well given initial conditions: it has moved into the product space predicted on

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29 Based on the results of key information interviews undertaken in 2009 and discussed in the Cambodia country case-study.

30 The US-Cambodia Trade Agreement on Textile and Apparel (TATA) was signed in 1999; the first trade agreement of its kind, this bilateral agreement made increases in quota allowance for Cambodia contingent on labour standards (monitored by the International Labour Organisation (ILO)).

the basis of levels of human capital in 1975. Despite the intended complementarity between the sophistication and proximity measures, their application in the case of Bangladesh is contradictory.

The movement of the garment industry into Bangladesh was motivated by changes in the external governance of trade. Bangladesh began its liberalization process during the late 1970s, further to independence in 1971. The introduction of the Multi-fibre Agreement (MFA) in 1974 - which imposed restrictions on larger and more established exporters in East Asia such as South Korea at that time<sup>31</sup> - prompted the re-location of the industry into Bangladesh. The MFA provided a framework of voluntary export restrictions (VERs) that regulated textiles and clothing exports from most developing economies entering almost all major industrial markets. The agreement was subsequently incorporated into General Agreement on Tariffs and Trade (GATT) during the Uruguay Round, and then subsequently into the World Trade Organisation (WTO).

As described by Rahman (2004) the process of relocation of mostly South Korean firms, notably Daewoo, into Bangladesh was facilitated by collaboration with the local, private, garment industry, Desh Company.<sup>32</sup> The approach towards fostering local capabilities has not been confined solely to the node of production: Bangladesh is now an investor in garment production overseas, including in new entrant countries such as Cambodia. This suggests that whilst Bangladesh may not have been able to move up the value-added ladder into other related and more ‘sophisticated’ exports (to the same extent as, for example, China), it has managed to move backwards (through the fostering of local linkages and inputs into the industry), as well as feature amongst second-tier garment manufacturers who have also begun to offshore factories - and globalise - including in Cambodia.<sup>33</sup>

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31As summarized by Liu and Sun (2004:53), quantitative restrictions on textiles and clothing trade started as early as in the 1930s, when the US negotiated a voluntary export restraint (VER) on Japanese textile exports. In response to protectionist pressures in the US in the late 1950s, Japan, Hong Kong, China, India and Pakistan agreed to voluntary export restraints for cotton textile products. At US insistence the Multi-fibre Arrangement (MFA) came into effect on 1 January 1974.

32 As part of its global strategies, the Daewoo Corporation of South Korea became interested in Bangladesh and its Chairman, Kim Woo-Choong, proposed an ambitious joint venture to the Government of Bangladesh which involved the development and operation of tyre, leather goods, cement and garment factories (Mahmood 2002).

33 Based on the result from a number of firm-level interviews undertaken in Cambodia during October 2008. See also Gereffi and Frederick (2010) which classifies Bangladesh as a second-tier garment exporter

### **2.3.3 Kenya**

Kenya is often referred to within the literature as somewhat of a success story given its success in reducing traditional commodity dependency and moving into the ‘modern’ agricultural sector, producing high value horticulture for export and supplying ‘just-in-time’ supply chains. Like Bangladesh, after achieving independence, Kenya’s economic strategy, in common with that of many other African countries, was based on import substituting industrialisation. This began to change in the early 1980s when the first Structural Adjustment Loans were signed and economic controls were relaxed. By the mid-1990s all administrative controls hampering international trade had been abolished, tariffs had been significantly reduced, export incentives put in place, exchange rate controls removed and the current account liberalised (Manda and Sen, 2004).

As summarized by Dolan (2001), the boom in non-traditional exports since the 1980s is best captured by the expanding fresh fruit and vegetable industry, which has integrated both transnational agribusiness firms and smallholder farmers. Similar to Cambodia and Bangladesh, Kenya’s shift in production during the 1990s was motivated by changes in the external trade environment. Preferential market access is generally recognized as one of the most important factors for the growth of exports of fresh vegetables from African, Caribbean and Pacific (ACP) countries. The non-reciprocal regime between the European Union (EU) and ACP has shifted in recent years towards reciprocal arrangements, and Free Trade Agreements (FTAs) known as Economic Partnership Agreements (EPAs).

In Kenya’s World Bank (2008b) country economic memorandum on ‘Accelerating and Sustaining Inclusive Growth’, reference is made to the export sophistication measure.<sup>34</sup> The ability of Kenya to develop a comparative advantage in products that are more sophisticated is analysed and reference is made to Hausmann et al. (2006) and Hausmann and Klinger (2006). Results suggest that Kenya continues to have comparative advantage in a large number of resource and labour-intensive subsectors in agriculture. Further analysis, limited to the agricultural sector undertaken by Chandra et al. (2007) shows how between 1980-2004 Kenya managed to diversify

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<sup>34</sup> A benchmarking exercise is also carried out which compares Kenya to Ireland, Japan, Singapore, South Korea, China, Thailand, Botswana and Mauritius.

away from traditional commodity exports such as coffee and tea into cut-flowers; the latter having an export sophistication ‘score’ almost four times higher than coffee and tea. How movement into more sophisticated exports was achieved in practice, remains unclear.

### **2.3.4 Ethiopia**

Similar to how Cambodia is the late entrant into the garment industry relative to Bangladesh, so too is Ethiopia in the horticulture and more specifically cut-flower industry, compared to Kenya. Unlike Kenya, however, Ethiopia is classified as a Least Developed Country (LDC). This means it is able to export to the EU under the Everything-but-Arms (EBA) regime which provides for quota and duty free market access; hence, the impetus for Ethiopia to enter into an EPA is weaker.

Ethiopia’s process of engagement with the cut-flower GVC has been FDI-led. As summarized by Melese and Helmsing (2010), the industry in Ethiopia is characterized by the dominant role of Dutch foreign investors and traders who dominate export trade; Dutch development cooperation is also noted as playing an important role in the development of the sector.<sup>35</sup> Dutch growers, who are single estate producers, account for most cut-flower exports, followed by joint venture farmers and Ethiopian growers. Some argue that Ethiopia’s current five year plan (2010-15) reflects a 21<sup>st</sup> century approach to industrial development and export diversification. Because it includes similar elements to that used by other Developmental States, it should clearly state upfront this approach. This is because the government is pursuing an industrial policy that is private sector-driven but with strong state guidance and directives (Ohno, 2009).

In comparison, the approach recommended in Ethiopia’s World Bank (2007a) Country Economic Memorandum is a “supportive and responsive government which creates an environment that encourages cost discovery and solves bottlenecks as they emerge” (2007:69). This approach is recommended with reference to Hausmann et al. (2006) and praise is given with regards to the government’s response to the demands of the floriculture [rose] industry. Discussion of the more directive elements of the

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<sup>35</sup> They highlight a number of indicators related to the presence of foreign and domestic entrepreneurs in the sector, such as the presence of domestic firms relative to FDI in the form of sole or joint-ventures, in addition to outcome indicators such as performance differentials between domestic and foreign firms.

GVC integration strategy, beyond subsidising the discovery process and socialising knowledge spillovers, remain absent.

## 2.4 Limitations with Learning by Doing Models

Since the time of writing this thesis, it is fair to say interest in the export sophistication and product proximity measures has been superseded by the mainstream incorporation of the GVC literature. This literature is introduced next in Chapter Three, after summarising some of the tensions within the literature regarding the conceptualisation and measurement of learning by doing. This provides some distinct concepts as well as measurement issues, to be addressed by the research methodology.

### 2.4.1 Learning by Doing in Arrow (1962)

Some of the key features of Arrow's (1962) model of the economic implications of learning by doing within old growth theory, include the choice of a variable that adequately represents experience. Instead of taking cumulative output as an index of experience, cumulative gross investment is used. Thus, Arrow (1962) like Solow (1956) assumes technical change is embodied in new capital goods.

Barro and Sala-i-Martin (1995) summarise Arrows assumptions as follows: first, learning by doing works through each firm's investments – an increase in capital stock leads to a parallel increase in knowledge stock; second, knowledge is assumed to be a public good which spills over instantaneously across the whole economy. Under these assumptions, the production function yields increasing returns to scale in gross investment and labour used. However, like conventional models with diminishing returns, Arrow (1962) predicts that the rate of growth in per capita consumption must go to zero in an economy with zero population growth.

The assumption within Arrow (1962) and Kaldor and Mirrlees (1962) - which used variants of ideas to construct closed economy models – is that the economy is competitive, which is also the case in Nelson and Pack (1999) and implicit within the export sophistication and product proximity literature. However, this is only a valid assumption if firms can learn costlessly, completely and instantaneously from the experience of others and if learning spillovers are complete. Further extensions to

Arrow (1962) include that by Dasgupta and Stiglitz (1988:250) who sought to explore the effect of these processes on market structures. They note that such extreme assumptions cannot be taken seriously since invariably these processes involve dynamic scale economies in production and a form of sunk cost. As a result there is tendency towards the emergence of dominant firms when learning effects are powerful (Dasgupta and Stiglitz, 1988:266).<sup>36</sup>

Obviously, the emergence of such firms has important policy implications. These were alluded to by Nelson and Winter (1982) in their evolutionary theory of economic change. They provided a coherent critique of neoclassical growth theory which begun the focus on national innovation systems, in view of their starting point being the rivalrous nature of knowledge spillovers. This critique began much earlier though with Penrose (1959) who defined the firm in terms of a collection of resources (human and non-human) under a specific boundary of coordination.

As discussed by Pitelis (2009), Penrose (1959) alluded to two major categories of ‘causes’ of growth: those external to the firm and those internal; with regards to the latter particular attention was drawn to the important role of firm managers, given the nature of tacit knowledge gained from experience. This link to endogenous factors of a firm in turn relates to economies of growth, because of the role of accumulated knowledge and experience, which are quite apart from economies of size (Pitelis, 2009). According to Penrose (1959) limits to firm growth include the rate at which experienced managers can plan and implement; hence, the multinational firm itself can be considered the very outcome of such internal pressures for growth.

#### **2.4.2 Learning by Doing in Nelson and Pack (1999)**

The Nelson and Pack (1999) model was developed as a counterargument to that made by the accumulationists in relation to the interpretation of the catch-up experience of the East Asian NICs. An attempt was made to incorporate aspects of structural change occurring at the micro and sectoral level. Aspects like the tendency for more profitable firms to drive out less profitable ones<sup>37</sup> and active state intervention to manage the transmission and assimilation of imported technologies - the co-evolution of national innovation systems (NIS) with networks of firms - were played down. The

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36 This conclusion is similar to Nelson and Winter (1982).

37 See Nelson and Winter (1982).

efficiency by which outputs are produced from existing technologies and inputs as indicated by total factor productivity (TFP) growth, one result of learning by doing remains the subject of detailed empirical investigation. For example, Lucas (1988, p. 27) points out that “on-the-job-training or learning by doing appear to be at least as important as schooling in the formation of human capital.”

Because this thesis begins with the premise of rivalrous and non-automatic knowledge spillovers, reference to new trade/ new growth models such as Nelson and Pack (1999) must be supplemented by information on the modalities through which producers have engaged with the modern export sector and pursued GVC integration. The identification of levels of learning by doing and an understanding of the institutional ties, embodied within elements of an NIS, which bind these together so to produce societal wide outcomes and knowledge spillovers in turn provides a link to external governance and public policy aspects. Because these aspects are alluded to in Nelson and Pack (1999), they are unpacked in the following sub-sections.

#### **2.4.3 Levels of Learning by Doing and Bridging Capability Gaps**

As discussed by Kessing and Lall (1992), trade theories pay almost no attention to the information requirements, information flows, and marketing efforts involved in exporting. Later explanations, less rigorously modelled but more empirically based draw on technological differences between countries characterised by imperfect markets and accord an important role to economies of scale. The development of theories of intra-industry trade belong to this tradition, similarly, the existence of trade based on market imperfections such as economies of scale in production and learning from experience.<sup>38</sup>

More importantly Kessing and Lall (1992) refer to a continued limitation being that there is no explicit recognition of marketing and information flows, or the learning involved in trade theory: although deficiencies can be modelled as market failures, this results from the assumption of costless and instantaneous flows in neoclassical models and does not account for the fact that information activities themselves

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38 They summarise briefly how new trade theories essentially combine explanations of comparative advantage, product differentiation and linkages between industries as explanations for why particular products within industry groups are competitively manufactured in particular locations. This is through a combination of comparative intra-industry trade combined with developments in industrial organisation theory.

generate income (*Ibid*). Within the value chain context, an obvious information activity relates to the role of intermediaries.

#### **2.4.4 Bounded Learning by Doing**

One major conceptual challenge that models of learning by doing face is their inevitably bounded nature. Young (1991) referred to a plateau of learning by doing, unless new innovations are forthcoming. The interaction between invention and serendipitous learning by doing is further taken up by Young (1993).

In any given environment, a finite amount of knowledge is serendipitously acquired from experience gained from productive activities, as opposed to purposeful investigation (Young, 1993). The two processes are however, intrinsically interrelated. The need to actualise the productive potential of newly invented technologies makes the incentives to engage in costly inventions - and hence the rate of invention - dependent on the rate of learning. The societal cumulative learning experience is thus bounded by the total number of good has invented and, or productively actualised, in an iterative process. The actual mechanisms through which this takes place are not described by Young (1993) though symmetric spillovers across sectors are assumed.

If learning by doing processes become exhausted within the production of any given good and new innovations are not forthcoming within a particular sector, sustaining knowledge spillovers across a society subsequently become important. In order to generate and sustain knowledge spillovers, the translation of tacit knowledge, including on the job training, into more explicit forms is necessary in order to contribute to overall stocks of knowledge. How these processes are undertaken in practice are related to the stimulation of societal learning by doing processes. Hence, aspects of external value chain governance in view of public policy considerations become integral.

#### **2.4.5 Societal learning and National Innovation Systems**

All learning starts at the interpersonal level, before developing into more intrapersonal learning (Ewing, 2005). The process of learning by doing therefore entails the actualisation of both tacit and explicit or codified forms of knowledge; the process of

translating tacit forms of knowledge into codified forms invariably brings into the analysis wider societal and institutional factors (Dosi, 1988). As soon as consideration of not only individual interests but also those of communities or groups of individuals, learning materialises in particular rules and procedures within institutions which are structured by formal mechanisms and work at different levels (Lundvall, 2012).<sup>39</sup>

Evolutionary processes of learning where agents are transformed and become more diverse in terms of what they know and what they know how to do are simply not reconcilable with the rational ‘representative agents’ that populate the neoclassical world (Dosi, 1999). The NIS literature focuses on flows of knowledge within economies, rather than knowledge investments and stocks. Although, the processes are invariably interconnected, the NIS approach essentially encompasses individual, organizational and inter-organizational learning, in order to link from innovation to economic growth. Hence links between formal institutions, such as higher education, and intermediate institutions including business associations<sup>40</sup> which can support capacity building and flows of knowledge, including the conversion of tacit into explicit forms, must be incorporated into analysis.

A NIS is defined by Freeman (1987) as a network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies. It focuses on the diffusion of technology and the identification of actors, including firms that may block or induce the evolution of new productive activities, through their interactions. As discussed by Grebreeyueus and Iisuka (2010) the achievement of structural economic change requires changes within the wider web of stakeholders—both vertical and horizontal—to transform activities from low-value added to higher value. Hence, a more systematic approach that integrates GVC analysis within a broader NIS becomes necessary.

This recognition entails that elements of organisation, mixed with markets, will differ across national and regional innovation systems. Public policy therefore intervenes in relation to the core and the wider setting of the national innovation system (Lundvall, 2012). This includes as a conscious effort to stimulate and supplement the

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39 Lundvall (2010).

40 As referred to by Khan and Blankenburg (2009) with regards to the management of learning rents.

spontaneous development of systems of innovation (Lundvall et al., 2006). Broadly speaking, this approach falls within the more directive, or developmental form of external governance described in this thesis.

It is recognised by Lundvall (2012) and implicitly by the GVC governance framework developed by Gereffi et al. (2005) that specific governance systems of inter-firm relationships influence learning opportunities in different ways. For example, when the pace and diffusion of innovation is controlled by a single firm for the entire network, as opposed to a situation for which knowledge is created out of mutual exchange of experiences (i.e. deliberate attempts to spur innovation with government support).<sup>41</sup>

The literature has not settled on how GVCs and innovation systems interact (Fu et al., 2011). Though it is recognised that different forms of GVC governance will affect the mechanisms of learning. For example, Pietrobelli and Rabotelli (2011) describe how as firms integrate with GVCs the relationship with innovation systems subsequently becomes non-linear, with each affecting each other. With specific reference to the Gereffi et al. (2005) framework they posit that a well-structured, efficient and strong innovation system may reduce the complexity of transactions and thus risk falling into a captive type of GVC governance.

#### **2.4.6 Innovation Systems meet Global Value Chains**

According to Pietrobelli and Rabotelli (2011) when the competencies of the actors in the value chain are complementary, learning is mutual and is based on intense face-to-face interactions. However, when innovation systems are “opened” to foreign sources of knowledge, the relationship between GVCs and innovation systems is non-linear. Learning mechanisms within both market based as well as hierarchical GVCs are assumed to include knowledge spillovers: imitation in the case of market based governance; the training and the turnover of managers and workers within more hierarchical structures.

The role of intermediate institutions, such as business associations are somewhat overlooked within the framework of Pietrobelli and Rabotelli (2011) in favour of

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<sup>41</sup> Davide and Silvia (2008).

more technical accreditation bodies, including those relating to metrology, standards, testing and quality (MSTQ). They posit that within more hierarchical governance structures, local R&D organisations are expected to benefit from interaction with lead firms (should these exist). Otherwise human technical skills are expected to increase with participation in this type of GVC. In relation to the transmission mechanisms of learning, MSTQ organisations are considered to matter in the case of more market based governance GVCs. In comparison, education, training and local systems with complementary knowledge matter most for other types of governance structure, including hierarchical with reference to the Gereffi et al. (2005) classification.

#### **2.4.7 Public Policy Considerations**

The role of the public sector in terms of serving as a channel for the introduction of technology from abroad is described in detail by Hwang and Choung (2014) with reference to the catch-up experience of Korea and Taiwan. The co-evolution of technological characteristics, firm-behaviour and public-private relationships is shown to affect their catch-up processes.

State action and inaction is discussed by Nielson et al. (2014) as creating the enabling conditions that shape whether and how firms, regions and nations are able to engage with global markets and their capacities to upgrade these engagements. They describe policy interventions including wage setting, tariffs, taxes, infrastructure provision, education, training and research in addition to spatial planning.

For late industrialisers, particularly the LDCs, the challenges of on the one hand, facilitating integration with GVCS through tax and other fiscal incentives, whilst on the other directing efforts to facilitate learning by doing processes in view of severe capacity constraints and major capability gaps are undoubtedly formidable. There are other challenges, however, in view of the re-framing of its role as an ‘enabler’ or ‘facilitator’ of business as opposed to the main arbiter of rules and regulations (Jessop 2006). These differences in approaches correspond to the distinction made between facilitative and directive external governance used in this thesis.

As discussed by Moran et al. (2008) globalisation is seen to necessitate an internalisation of the state of the preference for capital and an associated squeezing of

the “fiscal space” for public policy. With the mobility of capital being synonymous with globalisation, nation states must provide an investment climate conducive to profit maximisation; the mobility of capital is seen both directly and indirectly to exert strong downward pressures on public policy considerations; this includes in the form of regulations which limit profit maximisation.<sup>42</sup>

These trends in part relate to how traditional public policy considerations of a broad societal character or sectorial considerations are now seen as either irrelevant or non-commercial factors that have to be paid for separately (Self, 2000).<sup>43</sup> This literature therefore focuses on regulatory and competitiveness effects and raises concerns related to the race to the bottom in terms of taxation as well as wages.

As discussed by Altenburg (2006), the traditional neo-classical perspective assumes markets to be more cost-effective than internal supply mainly because of competition. The fact that many firms choose vertical integration despite the assumed superiority of market-based procurement is traditionally explained by opportunistic behaviour to achieve anticompetitive effects, and therefore regarded as detrimental from a public welfare perspective (Bain, 1959). However, the cost of administrative coordination within the hierarchical organisation of a firm may be substantial and tends to increase as firms grow and their internal organisation becomes more complex. There are therefore tensions between cost and capability considerations.

Yeung and Coe (2014) describe the causal drivers of global production networks in terms of their competitiveness dynamics (optimising cost-capability ratios, market imperatives and financial discipline) and risk environments; these independent variables are described as critical independent variables shaping the strategies adopted by actors in terms of reconfiguring their global production networks and affecting development outcomes in particular industries and countries.

With reference to contemporary globalisation processes, Yeung and Coe (2014) draw attention to how the ascendency of GVCs and constellation of firms competing and co-operating globally for a greater share of value creation and capture means that

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42 *Ibid.*

43 This process is also known as the internationalisation of the public sector (Ladi, 2005).

other aspects related to public policy considerations, including competition are heightened. Consideration of the strategic interaction between firms operating within oligopolistic market structures is one branch of new trade theory with most relevance to this thesis, described next.

## 2.5 New Trade Theory and Industrial Organisation

The main strands of new trade theory build on different traditions in industrial organisation (Neary, 2009). These include transport costs which generate both home-market effects on trade and propensity for agglomeration (Krugman, 1991). Whilst specific modelling techniques can be applied to overcome some issues of marketing structure, the strategic trade policy literature - one of the other major strands of new trade theory - instead draws attention to oligopoly and competition aspects.

Within this strand of the new trade literature, as discussed by Neary (2009) supporting a firm in its home market reduces its costs of producing for export; using a protected home market to allow domestic firms to move down their cost curves and subsequently compete successfully against established rivals in export markets. Hence, issues related to industrial and R&D policy remains germane in view of public policy considerations and in support of developmental objectives.

Although new trade theory and new growth theory may be considered as operating within two separate branches, in practice, the available evidence suggests that new trade theory literature has become more closely associated with new economic geography, compared to new growth theory, because of a focus on external economies of scale to the firm, which arise from the clustering of otherwise perfectly competitive firms. In comparison, consideration of internal economies of scale to the firm, have been played down possible in view of the implications for analysis of market structure. As described by Neary (2010) international trade under oligopoly is the “Cinderella” of our discipline; a poor relation of the two dominant paradigms: the theory of comparative advantage based on perfect competition, and the theory of product differentiation and increasing returns based on monopolistic competition.<sup>44</sup>

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<sup>44</sup> As discussed by Neary (2010) one major reason why models of trade under oligopoly have had less influence than they deserve was that they were not embedded in general equilibrium; as a result, they could not deal with the interactions between goods and factor markets which are central to the big issues in trade. Furthermore,

Trade under oligopoly is of most interest to this thesis in view of the ascendency of GVCs and movement towards more hierarchical forms of value chain governance (including quasi-hierarchical) and the subsequent implications for learning by doing as conventionally understood. More recent theoretical developments within new trade theory, however, do recognise increasingly networked, global firms and firm-level heterogeneity, described below.

### 2.5.1 New New Trade Theory

New New Trade Theory (NNTT) is distinguished from old New Trade Theory by its emphasis on the firm as opposed to the industry; it focuses more on internal economies of scale to the firm as opposed to external economies to the industry which may result from the clustering of firms (for example, as in new economic geography models). That is, it is more in line with models of monopolistic competition that incorporate heterogeneous firms<sup>45</sup> and the theory of the multinational enterprise.

Firm-level analyses have been are motivated by the need to better understand heterogeneity as well as address shortcomings with the role of oligopoly in international trade theory (Neary, 2009). This is because, it is simply unsatisfactory to ignore firms altogether, as in perfectly competitive models, or to view large firms as more productive clones of small ones, as in monopolistically competitive models (*Ibid*).

Antras (2003) and Antras and Helpman (2004) explore the implications of firm heterogeneity for the boundaries of the firm and strategies for outsourcing and insourcing of activities. Markusen and Venables (2000) develop a monopolistic competition model of trade in which the presence of trade costs changes the pattern of trade, creates incentives for factor mobility which may lead to an agglomeration of activity in a single country and may therefore lead to multinational firms. A focus on

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oligopoly models could prove useful in understanding how trade policy and other shocks can affect market structure itself, by encouraging cross-border mergers and acquisitions, the dominant mode of foreign direct investment.

45 See Deardoff's dictionary of International Economics [accessed 22 January 2010] (<http://www-personal.umich.edu/~alandear/glossary/>)

firm level heterogeneity begins to explore questions as to why some firms export but others don't, and why some firms are larger and more productive than others.<sup>46</sup>

Liberalisation induces the smallest or least productive firms to exit, as market shares are further allocated towards larger more productive exporters (Melitz 2003). Only a few large firms are really productive within a given industry, these are also the firms that export and have a higher probability of being foreign-owned.<sup>47</sup> Given their dominance in exporting, within new trade theory, it seems that large firms matter for more than just reciprocal dumping (Nearly, 2009). It is further noted that small-group strategic competition is at least as important as models of the size distribution of firms across an extended product range (*Ibid*). There are clear parallels between questions related to the organization of firms in a globalised economy with the GVC literature and its concern with the terms under which developing countries participate and access such networks.

Generally, firm-level studies continue to explore the existence or not of learning by doing effects; it is fair to say that the trade and growth literature has come full circle because of the results. The recent debate on trade and growth at the level of the firm not only posits that the most productive firms within an industry export, but also that such firms are likely to have been the most productive firms within an industry *before* exporting, i.e. exporters self-select into markets. This is in part due to the high sunk costs for firms to enter markets.<sup>48</sup> Moreover, some studies find that productivity typically increases to a greater extent before firms export, as opposed to after firms enter export markets (Clerides et al., 1998; Bernard and Jensen 2004; Greenaway and Kneller, 2007).

## 2.6 Concluding Remarks

Although estimates vary it is generally acknowledged that since the latest phase of globalization which began in the 1980s, the proportion of trade that takes place on an

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46 As summarised by Greenaway and Kneller (2007), Krugman (1979) builds on a Dixit-Stiglitz monopolistic model in which all firms export because each produces a unique variety wanted by those consumers who have a love of variety.

47 See Ottaviano and Mayer (2008).

48 Because of external economies of scale: established patterns of specialization may persist even though they run counter to comparative advantage (e.g. Swiss watch producers compared to Thai).

intra- rather than inter-firm basis has been increasing.<sup>49</sup> This has prompted questions related to the organizations of firms, their boundaries, and how this relates to contracts (Acemoglu et al., 2007), property rights (Antras, 2005) and ownership and control (Feenstra and Hanson, 2005).

With these developments in mind, the model developed by Young (1991) assumed imitation by the developing country partner (or the “South”). It did not explicitly address capital mobility and the role of multinationals, as more recent models of offshoring and outsourcing do.<sup>50</sup> The implications for learning by doing processes as conventionally understood, have not adequately been explored to date. An important research gap therefore relates to the identification of levels of learning by doing and the value chain governance structures which effectively secure and bind these outcomes.

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49 According to Neary (2009) with reference to Krugman (1979), one of the central results of New Trade Theory is that two types of trade coexist, with net or inter-industry trade driven by differences between countries in comparative advantage and intra-industry trade encouraged by similarities in country size [which may be proxied by GDP]. However, this distinction arguably overlooks the increased fragmentation of production and multinationalisation of firms which has occurred since the 1980s (and as recognized by Krugman 2009).

50 Grossman and Rossi-Hansberg (2006); Helpman et al. (2008).

### **3. Global Value Chains Literature**

Global trade increasingly involves spreading the production process across firms located in separate countries with each one undertaking what is better described as ‘a task’ in the overall process rather than the production of a discrete good (WTO–IDE, 2011). These changes have occurred as capital has become increasingly mobile under the accelerated pace of financial globalisation and resulted from the internationalisation of global production and fragmentation across countries.<sup>51</sup>

The more qualitative case-study literature of the 1990s was motivated by the need to better understand how firms and labourers located in developing countries engage with more recent processes of globalisation. In this section, we introduce some of the key concepts of this literature. The more recent mainstream assimilation of the literature and more quantitative approaches are then described. This Chapter concludes with some of the research gaps to be addressed by this thesis.

#### **3.1 The Case-Study Approach to GVC Analysis**

The GVC literature which emerged in the 1990s was motivated by the need to better understand how producers engage with the process of globalization and the implications for the development of productive capacity and capabilities. A number of value chain studies across sectors, including agriculture and light manufacturing, acknowledged and discussed changes in global production and methods of coordination and explored what this meant for firms, and labourers.<sup>52</sup>

The literature continues to develop, both conceptually (e.g. by recognizing global production networks) and empirically (e.g. by employing more robust research

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51 See Keane (2014a).

52 See Cramer, (1999); Daviron (2002); Dolan et al. (1999), Dolan and Humphreys, (2000); Gereffi, (1999); Kaplinsky and Kaplan, (1998); Navdi and Thoburn, (2004); Ponte, (2002).

methods). The building blocks generally remain the same; consisting of an understanding of the appropriation of rents within a given chain which indicate economic power, and the governance structures which help to secure them. It tends to take a more vertical approach towards tracing the relationships between producers and buyers.

In comparison the Global Production Network (GPN) literature takes more of a horizontal approach and relates the relationships between producers and buyers to more locally embedded structures (Henderson et al. 2002). Although Neilson et al. (2014) refers to GVC analysis and the GPN literature as one and the same, there are some differences. For example, only more recently has the GVC literature began to focus on the social embeddedness of production and nationality, as well as motivations, of investors.

### **3.1.1 Methodological Approach**

Kaplinsky and Morris (2001) stated quite clearly at the outset their intention in developing a value chain manual was to enable researchers to dip in and utilise what is relevant, where appropriate. It was not an attempt to restrict researchers within a methodological strait-jacket. However, in mapping out value chains, Kaplinsky and Morris (2001) note that all types of value chain analysis gain from the construction of a ‘tree’ of input-output relationships which includes most of the following general accounting identities:

- Gross output values.
- Net output values (this is, gross output, minus input costs).
- The physical flow of commodities along the chain.
- The flow of services, consultants and skills along the chain.
- Employment, where relevant distinguishing between permanent (on payroll) and temporary (off payroll) staff, gender, ethnicity.
- Destination of sales (to wholesalers or retailers), concentration of sales amongst major buyers, number of buyers.
- Imports and exports and to which region.

The inclusion of these variables has been taken forward to a lesser or greater extent by the GVC case-study literature. However, indicators related to the external governance

of the GVC, including trade and investment policy is an area that was and continues to be somewhat overlooked. Only internal GVC governance structures between firms are currently conceptualised within the GVC literature, described next.

### 3.2 Governance structures

In terms of governance, the initial distinction within the GCC and subsequently GVC literature was between industry specific and internal governance structures. The initial distinction made in terms of GVC governance structures was between industry-specific types – for example, whether or not structures are buyer or producer-driven (Gereffi and Korzeniewicz, 1994), with the ability to exert control over forward or backward linkages.

This concept was subsequently developed into a hierarchy of internal governance structures by Gereffi et al. (2005), with each structure distinguished by the degree of coordination between actors at stages of production, or value chain nodes, and a function of: the complexity of a transaction, the ability to codify aspects of it, and the capabilities of producers.<sup>53</sup> Table 1 summarises the key determinants of internal GVC governance, between firms.

**Table 1: Key Determinants of Global Value Chain Governance**

Governance structure	Complexity	Codification	Capabilities	Degree of Explicit Coordination
<b>Market</b>	Low	High	High	Low
<b>Modular</b>	High	High	High	
<b>Relational</b>	High	Low	High	
<b>Captive</b>	High	High	Low	
<b>Hierarchy</b>	High	Low	Low	High

<sup>53</sup> However, the literature is not wholly satisfactory on links between internal and external chain governance as argued by Keane (2012).

Source: Adapted from Gereffi et al. (2005)

### **3.2.1 Internal Value Chain Governance**

As the capabilities of producers change it is posited that so too will the internal governance structures that surround trade. For example, movement from a more hierarchical structure of governance towards a more relational type is posited as producers capabilities develop (if the complexity of transactions remains high, and codification, low). However, there are tensions apparent. That governance structures should change within the framework is posited, but as more recent case-studies have argued this trajectory is by no means automatic. The firm-level literature on spillovers from FDI also share this concern, given assumed knowledge spillovers without adequate attention to how these are actually achieved in practice.

Should a firm begin operations through the establishment of commercial presence (Mode 3 of service delivery under the General Agreement on Trade in Services, and auspices of the WTO), then movement of activities from one function to another could take place within the boundaries of one firm operating across borders and united by shares of foreign ownership and equity. Things become more problematic, however, in view of non-equity forms of coordination between firms which is alluded to in the notion of a quasi-hierarchical structure of governance. This term is defined in Box 5 with reference to Dolan et al., (1999), Humphrey and Schmitz (2001), and in view of the more recent findings by UNCTAD (2013a).

This type of value chain governance refers to how networks of firms, not necessarily bound by ownership, may interact to either facilitate or block particular upgrading trajectories by another firm, or group of firms. For example, Dolan et al. (1999) find that precisely because the overseas buyer operated through intermediaries there was scope for local firms to enter higher value-added stages in the commodity chain. Schmitz and Knorringa (2001:21) note that the loose chain in which buyers' source through intermediaries has more gaps that local producers can grow into: local upgrading into design and marketing is more likely.

## Box 5: Description of Governance Structures

**Market governance** is typical where transactions are relatively simple, information on product specifications is easily transmitted, and suppliers can make products with minimal input from buyers. Trade takes place through arms-length exchanges which require little or no formal cooperation, for example, carried out in auction houses or other spot markets, or other over-the-counter transactions. This has been the case in the past for many traditional African commodity exports such as coffee but more recently this type of trade appears closer to a more captive form of governance.

**Modular governance** occurs when complex transactions are relatively easy to codify. Suppliers in modular chains make products to a customer's specifications. Information technology and standards for exchanging information are both key to the functioning of modular governance, which means greater control over transactions relative to the market-based governance.

**Relational governance** occurs when buyers and sellers rely on complex information that is not easily transmitted or learned. This results in frequent interactions and knowledge sharing between parties. Lead firms specify what is needed, and exert some level of control over suppliers but relational linkages take time to build, so the costs and difficulties required to switch to a new partner tend to be high. This type of governance is associated with contract manufacturing, but offshore contractors in this case source inputs. Firms co-operate in a close and even relationship.

**Captive governance** is a feature of chains where small suppliers are dependent on one or a few buyers that often wield a great deal of power. Such networks feature a high degree of monitoring and control by the lead firm. The power asymmetry in captive networks forces suppliers to link to their buyer under conditions set by, and often specific to, that particular buyer. Some cases of contract farming or types of commodity trade can exhibit this type of governance, given low supplier competence and complex transactions.

**Hierarchical governance** usually occurs when product specifications cannot be codified, products are complex, or highly competent suppliers cannot be found. This type of governance is typically associated with industries where all stages of production are carried out 'in house' as production is offshored rather than outsourced. The lead firm takes direct ownership of operations in the chain; these value chains represent the fully internalised operations of vertically integrated firms.

**Quasi-hierarchical governance** whereby one firm exercises a high degree of control over other firms, frequently specifying the characteristics of the product to be produced, and sometimes specifying the processes to be followed and the control mechanisms to be enforced. This level of control can arise not only from the lead firm's role in defining the product, but also from the buyer's perceived risk of losses from the suppliers' performance failures. In other words, there are some doubts about the competence of the supplier. This is the typical form of governance in a buyer-driven value chain. The lead firm in the chain may exercise control not only over its direct suppliers but also further along the chain.

Source: Adapted from Gereffi et al. (2005) and Humphrey and Schmitz (2001).

It is important to note that the classification of governance by Gereffi et al. (2005) refers only to the coordination of activities between firms, whereas in the earlier literature the interplay between local inter-firm networks, business associations and public-private institutions was recognised (Humphrey and Schmitz, 2001). For example, as discussed by Humphrey and Schmitz (2001) whilst the cluster literature

focused on firm proximity, the literature on innovation systems was more concerned with the role of the knowledge system with reference to the business school of thought on GVCs (e.g. Porter, 1985). The role of these aspects in assisting for example, in the codification of activities is downplayed within the Gereffi et al. (2005) classification because the focus is on global rather than local linkages.

Upgrading results from interaction with buyers and learning by exporting, though the exact mechanisms are not detailed and hence a certain degree of automaticity is assumed. This limitation is recognised by Humphrey and Schmitz (2001) who criticise the characterisation of upgrading in the form of “benign escalator”: an understanding of both local as well as global governance and their interaction can assist in understanding actual upgrading processes.<sup>54</sup>

The governance typology of Gereffi et al. (2005) was developed on the basis of a set of country case-studies, which includes horticulture and textiles and clothing: sectors analysed in this thesis. Since that time, there has been limited empirical scrutiny of these types of governance within the literature. Despite this, the framework has been taken forward extensively within the GVC literature. There remain conceptual challenges regarding the interplay between internal GVC governance as defined by Gereffi et al., (2005) and external governance structures, including relating to public policy considerations.

### 3.2.2 External Governance

The GVC approach considers trade to be embedded in, but also to a considerable extent determined by, specific (but changing) institutional structures and organisational aspects of international trade (Raikes et al., 2000). However, external GVC governance structures usually remain outside of the modelling sphere of ‘which GVC takes what shape and why’ (Keane, 2012).<sup>55</sup> For example, the governance structures posited by Gereffi et al. (2005) do not include reference to external structures, including the institutional framework negotiated by governments for private actors, but rather focus on the internal structures between firms and private actors.

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54 The knowledge required for upgrading flows down through the chain, and customers are the most important source of knowledge about processes and markets.

55 These include other external governance structures such as mandatory standards that producers must legally adhere to in order to access markets.

This is an important omission. Strengthening the bargaining position of producers relative to powerful new actors operating within GVCs may require more directive as opposed to facilitative interventions. That is, interventions cannot be solely limited to correcting market failures but may be required in terms of creating markets through facilitating entry and bolstering the position of domestic producers within certain types of GVCs. The relative position of producers in view of barriers to entry may be linked to specific types of rent.<sup>56</sup> Only some of these types of rents may be directly under the control of governments.<sup>57</sup>

It is acknowledged by Ponte and Sturgeon (2014) that domestic regulation and public sector support need to be incorporated in a comprehensive framework linking GVC governance, institutional frameworks, and upgrading. And that so far, GVC analysis has focused mainly on governance mechanisms internal to the value chain, treating the institutional framework (including state regulation) as “background” (*Ibid*). Research questions remain, including how overall GVC governance is shaped by broader institutional, regulatory and societal processes.

According to Neilson et al. (2014) if the pattern of GVC governance in an industry does not fit the theory, then an alternative force, such as a strong institutional mechanism or extremely concentrated industry structure, is likely to be at work; in this way, GVC governance theory can provide researchers with a relatively simple set of baseline research questions. In this regard, Ponte and Sturgeon (2014) emphasise caution regarding the classification of macro types of GVC governance; instead, they advocate for more bottom up approaches beginning at the micro level, analysing linkages between firms.

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56 Four main families of rent are identified by Kaplinksy (2005). The first includes the ability to shape market relations and exclude competitors; the second, category is resource rent (as recognized by Classical economists); the third and fourth include endogenous and exogenous rents related to augmenting production processes, organisational systems and product and service design and delivery. Exogenous rents are created largely by actors who are not directly productive participants in the value chain, and often result from activities initiated by or under the control of governments.

57 Economic rents such as Schumpeterian (innovation) and non-economic rents, such as rents for learning are each “closely related...each with something to do with information and institutions” (Khan 2000:25)

Despite these recent admissions, many authors have documented transitions from more market-based structures of GVC governance to more hierarchical types (e.g. Ponte, 2002). Others have demonstrated through case-study analysis how some types of upgrading processes may become more challenging within the context of hierarchical governance structures (Kamau, 2009; Navas-Alemán, 2011). However, the causal link between the effective management of foreign investment within hierarchical GVCs and development of producer capabilities so as to enable a transition towards a more relational type remains rather under-explored within the literature.

The more recent additions to the case-study GVC literature now draw particular attention to the concept of social embeddedness and why firm ownership matters (Kaplinsky and Wamae, 2010; Staritz and Morris, 2013; Morris et al., 2014). This perspective on the motivations of investors, embeddedness, end markets and influence on upgrading trajectories is also shared by Goto et al. (2009, 2011).

Generally, the emerging literature on the motivations of investors relate these to potential upgrading trajectories, either at the node of production, or across. For example, depending on the relationship developed with investors and lead firms, there may be greater learning opportunities and possibilities of technology transfer. However, this depends on the extent to which investors' motivations have progressed from merely efficiency or resource-seeking to relationship building.

Farole and Winkler (2014) discuss some of the mediating factors that shape the nature and extent of spillovers. These include: the spillover potential of foreign investors (particularly in the context of investments within GVCs); the absorptive capacity of local agents (firms and workers); and the way these two factors interact within a specific host country institutional environment. These aspects accord with our concern of the lack of attention paid to the institutional structure within GVC analysis, and influence of external governance on internal structures and relations between firms.

In this regard, a link must be made to the presence or absence of elements of a NIS<sup>58</sup> as a mediating factor in terms of facilitating knowledge spillovers. These may be broadly defined in terms of a set of institutions which facilitate technological chance and help to diffuse innovations. This system essentially serves as an interface between internal and external value chain governance. It facilitates interactions between private and public agents, as to enable certain types of upgrading processes - related to the achievement of broader societal learning by doing processes.

### 3.3 Upgrading Processes in GVCs

A key feature of the GVC literature is how the relative position of firms and the governance structures within which they trade conditions potential upgrading options (Humphrey and Schmitz, 2001; Humphrey and Schmitz, 2004).<sup>59</sup> The historical antecedent of the upgrading typology, which is so widely referred to in the value chain literature, is based on the experience of the first-tier East Asian NICs. This is because, broadly speaking, their lead firms managed to move up the value chain, across the intensive margin<sup>60</sup> and finally, across sectors by bringing new goods to market, drawing on domestic capabilities in research and design in order to do so.

The upgrading process currently so widely referred to in the GVC literature posits a trajectory beginning with product and process upgrading and then onto functional and inter-sectoral upgrading (Gereffi, 1999; Lee and Chen, 2000; Kaplinsky and Morris, 2001; Humphrey and Schmitz 2001, 2004). The upgrading trajectory is therefore largely based on the more qualitative analysis of the process by which structural and industrial transformation was achieved by first-tier NICs within a short period of time

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58 As discussed by Watkins et al. (2014), the gradual inclusion of developing countries within the NIS discussion has coincided with several interrelated shifts in the NIS literature occurring over the past three decades: (1) a move away from macro institutional explanations to a focus on specific system processes, (2) a more recent emphasis on the role of intermediary and non-governmental actors in this regard, and (3) the increasing internationalisation of the NIS concept.

59 Parameter setting may also be reflected at the country, bilateral and multilateral level. Trade policy rents created at the multilateral level may be either to exclude or include certain producers. For example, Stevens (2001) argues that trade analysis suggests that past European Union (EU) trade policy has effectively excluded many of the most important global suppliers from the UK market (2001: 46).

60 The intensive margin of trade refers to the growth of exports in products that are already being exported: 'old products'. The extensive margin is defined as the growth of exports in new categories: 'new products' (Amurgo-Pacheco and Pierola, 2008).

(by historical standards) and which has been described in detail by in-depth individual country case study analysis.<sup>61</sup>

However, although the trajectory followed - from Original Equipment Assembling (OEA) to Own Brand Manufacturing (OBM) - was possible at that time, in that region, within particular value chains, accessing specific markets, major questions remain regarding the extent to which it may be replicable. The external trade environment has changed for late entrants compared to the East Asian NICs. Non-reciprocal trade relations between, for example, the EU and ACP countries, have ended. Similarly, quantitative restrictions on specific product lines, such as textiles and clothing, have been removed as WTO members have agreed to facilitate the entry of countries like China within the global trading system.

As a result of the tight control of particular functions by lead firms, some types of upgrading may simply no longer be feasible. The creation of tiers of suppliers and intermediaries may create added layers of barriers to entry. Because of this realisation there are increased efforts to untangle just exactly what it means to upgrade within GVCs. This is because whilst the GVC literature provides some clear hypotheses, the empirical evidence to either support or reject them remains weak. Therefore attempts have been made to assign quantitative indicators to the qualitative GVC upgrading typology so widely referred to in the literature:<sup>62</sup>

- *Product upgrading*: improving quality.
- *Process upgrading*: performing certain tasks better and increasing efficiency.
- *Functional upgrading*: acquiring skills that enable movement towards another node or higher value added level or function within the value chain.
- *Inter-sectoral upgrading*: using skills acquired to move into another sector, e.g. from textiles and clothing into footwear production.

For example, Bernhardt and Milberg (2011) distinguish between economic and social upgrading. Within the framework they develop, economic and social upgrading are defined as follows:

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61 See Amsden (1985; 1989), Wade (1990), Chu and Tsai (1997), Kim (1993), Kim and Nelson (2000).

62 See Kaplinsky and Morris (2001); Humphrey and Schmitz (2004).

- **Economic upgrading:** trade performance, as indicated by export unit values and market shares.
- **Social upgrading:** employment and wage growth.

The economic upgrading indicators are essentially adapted from Kaplinsky and Santos-Paulino (2005). The analytical approach is essentially limited to linking economic and social upgrading to a particular node of production as opposed to viewing the movement of labour (and investors) across and into new functions. Although the results from Bernhardt and Milberg (2011) are insightful, the ability to monitor these processes over time remains challenging: movement from one functional position can only be known through detailed case-study analysis; the identification of this upgrading strategy is excluded from their framework. Finally, they fail to consider skills development within their framework. This process itself may be necessary to sustain social upgrading overtime as well as promote knowledge spillovers across sectors.

### 3.3.1 Multi-Chain Upgrading<sup>63</sup>

There is an emerging literature on “multi-chain” upgrading. This relates to the greater learning opportunities available to firms serving multiple markets. In particular, domestic firms may have more opportunities to launch their own manufactured and branded products in domestic or neighbouring markets, with similar levels of development. This literature draws on the experience of producers in the textiles and clothing industry in Kenya (Kamau, 2009), and furniture and footwear industry in Brazil (Navas-Alemán, 2011).

Participation in multiple value chains provides the possibility of “leveraging competencies”: different value chains create different possibilities for learning, and what is learned in one value chain can be applied in others (Lee and Chen, 2000). A focus on domestic markets leads manufacturing firms to broaden the scope of their activities (i.e. functional upgrading) into design, marketing, and branding. This may be because they have a better understanding of home markets than foreign markets, or

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<sup>63</sup> This section is adapted from Keane (2014b).

it may be because domestic customers are not as powerful or concentrated as their counterparts in global value chains (Brandt and Thun, 2010).

Morris et al. (2011) note that within GVCs, lead firms often fail to back-up their commitment to broadening and deepening linkages with appropriate institutional structures.<sup>64</sup> Humphrey and Schmitz (2001) describe how both new economic geography (new trade theory) and innovation studies (new growth theory) emphasise local linkages, the importance of which is heightened in view of potential lack of support on the part of global buyers. This is because, the only enduring basis for competitive advantage is localised and based on tacit knowledge (*Ibid*). They emphasise the importance of bringing both aspects - local linkages and global linkages - particularly in view of export-orientated clusters inserted into GVC analyses.

The role of the domestic market in terms of enabling the shift from ISI to EOI strategy is implicitly referred to by Nelson and Pack (1999). Since movement from the craft to modern sector is a form of functional upgrading - depending on how the transition is made and the role of domestic entrepreneurs – the comparative GVC studies presented in this thesis, make more explicit the role of the domestic market.

### **3.4 The Mainstream Assimilation of the GVC literature<sup>65</sup>**

Since the global financial crisis (GFC) broader interest in the GVC literature has been spurred. Policy makers charged international agencies with better understanding the nature of integration with in view of the unprecedented and synchronised global trade shock which occurred at that time and revealed the deeply integrated nature of contemporary trade and financial flows. Whereas in the past interest in the subject area was limited to development economists, mainstream economist have now assimilated the GVC approach and qualitative methodology into their toolkit and added new quantitative dimensions to analysis.

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<sup>64</sup> They also refer to a major misalignment between governments stated objectives on linkage development and the institutions and structures which are available to promote linkage development.

<sup>65</sup> This section is adapted from Keane (2014b).

The construction of input:output tables, which hark back to Leontif (1953), means governments are gaining a better understanding of the role of intermediate goods within gross trade flows. As lead firms have internationalised, latest estimates suggest that around 80% of all trade takes place within the international production networks of TNCs, around one-third of which is intra-firm trade – the type of trade which occurs within the ownership structure of a single firm (UNCTAD, 2013a). Intermediate goods trade now accounts for 60 percent of global trade (*Ibid*).<sup>66</sup>

As trade has become increasingly concentrated amongst a few lead firms, regional hubs of production networks have emerged. Latest estimates suggest that around 85 percent of trade in value added – or intermediate goods trade – takes place in and around three hubs of the three regional blocks of East Asia, Europe and North America (AfDB et al., 2014: 127; Baldwin, 2012). Table 2 presents the results of most recent estimates based on new input:output tables which essentially use net exports as an indicator of GVC participation.<sup>67</sup>

**Table 2: Share of Trade in Value Added by Region, 1995 and 2011 (%)**

Region	1995	2011
Europe	57.5	50.9
East Asia	14.4	16.2
North America	13.1	11.8
Southeast Asia	6.0	6.8
Latin America	3.2	4.2
Middle East	2.0	3.0
Africa	1.4	2.2
Russia and Central Asia	0.9	2.0
South Asia	0.7	1.7
Oceania	0.9	1.3

Source: AfDB et al. (2014), calculated based on UNCTAD-EORA GVC database.

Clearly, SSA's level of participation in this new wave of trade is worryingly low. Moreover, the share of African suppliers in the continent's imports has been declining compared to imports sourced from outside Africa; these flows have grown twice as fast as exports (AfDB et al., 2014: 74). These results suggest particular changes for African producers in entering into GVCs and upgrading within them.

66 Whilst developing countries accounted for only 34 percent of world merchandise exports in 1980 by 2011 their share had risen to 47 percent, or nearly half of the total (WTO, 2013).

67 These estimates are approximated by the sum of (i) the value of imported inputs in the overall exports of a country and (ii) the percentage of exported goods and services used as imported inputs to produce other countries' exports. The shares added describe the participation of a country in GVCs, both as a user of foreign inputs and as a supplier of intermediate goods and services used in other countries' exports.

A number of explanatory factors have been put forth to explain the emergence of global hubs of production. The cost considerations that underpin the fragmentation process of production have been analysed by trade economists. For example, Baldwin and Venables (2013) explore the technological characteristics of products in conjunction with considerations of economic geography. They emphasise the presence of centripetal forces that bind some activities together – a process that differs across products, and depends on the co-location of certain activities.

A distinction is made between ‘snakes’ production processes compared to ‘spiders’ processes. In the snake production process a physical entity follows a linear process with value added at each stage, e.g. cotton production to yarn to fabric to t-shirts manufacture. On the other hand, in the case of ‘spiders’, the production process may be many limbed. This is where parts from different sources come together in one place for assembly; this may not be the final destination, as any part of a spider might be attached to any part of a snake (e.g. buttons).

Tensions between the comparative costs that create the incentive to unbundle compared to the co-location or agglomeration forces that may bind some parts of a process together are recognised by Baldwin and Venables (2013). The fragmentation of stages of production are therefore determined by opposing forces of international cost differences and the benefits of co-location of related stages; the end result depends on the technological relationships between stages of production. This explanation however, somewhat downplays consideration of capabilities.

Given recent trends on the proportion of trade controlled by TNCs one could assume that increasingly complex and technologically sophisticated products are being produced in fragmented chains, but that control by lead firms remains high either because domestic capabilities in recipient countries remain low, or because the benefits of co-location and agglomeration forces remain weak relative to costs (since governing value chains costs lead firms). Both of these aspects - cost differences and benefits of co-location – could therefore assist in explaining Africa’s current participation in GVCs characterised by intermediate goods trade. They don’t explain,

though, how and why other LDCs in Asia have achieved limited upgrading within GVCs.

Within the mainstream incorporation of the GVC literature, the link to trade policy considerations tends to be rather prescriptive, e.g. simply corresponding to the need to import before exporting, or describing how the penalties for infant industry protection are higher now than in the past. Although it is acknowledged that African participation in GVCs is limited to lower value activities within GVCs, no particularly innovative policies are identified to overcome this. In fact, GVCs are being redefined in terms of whether firms import intermediate goods before they export.<sup>68</sup> The summation of forward and backward linkages equates to GVC participation within these approaches.<sup>69</sup>

It has been known for some time that trade data based on gross flows are increasingly inadequate as the basis for understanding modern trade because the value of a final good now comes from many countries (Grossman, 2010). Policy-makers need to better understand where production is taking place and how value is being added; in view of more integrated production networks this can only be known through understanding the proportion of subcontracting components made elsewhere. As argued by Grossman (2010), and as national accountants have known for a considerable time, economic activity is best measured by value added, rather than gross output.

The introduction of publicly available international input:output (IIO) tables, and identification of value-added shares (foreign and domestic) describe the participation of a country, both as a user of foreign inputs and as a supplier of intermediate goods and services used in other countries' exports. Although these exercises may be useful in terms of accounting methodologies, they do make a substantial break with the previous interest in shares of value added and distribution across actors within a given value chain. The objective of these new databases has to be understood within the context of policy makers globally grappling to understand the depth of the fragmentation process which has occurred to date. The remain some major conceptual

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68 Gasiorek and Lopez-Gonzalez (2013).

69 For example commodity exporters such as Guyana score highly in terms of GVC participation although it remains highly commodity dependent on gold exports.

challenges however, including in relation to the use of terminology such as forward and backward linkages but also in relation to the notions of domestic and foreign value added.

### **3.4.1 Measuring Value Added**

There are longstanding concerns related to growth in developing countries shares in world manufactured exports, which have not been matched with commensurate increases in the income earned from such activities (UNCTAD, 2002). It is now recognised that the available value addition share at particular nodes within a given GVC has decreased, particularly for light manufacturing. Obviously this recognition has important implications for late industrialisers.

Baldwin (2012a) makes reference to a deepening smile curve, a process ongoing since the 1970s, with the more valuable stages of a products lifecycle residing within the design and marketing functions compared to the production stage itself. This reduction in value added results from the notion of a trade in task, as opposed to a final good: whereby inputs are sourced by lead firms and low cost labour-abundant developing countries provide labour processing facilities.

It remains challenging to obtain precise data on the share of value which accrues to different actors within a given value chain. The case-study literature of the 1990s which sought to highlight the asymmetric nature of trading relations and shares of value which accrue to actors provided some insights. However, there are other important methodological concerns to bear in mind. As discussed by Keane (2008)<sup>70</sup> accounting for the very notion of capital is problematic, in addition to that of productivity and technological change, with TFP being described as the measure of our ignorance.

There are more recent complications. Financialisation, the most recent and salient feature of globalisation we witness today (Fine, 2009), has been linked to the globalisation of production. Milberg and Winkler (2009) argue that the cost reductions which have resulted from the globalisation of production and fragmentation of global trade have supported the financialisation of the non-financial

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<sup>70</sup> With regards to a brief comparison of input:output value calculation approaches at the firm-level compared to the GVC case-study value distribution approaches.

corporate sector. This is because the increased profits obtained through the globalisation of production have been used for the purchase of financial assets, which has in turn raised shareholder returns. This is as opposed to investment in innovation activities.

The global fragmentation of production and increasingly coordinated trade has been an integral part of the financialisation process which is so characteristic of the contemporary phase of globalisation. However, the ascendency of the GVC literature and its mainstream incorporation has been accompanied by a narrow focus on trade in value added, with a complete absence of any discussion on value addition processes at the firm-level. Trade statistics alone contain very partial information about the location of value added, and no information about ownership of productive assets and output, where profits are reaped, or how these increasingly complex systems are coordinated (Sturgeon and Gereffi, 2009).

This absence of discussion is all the more surprising in view of the new estimates on the degree of intra-firm trade. The new wave of literature is therefore both conceptually problematic as well as misleading in terms of resultant policy implications. The current situation is one in which there are lots of new data sets but very little information on the lead firms driving these trends, which can only be known through more qualitative analysis.<sup>71</sup>

Baldwin (2012b) elaborates further regarding the transition of the global economy and the internationalisation process of firms and the trade policy architecture and makes reference to the fundamental asymmetry at play in view of head quarter (HQ) economies compared to factory economies and how this affects trade policy negotiations (and hence explains some of the hiatus in international trade policy negotiations). Whereas in the past the political economy of the General Agreement on Trade and Tariffs (GATT) centred around a prisoners dilemma tariff setting game: in order to shift from high tariffs towards low tariffs, all parties had to act in concert and be punished for non-compliance. Nowadays, he posits so long as lead firm's

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71 As attempted by UNCTD (2013a).

investments are protected through strict regulation to secure profit maximisation then supply-chain led industrialisation may take place within host countries.

If not, and the regulatory environment is too lax, lead firms may seek to enter into a race to the bottom and subsequently shift to another more profitable location. These points concur with the notion of external governance used in this thesis, related to the effective management of trade and investment and process of GVC integration.

### **3.4.2 Concluding Remarks**

Some of the few GVC studies that integrate firm-level analyses and make reference to the effect of governance structures on firm-level productivity include Pietrobelli and Saliola (2008). These authors engage with the issue of causality and the learning-by-exporting hypothesis; they find that the governance of value chains affects the productivity of suppliers in domestic value chains to a greater extent than those firms supplying MNEs or exporters. They note that this result may be explained by the different nature of information and knowledge being exchanged, and by the larger gaps in knowledge and capabilities between the domestic leader and its suppliers.<sup>72</sup>

Given that these findings are related to the presence of wholly foreign-owned firms operating within the domestic economy, it is surprising that the role of external governance, government policy and management of FDI receives less attention within the GVC literature. Use of the GVC methodology to analyse processes of ‘upgrading’ is severely limited by a rather eclectic approach to analysis that is far from standardised; analysis of inputs and outputs tends to be weak at both the macro and the micro level.<sup>73</sup> The concept of upgrading is not well defined either in terms of inputs or outputs, as related to technological development.

There have been increasing efforts to explore and assign indicators to the upgrading process, but very few studies adopt a mixed methodological approach and integrate

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72 As found by Pietrobelli and Saliola (2008), firms that service the domestic, rather than export market, can also benefit considerably from engagement with lead firms operating within GVCs.

73 This is despite input:output analysis being central to the Leontif paradox (1953). As Wood (2001:2) points out: “It seems helpful to place value chains more narrowly conceived in the context of a complete (albeit hypothetical) accounting decomposition of the value of all products among sectors and countries, precisely because it obliges attention to be given to the definition and scope of value chains...it leads us to ask how much governance and of what sort (e.g. must it cross national boundaries?) is required for part or all of an accounting chain to be classified as a value chain...And it leads us naturally to ask how large a share of world production is now (or in the future is likely to be) within value chains.”

firm-level information into their analyses. The research methodology described in the next Chapter seeks to address this important research gap.

## **4. Methodology**

### **4.1 Introduction**

A mixed-methodological approach is adopted not only because of ontological stance, but also because of pragmatism (rather than dogmatism). Structured case-study analysis is used and different sources of qualitative and quantitative information triangulated in order to answer the research questions. This is because, the research objective is to not to infer findings from a sample to a population, but to engender pattern and linkages of theoretical importance (Bryman, 1989). Organising concepts and the translation of somewhat ambiguous terms into indicators for analysis are introduced. Finally, methodological considerations, including some of the benefits but also challenges and limitations of reliance on secondary data are described.

### **4.2 Research Methodology**

There is a strong case to be made for the use of mixed-methods for economics research, though methods are still developing in form and substance (Creswell, 2003). The critical realist position understands that knowledge can never be complete and

that reality is structured. Hence, the use of mixed methods becomes necessary. The triangulation of results derived from different means can be effectively deployed in order to address a specific research question, and subsequently increase the reliability and validity of results.

Although the mixed-method approach reduces the biases that relying on a single method may entrain, it is not meant to compensate for this or merely provide complementarity.<sup>74</sup> Rather, it acknowledges that alternative methods can reveal different aspects of research, and that the total sum may be greater than that of its constituent parts. Being driven by pragmatism, the research questions formulated are answered using the methods best suited to the needs of research, at each sequential stage of research. This means different concepts are explored using alternative methods and these have been refined during the research process. In turn, the results from one method have informed the other method(s).<sup>75</sup>

As discussed by Johnson and Onwuegbuzie (2004) a key feature of mixed methods research is its methodological pluralism or eclecticism, which frequently results in superior research compared to mono-method research. Epistemological differences should not prevent us from using methods typically associated with quantitative and qualitative researchers. Induction is therefore used in order to reveal patterns amongst the country case-studies and deduction in order to test hypotheses derived from theory and case-study and data analysis. Finally, abduction is used to identify the best available explanation for results. In order to define somewhat ambiguous concepts the approach has also been reductionist.

### **4.3 Organising Concepts and Indicators**

Within Nelson and Pack (1999) a number of terms remain ambiguous and need to be defined. There are different ways in which learning by doing can be measured, across different levels. We refer to external governance as encompassing the broader institutional framework within which value chains function, which influences and

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74 Kaltenbrunner (2013) provides an excellent discussion on why this is the case.

75 This is one of the key features of mixed-methodology (Greene et al., 1989).

interacts with the internal structures between firms. Those aspects most relevant to inducing and sustaining the process of learning by doing are identified.

### ***GVC Governance Structures***

The Gereffi et al. (2005) governance typology is used as an organising framework in order to identify aspects of internal governance. However, because the GVC approach historically, has tended to take a very different approach to the question of upgrading, emphasising cross-border linkages between firms in global production and distribution systems rather than local linkages (Humphrey and Schmitz, 2001; Gereffi and Korzeniewicz, 1994; Gereffi and Kaplinsky, 2001), each case-study begins with a description of how the process of GVC integration was undertaken. Hence, the role of external governance and other public policy considerations are discussed first for each case-study. This includes the promotion of joint learning between foreign and domestic firms so as to address capability gaps and the mechanisms to incentivise such processes, including leveraging trade and investment policy to this effect.

We then proceed to explore the influence of these structures on the internal governance structures between firms and subsequently learning by doing processes. Within this discussion, the upgrading typology associated with the GVC literature is referred to and integrated within the conceptual framework. The following distinctions are made between external and internal chain governance:

**External Chain Governance:** Based on a review of past and present trade, finance and investment policies, in addition to relevant aspects of industrial policy, we identify elements of an NIS and classify the role of the state as being either facilitative or directive. Facilitative approaches include those policies which promote entrepreneurship but which do not direct these activities towards the achievement of specific development objectives (with directive approaches being the opposite).

**Internal Chain Governance:** Based on analysis of firm-level organisation and relations with buyers in end markets we identify the corresponding internal GVC governance typology, to the extent possible, with reference to the Gereffi et al. (2005) framework and other classifications used in the literature (e.g. Humphrey and Schmitz, 2001). The “initial seeding” process and engagement with the modern export

sector is not clearly defined by Nelson and Pack (1999) in terms of whether or not it includes foreign capital. The origins of entrepreneurs are not defined. We therefore use firm ownership structures in order to define the origin of ‘entrepreneurs’ and identify the type of value chain governance in operation.

### ***Levels of Learning by Doing***

The process of learning by doing in the Nelson and Pack (1999) model begins at the firm level, with knowledge spillovers subsequently occurring at a sectoral level (between the craft and modern sector) and finally, operating at the societal level, in view of human capital increasing in response to demand. Table 3 summarises the empirical evidence we require in order to accept or reject the presence of learning by doing. Because of the challenges of measuring tacit forms of knowledge accumulated and the translation into more explicit forms, the identification of elements of a NIS are described and qualitatively assessed.

**Table 3: Identifying Learning by Doing**

	<b>Recognising LBD</b>	<b>Empirical Evidence</b>
<b>Firm-level:</b> Accumulated knowledge and experience; assimilation of technologies	<p>Domestic firm age ~ indicator of accumulated knowledge and experience We expect older firms to be larger and more productive; undertake higher value added activities</p> <p>Firm productivity ~ as an indicator of human capital and technology accumulation and assimilation</p> <p>Firm capital, labour and output ratios</p>	Quantitative indicators available from firm-level surveys
<b>Sectoral:</b> Movement towards higher value (and skilled) activities	<p>Product upgrading: increasing unit values and obtaining market share</p> <p>Process upgrading: improving the efficiency of production and reducing unit costs</p> <p>Increasing employees on-the-job skills, years of education and vocational training</p> <p>Employees years of experience, movement of labourers towards higher skilled positions and remuneration</p> <p>Functional upgrading: Movement into a higher value-added activity, including sales</p>	<p>Trade data analysis</p> <p>Firm-level; sectoral-level employee information</p> <p>Case-study and qualitative analysis</p> <p>Observation of changed functions obtained within the value chain</p>
<b>Societal:</b> Tacit knowledge made explicit	<p>Degree of social embeddedness of firms and interface with national innovation systems</p> <p>Role of intermediate institutions in obtaining and tacit information regarding production and marketing</p> <p>Process of institutionalising tacit knowledge obtained</p>	<p>Qualitative assessment of elements of NIS present</p> <p>Analysis of role of intermediate institutions</p> <p>Interface with formal institutions</p>

The identification of elements of a NIS helps to bridge micro and macro levels and the process of translating tacit information into explicit forms, so as to enable broader societal learning by doing processes. The translation of tacit knowledge elements into explicit forms includes through formal education processes and the provision of vocational training. Finally, issues related to competition policy, taxation and human resources policy are described in view of overcoming technological and capability gaps. These aspects of public policy in turn are related to consideration of both the inducing and sustaining learning by doing processes, through sectoral and societal spillovers.

#### **4.3.1 External and Internal Value Chain Governance**

Some of the rivalrous elements of knowledge implicitly incorporated within the GVC governance framework developed by Gereffi et al. (2005) are made more explicit. For example, within the Gereffi et al. (2005) framework it is posited that lead firms exert control including through direct ownership either as a result of low producer capabilities and/or because of complex transactions. As capabilities increase or the complexity of transactions reduces, internal governance structures between firms are posited to change.

We interrogate the causal chain of relations described within the Gereffi et al. (2005) framework. In view of the starting point of this thesis being the rivalrous nature of knowledge spillovers, a change in value chain governance may be a necessary requirement of the achievement of learning by doing as currently conceptualised within new trade/new growth theory. In order to overcome capability gaps, in view of the rivalrous nature of knowledge spillovers, value chain governance structures may need to be influenced so as to incentivise certain spillovers. Each case-study therefore begins with an overview of external governance structures, the internal governance between firms before proceeding to identify learning by doing and upgrading processes, using the indicators in Table 3.

#### **4.3.2 Learning by Doing at the Firm-Level**

Although the GVC literature provides a number of hypotheses related to GVC governance and upgrading processes, these aren't taken as given. Instead, the empirical evidence which either accepts or rejects them is reviewed. For example, if

foreign ownership is associated with exporting to a particular marketing channel, this may be suggestive of a hierarchical structure of governance. This is because the ownership structure of firms determines how supplier firms are linked to international production and distribution networks (Natsuda et al., 2009).

Movement from a hierarchical structure towards a more relational type of governance is posited, if producers' capabilities develop (Gereffi et al., 2005). This process changes value chain governance. However, the causality is not clear: if governance structures change because of capabilities developing, or if a change in governance is required to develop capabilities. For example, major capability gaps for suppliers are posited within the hierarchical structure of governance described by Gereffi et al. (2005).

The age of a firm is often used in the literature as a proxy for accumulated knowledge and experience. However, the use of this variable within the firm-level literature assumes automaticity of knowledge spillovers. Moreover, it only captures more tacit forms of knowledge. Hence, the use of this variable as a proxy for accumulated knowledge and experience must be analysed alongside other variables.<sup>76</sup>

The GVC governance framework suggests new entrants may join high value GVCs through direct ownership, which may be proxied by shares of FDI, because of low producer capabilities. This immediately suggests the need to distinguish firms by their ownership structure, number of years in operation and firm-level capabilities. Others argue that reputation effects may matter more than firm age. These effects may emanate not only through firm-ownership structures but also through staff turnover, given the important role of highly skilled and mobile managers. We discuss these aspects in detail in the cut-flower case-studies. In these cases we are able to analyse the most detailed firm-level analysis; in the case of Kenya, we supplement this with

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76 For example, Derinyangala and Semboja (1999) test for the influence of firm characteristics on a production-based technology index calculated using the following indicators: size, foreign equity, age, entrepreneurs' education level and a skill index.

the qualitative information obtained during field work (overall, the most complete case-study).

We explicitly test for the influence of firm-level characteristics, such as firm age and share of foreign ownership, on the subsequent choice of marketing channel for the cut-flower case-studies. We are unable to explore this aspect within the textiles and clothing case-studies because of data limitations. However, we are able to undertake some quantitative analyses in order to explore learning by doing processes for firms in Cambodia, in terms of increased output, skills and overall productivity for one period of time compared to another.

Because we are unable to test for learning by doing outcomes over time for the cut-flower case-studies we instead differentiate between marketing channels which, the available literature suggests, demand particular firm-level capabilities. We rely on case-study material in order to describe the process by which each marketing channel was accessed and in what sequence.

#### **4.3.3 Learning by Doing at the Sectoral Level**

Indicators associated with the conventional GVC upgrading processes - product, process, functional and inter-sectoral upgrading - are referred to. Functional upgrading - movement from low to high value added activities - is the upgrading process most closely related to the learning by doing process described by Nelson and Pack (1999). Whilst it is possible to assign indicators to the other types of upgrading posited within GVCs, such as product and process upgrading<sup>77</sup> it is only possible to describe functional upgrading through case-study analysis.

It is more challenging to measure inter-sectoral upgrading. This type of upgrading refers to the acquisition of skills, technologies and capabilities by firms which are subsequently used to move into another sectors. We have to rely on case-study analysis in order to link domestic lead firms' movement into new sectors, which is inevitably challenging.

#### **4.3.4 Societal Learning by Doing Processes**

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<sup>77</sup> We make use of trade data and explore growth in volumes and values, and unit values.

In order to measure and assess the type of NIS in place, the following indicators are typically referred to:<sup>78</sup>

- Interactions among enterprises: primarily joint research activities and other technical collaborations;
- Interactions among enterprises, universities and public research institutes, including informal linkages as well as joint research;
- Diffusion of knowledge and technology to enterprises, including industry adoption rates for new technologies; and
- Personal mobility, focusing on the movement of technical personnel including within public and private sectors.

In turn, these indicators are then subsequently linked to firm-level performance. Given the limited institutional development in the case-studies analysed, the research revealed an important role of local business associations. How these interacted with formal institutions was not always clear.

As discussed by Lundvall (2009) methods to study NIS's typically move from the micro to macro levels and then consider the interactions. Relevant elements include firm interactions including with formal education systems. Macro level observations include national specificities regarding education, financial markets and welfare regimes. Evaluation and monitoring can provide input for learning and adaptive management.

It is further noted by Lundvall (2009) that when supported by public policies, the learning process may have the potential to modify governance structures and is therefore intrinsically influenced by economic power, which may in turn affect the development prospects of clusters and networks. In order for this process to be set in motion links between firms, intermediate institutions including business associations must exist. This is why elements of an NIS are described and a qualitative assessment made, even if an explicit policy did not exist at the point of GVC entry.

### **4.3 Research Questions and Hypotheses**

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<sup>78</sup> See: OECD (1997).

The research motivation relates to the challenge of export diversification and the ability of late industrialisers to effectively engage with the modern export sector in view of the ascendency of GVCs. The literature review has discussed how integration with the modern export sector has typically been facilitated by trade preferences. In addition to their reform overtime as the international trading system has evolved, their value has also been eroded. We have drawn attention to how internal GVC governances have changed and become more hierarchical over time, as well as more complex in view of non-equity modes of control.

This thesis explores what the ascendency of GVCs implies for new trade/new growth theory and learning by doing processes as conventionally understood. The nature of governance – external and internal – is expected to exert a major influence on learning by doing as envisaged by Nelson and Pack (1999). Within the research framework, the causal mechanisms flow from the influence of external GVC governance structures on internal GVC structures, and subsequently learning by doing and upgrading processes.

#### **4.3.1 Research Questions**

The overarching research hypothesis is that new trade/ new growth models such as Nelson and Pack (1999) are contingent on the governance structures which surround trade; these structures include those internal between firms that operate within GVCs and those which are external to the GVC and determined by governments. From this hypothesis we derive the following overarching research question:

- What are the identifiable learning by doing process apparent within the textiles and clothing and cut-flower sectors?

In order to answer this question, we classify external and internal GVC governance and then identify types of learning by doing as defined in Table 3.

In turn, the following hypothesis may be identified:

- Null: There are no differences in terms of related processes of learning by doing and assimilation.

- Alternative: There are, related to global value chain governance: internal and external structures.

A number of sub-research questions are subsequently generated, as follows:

- How do learning by doing processes differ between sectors/countries?
- How are these differences related to the internal governance between firms?
- How are these differences related to external governance structures (facilitative or directive)?

In the following sub-sections, the research progression is described. The specific research methods deployed within each stage of primary qualitative and quantitative analysis are described.

## **4.4 Research Methods**

It was recognised before field-work commenced that time and resource constraints would limit the ability to undertake a representative survey of firms in the major case-study countries. Therefore active steps were taken to obtain robust secondary data and access most recent firm-level surveys for both of the major country case-studies of Cambodia and Kenya, and their comparators, Bangladesh and Ethiopia. This information was subsequently used to validate and triangulate the primary qualitative information obtained.

### **4.4.1 Case Studies**

The logic of case-study selection was motivated by the need for comparative analysis to elaborate upon causal mechanisms: the influence of external governance structures on internal value chain governance and subsequent learning by doing and upgrading processes. Although the integration of the selected country case-studies with their respective GVCs is relatively well known within the existing literature, the influence of external governance structures on integration processes and nature of internal GVC governance are found wanting. Finally, outcomes in terms of learning by doing and subsequent upgrading processes have not been analysed in a systematic way.

In this sense, the case-study analysis is exploratory and intended to create new knowledge and be constructive. All of the country case-studies are conventionally

understood to operate within buyer-drive GVCs, characterised by hierarchical or quasi-hierarchical forms of governance GVCs. Given that deductive research methods are employed in the firm-level analysis, the research also intends to be confirmatory and test hypotheses generated with empirical evidence.

Case-studies were selected in the same sectors and for which it is possible to clearly position the role of the state as either facilitative or directive. The more heuristic approach toward GVC analysis developed in the late 1990s is used and adapted for the purposes of this research because of an inability to collect information on some of the standard variables included in GVC analysis, such as shares of value added. Because of this recognition, a methodological framework suitable for the research purposes was devised. Essentially, the first major case-study of Cambodia was used to inform the design of the next major country case-study, Kenya. In the case of the comparator case-studies, secondary data is mostly relied on.<sup>79</sup>

#### **4.5 Mixed Methods Research: Textiles and Clothing GVC**

The field-work undertaken in the last quarter of 2008 was an initial pilot. It was undertaken prior to the submission of the upgrade and methodology chapter of this thesis in 2010. The process of fieldwork in Cambodia therefore not only helped to refine the overall research methodology, but also the specific approach to qualitative research. Research was undertaken was part of a broader programme of works on “Competitiveness” to support the Royal Government of Cambodia. This project was funded by the United Nations Development Program (UNDP), Cambodia. The contracted organisation, the Overseas Development Institute (ODI), London, was assigned to work jointly with the Supreme National Economic Council (SNEC), the government economic think-tank, to undertake the study.

As the lead chapter author of the competitiveness assessment undertaken for the garments sector, I worked closely with a local researcher from SNEC (Kong Ratha) and Dr Soceth Hem (a sector expert) to undertake the assignment. A number of in-

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<sup>79</sup> Except in the case of primary information obtained through key informant interviews including with buyers and traders in the respective sectors.

depth firm-level interviews with firm managers were undertaken (maximum of five) with representative firms. However, because of sampling biases and in order to gain a more accurate picture of the sector there was a need to obtain reliable secondary data to validate findings. Contact was therefore made with researchers at the Institute of Developing Economies – Japan External Trade Organisation (IDE-JETRO) and recent firm-level surveys obtained.<sup>80</sup>

At that time, the export sophistication and product proximity literature was in vogue. For example, the World Bank (2009) Country Economic Memorandum which included use of the measures was launched at the Cambodia Economic Forum of 2009.<sup>81</sup> Concerns over the use of these measures and their interpretation, prompted interest in using Cambodia as a country case-study to explore specific research questions (which were at the time of being formulated as the PhD upgrade was made in June 2010). A summary of the garment sector competitiveness report is included in the project outputs published as UNDP (2009).<sup>82</sup> None of the information presented in the country case-study for Cambodia duplicates that included in the UNDP (2009) summary report.

Given the more directive approach adopted towards FDI management destined for the garment sector in Bangladesh, it was selected as a comparator case-study to Cambodia. Both Cambodia and Bangladesh are well known within the GVC literature as LDCs with a high export dependency on the garment sector. Both countries are also lobbying hard for more favourable market access to the US, which has granted duty free quota free market access to African economies under the African Growth and Opportunity Act (AGOA), but not LDCs located elsewhere.

#### **4.5.1 Process of Qualitative Research**

Because of industry, as well as government sensitivity, a high-level level approach was necessary to access firms and managers. This was possible through the support of UNDP. As the lead researcher for the garment sector it was possible to draw on support from a local researcher, who had just completed his PhD research on the sector at Kobe University (Dr Soceth Hem). This was in addition to working with

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80 This information was obtained after field work was undertaken (we discuss this data set within the sub-section on quantitative analysis, which follows).

81 See UNDP (2009).

82 Published in April 2009.

researchers from SNEC. Firm level interviews were facilitated by Dr Soceth Hem. Interviews with government officials, were facilitated by Kong Ratha, SNEC member. This division of labour was because of the respective competences of interviewers and their ability to ask the right questions within the most fitting settings. There was a need for any questions posed to be translated by the local researcher and then subsequently relayed to the interviewee.

Because of sensitivities regarding employment and wage conditions within firms, it was not possible to ask related questions. Moreover, the interviews were undertaken during the last quarter of 2008. This period was sensitive as the Global Financial Crisis (GFC) of 2008 had just begun. Furthermore, safeguards on Chinese garment exports to the US and EU were in the process of removal, as part of the MFA. Hence, industry representatives were willing to meet and co-operate with the interview process so long as they were assured that the results of consultations would directly inform government policy towards better supporting them and their efforts to remain competitive within a challenging market. Many stakeholders were keen to underscore the importance to them of the Cambodian government's lobbying of the US to grant them the same treatment as African exporters under AGOA.

The support provided by UNDP included transportation and logistics. The selection of firms was non-random. Only those firms known to have cooperated in previous surveys were contacted. The field-work in Cambodia was determined by the need to answer the specific research questions included in the overall framework developed for the UNDP.<sup>83</sup> This approach adopted a semi-structured interview (see Appendix 1). All firms were interviewed in and around Phnom Penh. One firm was located in a Special Economic Zone (SEZ). A newly constructed SEZ was visited and the managers of this site interviewed; these were Sino-Khmer. The questions posed to stakeholders at that time were related to the research objectives of the competitive assessment. A number of industry representatives were also consulted (see Appendix 1).

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<sup>83</sup> Which applied the same action-research approach across all sectors.

As a result of field-work undertaken in Cambodia, it became clear that undertaking similar research, unaided, would not be possible. Even when working with a senior government research body (SNEC) and a competent national researcher who had undertaken prior research in the sector, access to firm-managers was extremely challenging, with a 50 percent rate. In total five full days were spent on these interviews due to time and resource constraints; five factories and their managers were interviewed.<sup>84</sup> All of these considerations were therefore taken into account before field-work commenced in Kenya.

#### **4.5.2 Process of Quantitative Research**

In order to validate the research findings for Cambodia and compare to Bangladesh, the most up-to-date information derived from previous firm-level surveys undertaken in both countries by researchers at the IDE-JETRO was obtained: Yamagata (2006) for Cambodia; Bhakt et al. (2009) for Bangladesh. These results were collected by researchers within the same institute and within a reasonable time scale of each other. Some re-coding of variables was required in Excel, cross-referencing the original questionnaires and survey instruments.<sup>85</sup>

Because only one period of data is available for Bangladesh, we are unable to compare firm-level performance over time. We are also unable to distinguish between firms based on their characteristics (e.g. age, ownership and so on) and subsequent choice of marketing structure. To some extent this means we are unable to trace through the causal mechanisms from external governance to internal GVC governance (as indicated by firm-ownership structures) to as great an extent as hoped. Data are available for a second time period for Cambodia, however, which enables testing across two periods.

#### ***Cambodia***

Yamagata (2006) does not explore the productivity of garment firms in Cambodia, but instead focuses on the industry's poverty impact through the provision of low-skilled manufactured jobs that pay higher wages than alternative sources of employment. The sample selected for the survey was non-random. This is because, as discussed by Yamagata (2006), the team made every effort to visit all the firms listed by Garment

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84 We relied on a snowballing method of interviewing key informants.

85 The data are available here: <http://www.ide.go.jp/English/Data/index.html> [accessed 10 March 2010].

Manufacturers in Cambodia (GMAC), and all the firms registered by the Council for the Development of Cambodia (CDC) as garment manufacturers; 30 percent of the firms listed by the CDC or GMAC were not part of the final sample group, either because they had closed down before the survey or they did not answer the questionnaire.

Because of the geographical concentration of garment firms close to the capital city, for reasons such as ease of transportation links, access to a ready labour market and placement in special economic zones, the survey was also concentrated geographically. The general manager of the firm was sought. If unavailable (or disagreeable), or as discussed by Yamagata (2006), if did not speak either English or Khmer (being Chinese), then the survey team interviewed the firm's administration section chief, shipping manger, assistant to the general manager or other person in a managerial position (approval being given by the General Manager).<sup>86</sup>

The survey in Cambodia was undertaken from August to October 2003 and covered 164 export-oriented garment-manufacturing firms. The sample size represented 84 percent of the total number of GMAC members firms. Although the total number of registered firms under GMAC was 196 in 2003, this figure includes those that have closed down, but remained registered members. Hence, as Yamagata (2006) points out, the data set covers most of the export-oriented garment-manufacturing firms operating in 2003.

Regarding the second firm-level survey, carried out in Cambodia by IDE-JETRO during 2006, detailed information on the survey approach and methodology used across the two periods – 2003 and 2009 – is provided by Asuyama et al. (2013). They note that the two surveys were led by the same institution - IDE-JETRO – working with LIDEE Khmer in 2003 and the Economic Institute of Cambodia (EIC) in 2009. In total, 164 and 123 firms were surveyed in 2003 and 2009 respectively. The sample covered 85.4 percent of the garment factories in 2003 and 49.0 percent in 2009. Based

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<sup>86</sup> As discussed by Yamagata (2006), since export-oriented garment factories are concentrated in Phnom Penh and Kandal Province encompassing Phnom Penh, the survey was undertaken mainly in these two areas; seven firms out of eight GMAC member firms located in Sihanoukville were also interviewed, although four GMAC members located in Kompong Cham and Kompong Spue were not visited.

on the GMAC list they note that 47.8 percent of firms that were operating in 2003 closed down between 2003 and 2009.<sup>87</sup>

### ***Bangladesh***

The data obtained by Bhakt et al. (2009) is based on a survey of 232 firms, concentrated in the main geographical locations of production (Dhaka, Gazipur, and Narayanganj). All were members of either the Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA) or the Bangladesh Garment Manufacturers and Exporters Association (BGMEA). The survey was undertaken by the Bangladesh Institute of Development Studies and the IDE-JETRO. Bhakt et al. (2009) sought to assess the technical efficiency and profitability of the knitwear industry in Bangladesh whilst also examining the sector's role in poverty reduction.<sup>88</sup> The survey aimed to cover all BKMEA member firms whose factories were located in the Dhaka Division, which is one of five geographical divisions in Bangladesh. A caveat is that firms operating in Chittagong - the second-greatest garment producing division - were not covered because of research resource allocations.<sup>89</sup>

Questionnaires were answered by responsible officers in each firm, with the Managing Director or the General Manager being the first port of call for the questionnaire followed by other capable and nominated staff (as noted above for the Cambodia case study). However, the survey response rate was less than 50 percent. Overall, 251 out of the firms in the sample responded, of which the results from 232 firms were utilised (the others were dropped because of inconsistencies with the data). The combination of the shares of the sample firms in Narayanganj and Dhaka are roughly comparable among all BKMEA members. In this sense, the data generally represents the set of BKMEA members. However, it is noted that there is a possibly critical under-representation in the sample of foreign-owned firms.

## **4.6 Mixed Methods Research: Cut Flower GVC**

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87 This is higher percentage than that recorded in the statistics obtained by the Ministry of Commerce, presented in the next chapter.

88 Their findings suggest that while there is a significant scale effect in profitability and productivity, no supporting evidence was found for the positive impact on competitiveness of industrial upgrading in terms of usage of expensive machinery and vertical integration and industrial agglomeration.

89 BKMEA members are concentrated in the Narayanganj District of Dhaka, with only a small number of members in Chittagong. Firms that were members of BGMEA but not BKMEA were not visited. The survey team attempted to visit all 573 BKMEA member firms located in the Dhaka Division: however, 16 firms had closed down out of the original 573.

Because of the lessons learnt during the field work undertaken in Cambodia, a local research organisation in Kenya was contacted and contracted to provide research assistance and logistical support. The local research organisation was the Centre for African Bio-Entrepreneurship (CABE), Nairobi. The local researcher sub-contracted was Leonard Oduori, also a part-time lecturer of the University of Nairobi. Resources were made available so as to visit and undertake firm-level interviews through the Gates Foundation-funded research project *Aid for Trade, GVCs and Food Security*. The initial findings of the field work were published in Keane (2013b).

The results presented in this thesis however, are much more detailed and have been validated by use of secondary firm-level data. In order to substantiate the initial research findings reported in Keane (2013b), including regarding tiers of firms and recent consolidation processes within the sector, the results were discussed at some length with other researchers who had recently undertaken firm-level surveys. This includes with researchers from the International Growth Centre (IGC) based at the London School of Economics (LSE).

#### **4.6.1 Questionnaire Design**

The questionnaire was developed specifically for the managers of cut-flower firms. However, variants of the questionnaire and semi-structured interview techniques were used with other key informants, including employees and production line workers. The final questionnaire<sup>90</sup> is presented in Appendix 2. The questionnaire explores concepts in broad terms in view of the inductive approach to research, in addition to the realisation (further to field work in Cambodia) that given time and resource constraints, it would not be possible to undertake a representative survey of firms.

Interview questions were asked directly to managers during semi-structured interviews. All firms were informed prior to visits as to the types of questions to be asked and information sought; in some cases, example questionnaires were provided in advance of farm visits with an accompanying letter to explain the objectives of research (as purely academic) and to avoid any commercial sensitivities. This meant that the sampling methodology was non-random and not representative. The questionnaire used is provided in the Appendix 2.

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90 Further to an initial pilot and discussions with local researchers.

### ***Interviewees***

Firm managers were initially targeted. If unavailable, the next most senior person was interviewed. Firms were targeted in and around the Lake Naivasha area. Appendix 2 lists all stakeholders interviewed in Kenya.

### ***Focus group interviews***

The first focus group interview was used as a pilot. This was so as to refine the questions asked and focus on key concepts. Individuals were engaged initially and then the discussion opened up to the group. The focus group interview was semi-structured, with neutral as well as leading questions deployed to elicit responses. Introductions were used to establish rapport, followed by group discussion and then closure. These interviews took place in local cafes in and around the Lake Naivasha area. Refreshments were provided so as to provide for a relaxed setting; both males and females attended.

Only in a few occasions were employees relaxed enough to discuss details regarding the terms of their employment. Given these challenges which became apparent in view of the presence of supervisors (who in some cases intervened to become moderators) in the final focus group interview a different approach was adopted. The supervisor was interviewed by Leonard Oduori, the Research Assistant, whilst the focus group interview was undertaken as planned. This final session revealed information on wage inequality.

### ***Use of Secondary Data in Kenya and Ethiopia***

The most recent and comprehensive survey results for firms in the cut-flower sector were obtained from researchers at the IGC, LSE.<sup>91</sup> Their data has been analysed in the case of Kenya (Ksoll et al., 2009; Ksoll et al. 2013) but not yet in detail for Ethiopia (Macchiavello and Morjaria, 2013). The firm-level survey is compared to the general population in Kenya and described in Ksoll et al. (2013); the results suggest no sampling bias. The survey results in Ethiopia cover almost the whole population of the firms. It was not possible to obtain the actual survey instrument obtained by the

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<sup>91</sup> It was not possible to obtain an up-to-date list of firms active in the cut-flower sector during field work, despite repeated requests and assurances from industry representatives.

researchers. Nevertheless, the STATA data files received were well coded and easy to read.<sup>92</sup>

#### **4.6.1 Quantitative Research: Kenya and Ethiopia**

Data were only available for one period in Kenya (2008) and Ethiopia (2008) respectively. However, information was provided on end markets. This enabled the differentiation based on firm-level characteristics (age, ownership and so on) in addition to the marketing channel. In order to explore the influence of firm-level characteristics on the choice of marketing structure, a binary outcome regression model was used for the following channels:

- Directly to buyer/retailers.
- Use of auction house.
- Both.

Some coding and missing data issues were encountered, but were not considered to introduce any significant bias into results. A logit model was used because the results are more intuitive in terms of the influence of indicators such as firm age increasing or decreasing the likelihood that a particular marketing channel is selected by firms.

### **4.7 The Buyers Perspective**

The objective of the interviews undertaken with the key informants and buyers with regards to each of the respective GVCs was to obtain further information on firm-level capabilities. The results are therefore used to triangulate and validate the main findings arising from the case-study analyses. The questionnaire developed and available in Appendix 3 sought to obtain information related to the following:

- Value chain governance: internal and external.
- The nature of inter-firm relationships and how have these relationship changed over time.
- Respective country capabilities and upgrading processes to date.

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<sup>92</sup> This is compared to analysis of the garment sector firm-level surveys, where cross referencing with the survey instrument was necessary in order to interpret results.

The questionnaire design draws on that of Schmitz and Knorringa (2001). Some of the same questions are used, but new ones are also added in view of the thesis objectives. This includes in relations to questions such as: what do producers learn from foreign buyers?<sup>93</sup> What role do these buyers play in furthering or hindering the learning and subsequent upgrading of producers? Further questions were asked in order to understand how governments could better support these processes.<sup>94</sup>

Buyers sourcing from both countries in each sector as well as individually were targeted. This was so as to shed more light on the comparative aspects explored in this thesis. However, given the product differentiation apparent within the case-studies and some of the differences between firms in each country, countries are not always competing in the same market segment. Because of extremely limited response rates (see Appendix 3) and industry sensitivity, it was not possible to obtain full results through the use of the questionnaire. Instead, the questionnaire was used as the basis for semi-structured interviews to understand the evolution of production networks and the relative position of countries within these, whilst avoiding commercial sensitivities regarding buyers sourcing strategies.<sup>95</sup>

The total number of interviews undertaken was 17; 10 for the cut flower sector; 7 for the textiles and clothing sector. This information is summarised in Appendix 3, along with non-response rates. Because it was not possible to obtain information related to sourcing strategies from buyers due to commercial sensitivities, this view was sought from key informants; this includes the nature of contractual relations, incentives to outsource and the extent to which investors' motivations have progressed from merely efficiency seeking towards more relational types.

## 4.8 Methodological Considerations

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93 However, Schmitz and Knorringa (2001) ask this question with regards to competitiveness aspects; hence, although we draw on their questionnaire as an example, we also adapt it in view of the specific research questions investigated in this thesis.

94 As discussed by Schmitz and Knorringa (2001) the practices of buyers remains under-researched and their comparative expertise underutilised for research purposes.

95 Other key informants were reluctant to discuss the relative capabilities of each country case-study since "this information is usually paid for, not given for free".

The methodological considerations within this thesis relate mainly to the following: 1. Case-study selection; 2. Operationalisation of concepts; 3. Comparative quantitative analysis; and 4. Reliance on secondary data. These are discussed sequentially.

#### **4.8.1 Case Study Selection**

Because of the research motivations discussed in Chapter One, Kenya was selected as an initial country case-study. For some time Kenya has been heralded as one of the few examples of successful export diversification and engagement with the modern export sector (Jenkins, 2005). The horticulture sector in Kenya was also developed as a GVC case-study by Dolan et al. (1999) and continues to be widely referred to in the case-study literature. However, the identification of specific functions undertaken by firms and related learning by doing and subsequently, upgrading processes have not been analysed in a systematic way.

Because of the obvious differences related to the GVC integration process in Ethiopia compared to Kenya, we selected Ethiopia as a comparator country case-study. Other researchers, including those at the ICG, also had this comparison in mind. The ability to draw on their extensive firm-level data has enabled a much more comprehensive analytical framework which integrates GVC analysis with firm-level analysis.

Initially, a consideration of the comparative analysis between modern and traditional agricultural export sectors was considered. However, although this comparison would be able to shed light on the differences between the two sectors, it would fail to explain why some countries advance and fail to upgrade within GVCs. Given debates regarding the ability of Africa to tap into the modern export sector, we decided to compare the modern export sector in Africa with Asia. Hence, we focus on ‘how’ the export of modern sector goods takes place, rather than ‘what’ is being exported.

In view of the wholly FDI-driven process of GVC integration in Cambodia with the textiles and clothing GVC, the absence of backward linkages and more facilitative approach adopted towards integration an obvious comparator country was Bangladesh. Both countries are LDCs and so benefit from the same tariff rent made available by developed countries. However, since very different approaches to GVC integration were adopted, comparative case-study analysis was expected to be insightful.

#### **4.8.2 Operationalisation of Concepts**

Although there is no standard methodology for GVC analysis, consideration of the interaction between external and internal GVC governance remains under developed. A new framework to integrate these aspects has not been advocated in this thesis. Instead the causal mechanisms and transmission of knowledge spillovers have been described in order to demonstrate why and how, external governance matters in terms of the achievement of learning by doing and particular upgrading processes which enable capabilities to develop,

In order to do this, the qualitative approach to GVC analysis is combined with the more quantitative approach of firm-level economic analysis. This mixed methods research approach has been applied in the most integrated way for the cut-flower country case-studies (as a result of data availability). It results from the logical progression of research; the methodology was refined during the process of drafting the Cambodia case-study and its comparator of Bangladesh, which meant that the design of the cut-flower case-studies in Africa is more complete. Attempts were made to reduce biases when undertaking qualitative research in the major case-studies of Cambodia and Kenya. There is invariably a certain degree of bias, however, given reliance on key informants to identify and obtain access to the necessary representatives for interview.

There are always reliability and validity concerns that arise when making use of secondary data. For example, source bias may arise because of vested interests – where those responsible for answering questions may have an incentive, or be motivated to give an inaccurate response. These biases are reduced through the cross-referencing and validation of different sources. A final attempt was made in other to validate the findings of the case-study analyses through interviews undertaken with buyers and key informants between July to September 2015.

#### **4.8.3 Quantitative Analysis**

The ability to generalise to the populations of interest is somewhat limited. Despite this, the intention has been to integrate quantitative with qualitative research in order to shed light on causal mechanisms. This has been accomplished to the greatest extent within the cut-flower GVC case-studies through a comparison of marketing channels and the influence of firm-level characteristics on these choices. This approach was

adopted because of an inability to effectively monitor learning by doing and upgrading processes over time.

Risk of breach of confidentiality has been avoided in the case of the IDE-JETRO surveys because the firm-level data obtained was anonymized and already published in a publicly available format. Although the data obtained on the cut-flower sector in Kenya and Ethiopia has been anonymized, it is not yet publicly available. Nevertheless, the risk of breach of confidentiality has been limited and permission to use the data for PhD research, obtained.

The firm-level information was used to triangulate findings to the extent possible. Secondary data analysis includes any further analysis of an existing dataset which presents interpretations, conclusions or knowledge additional to or different from those presented in the first report on the inquiry as a whole and its main results (Hakim, 1982). There are three main ways in which researchers can determine survey reliability when undertaking primary research, these include:

- Test-Retest/Stability.
- Alternate form/equivalence.
- Internal consistency.

Multiple data sources are used to cross-check and confirm the information obtained from secondary data sources. This has been undertaken to the extent possible in all of the country case-studies, in view of data availability.

#### **4.9 Concluding remarks**

It is generally recognised that whatever a case-study gains in internal validity it to some extent loses in its external validity. This study has also had to contend with construct validity: are the concepts operationalised the right ones? A consistent framework has been applied across the major and comparator case-studies, but admittedly the comparison between the chosen sectors is not a complete one.

The analysis undertaken for the major and comparator case-studies in the textiles and clothing sectors provide lessons for the cut-flower case-studies. The results from this

first set of case-studies subsequently informed the qualitative and quantitative methods deployed for the next set, in the cut-flower sector. The extent to which the findings presented in this thesis can be more widely generalised is acknowledged. In this regard, each of the case-study chapters can be read as a discrete research contribution; the most detailed is the Kenya cut-flower case-study.

Each of the empirical case-study chapters begins after an introductory chapter which provides an overview of fragmentation processes and evolution of each respective GVC. These introductory chapters describe the evolution of the GVC to date and how each country is positioned, globally. It then summarises the main arguments advanced in each of the empirical case-studies.

## **5. Evolution of the Textiles and Clothing Global Value Chain**

This Chapter describes the evolution of the textile and clothing GVC and draws attention to external governance aspects related to the development of multilateral trade policy rules. These rules were designed to manage global fragmentation and integration processes and were subsequently adapted further to the rise of East Asian NICs.

The respective positions of Cambodia and Bangladesh are identified in terms of their position globally within the textiles and clothing GVC. An overview of country capabilities, provided. Finally, this Chapter concludes with the comparative aspects to be further explored in the case-study analyses which follow and the main arguments advanced.

### **5.1 Internationalisation of the Global Textile and Clothing Industry**

The expansion of the textiles and clothing industry globally and fragmentation of stages of production across countries was underpinned by a set of rules enforced and incorporated into multilateral agreements such as the GATT and then subsequently the WTO. These rules initially included the use of quantitative restrictions to regulate trade in textiles and clothing. The severity of measures put in place - in response to the rise of the East Asian NICs - was a reflection of the importance of the industry in terms of providing a stepping stone into the modern export sector.

The movement of the industry across the Asian NICs was conceptualised within the “Flying Geese” model of recycling comparative advantage developed by Akatamsu (1962). During the 1960s and 1970s, the industry spread from Japan to other East Asian neighbours, such as Hong Kong, South Korea and Taiwan – which collectively became known as the first-tier NICs. During the 1980s, the industry subsequently devolved from this region and gravitated towards other Asian neighbours including China, and the second-tier NICs of Indonesia, Thailand, as well as India, Pakistan and Bangladesh.

What is not adequately captured or conceptualised within the GVC literature is how trade policy, initially agreed under the GATT and then subsequently under the WTO, governed global supply and provided some of the incentives to fragment the industry. Moreover, the rise of the Asian NICs as intermediaries within a triangular modes of manufacturing and the resultant implications for other late industrialisers has only recently begun to be explored.

### **5.1.1 The Multi-Fibre Agreement**

Quantitative restrictions on textiles and clothing trade started as early as the 1930s when the US negotiated a voluntary export restraint (VER) on Japanese textile exports; in response to protectionist pressures in the US in the late 1950s, Japan, Hong Kong, China, India and Pakistan agreed to VERs for cotton textile products.<sup>96</sup> The MFA which came into effect in 1974 provided a framework of VERs that regulated the textile and clothing exports entering developed country markets, from developing country producers. As discussed by Keane and Page (2013) the MFA regime

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96 See Liu and Sun (2004:53).

essentially made partners on both sides of the relationship captive to the regime. However, the regime remained outside of the GATT.<sup>97</sup> In order to address this, the Agreement on Textiles and Clothing (ATC), was negotiated to phase out the MFA during the Uruguay Round of trade negotiations, 1994.

The final stage for integration commenced in 2005, under the auspices of the WTO. Quotas on Chinese exports to the EU and US were phased out. This meant buyers were able to source from any country, any amount. As discussed by Pickles et al. (2015) notions of managed trade and ‘constrained upgrading’ and thus the strategic rationales underpinning trade policy were articulated at a pivotal moment when one trade regime (the MFA with its distributed system of quota) switched to another (the ATC).

Only recently has the influence of trade policy regimes been discussed in terms of their influence on value chain outcomes and upgrading strategies (Curran and Nadvi, 2015). This includes measures applied at the border such as tariffs, as well as product specifications which confer tariff rents to developing country suppliers contingent on shares of domestic value added (which nominate themselves under the WTO system).<sup>98</sup>

Essentially, the MFA conferred a form of locational advantage to countries not subject to the regulation and brought developing countries into production networks. The end result was the creation of triangular trade agreements between the USA, Europe, the Asian NICs and lesser developed Asian economies (in addition to other LICs in Latin America, the Caribbean and SSA). Today the industry operates on the basis of tightly coordinated production networks linked to end-markets, highly organized with tiers of suppliers differentiated by their functions, spread on a geographical basis.

### **5.1.2 Compliance Issues**

Generally, the textiles and clothing GVC is considered one of the quintessential ‘buyer driven’ value chains. However, over time, particular segments of the GVC and

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97 See also WTO (2015) [https://www.wto.org/english/thewto\\_e/minist\\_e/min05\\_e/brief\\_e/brief23\\_e.htm](https://www.wto.org/english/thewto_e/minist_e/min05_e/brief_e/brief23_e.htm).

98 For example, rules of origin specifically state the amount of domestic value added which must be embodied within exports in order to benefit from reduced tariffs.

stages of production have become increasingly concentrated which has served to consolidate the position of firms within stages and tiers of production. More recently, trade policy developments have begun to influence the institutional context within which production and work – the role of labour – are organised (Pickles et al., 2015).

As quantitative trade restrictions have been removed in developed country markets, the end result is increased consolidation at the firm and country level and with buyers modifying their strategies towards lead time management, production flexibility and product quality and delivery – away from [tariff] rent capture.<sup>99</sup> Globally, these shifts have been expressed through a decline in unit prices and increased pressure in the sector, as geographies of global sourcing have become more complex and multi-layered (Pickles et al. 2015).

## **5.2 Structure of the Textiles and Clothing GVC**

Because of the evolution of the industry globally, it is important to take stock and identify the relative position of Cambodia and comparator case-study, Bangladesh. The conventional understanding is that the garment sector, as a sub-sector of the textiles and clothing value chain, is buyer-driven. This is because production is coordinated by decentralised, globally dispersed production networks coordinated by lead firms who control value added activities such as design and branding, but outsource all or most of the manufacturing process to a global network of suppliers.<sup>100</sup> Producers are integrated into the value chain based on their respective capabilities. These relate not only to labour costs, but increasingly other aspects of production including: logistics and supply chain management, compliance issues and avoidance of reputation risks.<sup>101</sup>

### **5.2.1 Stages of production**

The stages of production in the textiles and clothing GVC are rather distinct, with the main value-adding activities, design, branding and marketing, being dominated by a few lead firms (TNCs). GVC drivers include those with the most market power such as retailers, brand marketers and brand manufacturers. In relation to suppliers, it is

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99 See Curran and Nadvi (2015).

100 See Pickles et al. (2015).

101 This view was expressed by several key informants as “where the market is heading”.

important to make the distinction between clothing and textiles producers, and countries which specialise in one or both aspects of production.

Textiles production may comprise of several stages in production and is the traditional backward linkage to the garment GVC. Hence, the forward linkage for the textiles sector includes garment production. This stage comprises the cutting and trimming of fabrics and finishing. It is at this node of production that Cambodia is positioned, with a reliance on imported inputs. In comparison, Bangladesh produces both textiles and clothing, domestically.

The textiles segment of the value chain (yarn and fabric) is described as being the most important input for clothing production; it is more capital and scale intensive, demands higher skills and retains a large presence in countries where capital and skilled labour are found in relative abundance (Pickles et al., 2015). Further to the assembly of the product using internationally or domestically sourced fabric, either the product is then exported directly to the retailer (FOB), or if further finishing is required, the product may be sent to either a brand marketer or sourcing intermediary for further work. This stage of production may include ironing, packing and adding final labels, so the final product can then be sent to retailers, which are mass merchandisers or specialty retailers.<sup>102</sup>

Producers that specialise in the basic assembly stage of production are known as cut, make and trim (CMT) suppliers. In this case, inputs are sourced internationally rather than domestically. Over time these types of suppliers may become full package suppliers - dealing directly with retailers and mass merchandisers, or branded marketers. This is so long as they can take responsibility for sourcing all inputs used in production including textiles, as well as ensure final delivery to end markets. However, this upgrading trajectory depends not only on the commensurate development of producers' capabilities, but also on the relinquishment of some controls by global lead firms and intermediaries.

### **5.2.2 Regional Division of Labour**

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<sup>102</sup> See Gereffi and Memedovic (2003); Nordas (2004).

As elaborated upon by Gereffi and Frederick (2010), there is a regional division of labour in the apparel or clothing segment of the GVC. For example:

- the United States generates product design and ordering;
- Japan provides the machinery such as sewing machines;
- the NICs supply fabric; and
- low-wage Asian economies (including Cambodia) sew and stitch together the end product.

Many low income countries, including Cambodia, lack the necessary factor endowments to produce textiles and other inputs into the value chain. Hence, they enter at the CMT node of production. This was also the case for Bangladesh, at least in the initial stages of GVC entry and engagement with East Asian lean firms and intermediaries. However, subsequently, it has assumed responsibility for sourcing fabric, including from domestic sources.

### **5.2.3 Upgrading Opportunities and Challenges**

Because of the challenges associated with moving towards taking control of some of the downstream functions within the textiles and clothing value chain, the traditional route of upgrading posited - from original equipment manufacturing (OEM) to Original Design Manufacturing (ODM) and then Original Brand Manufacture (OBM) as described in Gereffi (1999) - has been replaced by other opportunities to increase the range of services offered to lead firms.

This is why the more recent distinction between a country that specialises in basic assembly and CMT (Tier 1) as compared to another that is a full package supplier, which takes control of the assembly of the product, including the sourcing of inputs as well as delivery to customers (Tier 2) is now made. However, the implication of these shifts in potential upgrading trajectories - the closing of some routes and opening of others - has not been adequately explored within the literature date.

For example, movement by CMT producers into certain types of activities so as to become a full package supplier may generate other spillover effects. The experience obtained with managing logistics, could serve to attract similar basic activity functions of other industries. Major questions remain however, as to the ability to

functionally upgrade, given the emergence of tiers of suppliers specialising in particular functions.

Bangladesh and Cambodia both feature among the world's largest exporters of textiles and clothing, though Bangladesh is by far the powerhouse in absolute terms.<sup>103</sup> However, Bangladesh had shifted its respective position in the value chain to become an important global importer of textiles, accounting for 1.9 percent of world imports in 2014 (\$6billion) up from \$1.5billion in 2004.<sup>104</sup>

China is now the world's largest exporter of textiles and clothing. The development of backward linkages within the sector are considered to be outstanding with strong product diversity and ability to deliver relatively high product quality at competitive prices, further to upgrading efforts undertaken in the past (Butollo, 2015). As a result, Chinese firms are able to take on multiple functions on behalf of global buyers (Frederick and Staritz, 2012). It is generally recognised that the emergence of China, in addition to other Asian producers, has had ripple effects within the industry.

#### ***Country Capabilities***

A classification of supplier's capabilities and position in the textiles and clothing GVC, including China, is presented in Table 4. This classification is based on producers' functional capabilities which essentially translate into GVC segments. Cambodia entered into the clothing, or garment, node of this GVC during the 1990s and is located within the CMT node or first tier. In comparison, Bangladesh is currently listed as a package contractor in the supplier tier, or second tier.

**Table 4: Country Capabilities in Specific Functions**

Functional Capabilities	Country Examples	Description of Activities	Firm Ownership and Size	Employed
Cut, make, trim (CMT) (assembly) <b>Supplier tier:</b> Marginal supplier 1 <sup>st</sup> tier	Cambodia	This is a form of subcontracting in which garment sewing plants are provided with imported inputs for assembly, most commonly in export processing zones (EPZs). CMT, that is, "cut, make, and trim," or CM (cut and make), is a system whereby a manufacturer produces garments by cutting fabric provided by the customer and sewing the cut fabric into garments for delivery to the customer in accordance with his or her specifications. In general,	FDI: 90%; Local: ~ 7%	352,000
	Vietnam		FDI: 45%; State-owned enterprise (SOE): 10%	2 million

103 The textiles sector comprises chapters 50 to 60 and 63 of the Harmonised System whilst the clothing sector comprises chapters 61 and 62 of the same classification.

104 Exports of textiles were approximately \$388million in 2004 (WTO, 2014).

		companies operating on a CMT basis do not become involved in the design of the garment, just the manufacture.		
Package contractor (OEM) sourcing <b>Supplier tier:</b> Preferred supplier 2 <sup>nd</sup> tier	Bangladesh	OEM is a business model that focuses on the manufacturing process. The contractor is capable of sourcing and financing piece goods (fabric) and trim, and providing all production services, finishing, and packaging for delivery to the retail outlet. In the clothing industry, OEMs typically manufacture according to customer specifications and design, in many cases using raw materials specified by the customer. Free-on-board (FOB) is a common term used in industry to describe this type of contract manufacturer. However, it is technically an international trade term in which, for the quoted price, goods are delivered on board a ship or to another carrier at no cost to the buyer.	Domestic FDI outside of export processing zones, FDI within EPZs.	3 million
	Indonesia		Foreign and local firms	1 million
Package contractor (OEM) sourcing <b>Supplier tier:</b> Niche supplier	Sri Lanka		Foreign and local firms	270,000
	Mexico		Foreign and local firms	750,000
Full package provider (ODM) <b>Supplier tier:</b> Strategic supplier	Turkey	This is a business model that focuses on design rather than on branding or manufacturing. A full package garment supplier carries out all steps involved in the production of a finished garment, including design, fabric purchasing, cutting, sewing, trimming, packaging, and distribution. Typically, a full-package supplier will organize and coordinate the design of the product; the approval of samples; the selection, purchasing, and production of materials; the completion of production; and, in some cases, the delivery of the finished product to the final customer.	Many small-and medium-enterprise firms	n/a
	India		Local dominates; foreign firms must be a joint venture. Small firm size	35 million
	China		FDI: 45%; SOE: ~2%	30 million

Source: Adapted from Gereffi and Frederick (2010).

Investment into the textiles and clothing value chain should be analysed carefully in relation to its source and the segment for which it is destined. This is because of the range of potential development impacts, as well as potential upgrading (and downgrading) processes applicable to each stage of production. The example of South Africa illuminates on the different dimensions of firm's internationalisation strategies; this includes with regards to the relationships governing technology, ownership and distribution within the value chain (Roberts and Thoburn, 2003). The end result of liberalisation is that garment producers and buyers are more likely to import because of weak upstream linkages; competition for sources of supply within the domestic market are based more on reliability of supply than price (*Ibid*).

Since CMT producers normally make garments using the fabric supplied by their end customer (the buyer) or a designated intermediary, the experience of Bangladesh suggests firms were encouraged to move into the production of textiles. As discussed by UNCTAD (2013) Bangladesh has increased the share of local value added within its clothing exports to around 30 percent (the same level as Viet Nam) and this is

attributed to government policies which encouraged investment in the domestic textiles industry. It has developed both backward and forward linkages so as to both source domestic textiles and fabric inputs and supply retailers directly, without relying solely on intermediaries. In comparison, the available evidence suggests Cambodia was and remains integrated within triangular manufacturing networks, with a reliance on East Asian intermediaries, and now increasingly China, for inputs.

In East and South East Asia, the garment value chain is commonly coordinated by intermediary companies such as Li & Fung Ltd. (based in Hong Kong). These intermediaries coordinate and control manufacturing sub-contractors and ship finished garments back to retailers. In addition, they may provide other services from product design to raw material sourcing, quality control and logistics, which cover the entire supply chain.

The contractors responsible for the actual manufacturing of the garments either specialise in assembly activities (i.e. sewing the fabric and finishing) (such as Cambodia) or provide full-package services that involve sourcing the textiles input, controlling the intermediary steps, packaging and shipping the order to the wholesalers or retailers (such as Bangladesh).

A distinction is made in Schmitz and Knorringa (2001) between price-driven versus quality-driven value chains. They find that within price-driven value chains upgrading opportunities may be low with buyer concentration, compared to high upgrading opportunities in quality-driven value chains (Table 5). Buyers may either be promoters of upgrading, or exploiters (of low cost labour). They note that the upgrading contribution of buyers will invariably vary in line with producers' capabilities; buyer support is often crucial for entering a new market but diminishes over time; at this point, the focus of buyer shifts from supporting intra-firm to inter-firm upgrading; some buyers subsequently help advanced producers improve the management of their supply chain.<sup>105</sup>

**Table 5: Upgrading and Earning Opportunities**

Market Segment	Buyer concentration
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105 And this action is increasingly being undertaken with the support of donors.

	<b>High</b>	<b>Low</b>
<b>Price-driven</b>	Upgrading: low Gains: uneven	Upgrading: low Gains: even
<b>Quality-driven</b>	Upgrading: high Gains: uneven	Upgrading: high Gains: even

Source: Schmitz and Knorringa (2001)

When quality matters, the logical postulate is that buyers will invest more in producers' capabilities. This may entail a shift from intra-firm to inter-firm upgrading (e.g. through linkage development) though this doesn't mean that intra-firm support discontinues, just that "buyers support for inter-firm upgrading is usually limited to improving the supply chain and rarely extends to assisting producers in developing non-production skills" (Schmitz and Knorringa, 2001:18). They conclude that inter-firm relations in quality (not price) driven value chains may be more conducive to mutual learning and improvements in production. Finally, attention is drawn to the ability of local producers and managers to learn from buyers.<sup>106</sup>

The main buyers from the EU and US markets differ in the size of their orders which has implications for the kinds of services leveraged from suppliers. Generally, US buyers tend to be more prescriptive, including dictating manufacturers' choice of fabrics (Roberts and Thoburn, 2003:43). As discussed by Savchenko (2012) orders from US mass market retailers - the main buyers from Cambodia - are large and price is the most important criteria. Hence, this may be characterised as a price-driven value chain, where the opportunities for upgrading are low. In comparison, EU orders in addition to being smaller also demand more variation and have different standards for quality, fashion and with regards to lead times; the EU is the main market for Bangladeshi suppliers.

### 5.3.1 Main Buyers

Some of the same branded manufacturers source both from Bangladesh and Cambodia and supply both markets: EU and US (e.g. GAP). However, there are important differences in relation to the sourcing mechanisms, in view of different country capabilities. In order to understand who sources from Bangladesh and how,

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<sup>106</sup> Schmitz and Knorringa (2001) conclude that producer countries differ substantially in terms of their "willingness to learn from foreigners" and differences in these aptitudes can help explain producers' relative competitiveness.

information was obtained from industry specific sources<sup>107</sup> as well as key informant interviews.

It was possible to identify one branded retailer with sourcing offices in Cambodia, according to the publicly available list of registered firms.<sup>108</sup> It was not possible to do so in the case of Bangladesh because this list is not publicly available. Generally, Cambodia is involved in triangular production: integrated within networks through parent companies, which are themselves intermediaries, supplying retailers. In these cases, skills and the expertise of the home office is leveraged for value addition activities (Natsuda et al., 2009).

Although the list of firms registered in Cambodia is publicly available (on the GMAC website), information on their international buyers is not. It remains a major challenge to link factories to their buyers.<sup>109</sup> Nevertheless, a review of recent actions undertaken by retailers such as H&M (which sources from both countries) to work more collaboratively with government and donors to ensure that tragedies such as the Rana Plaza incident are not repeated reveals how many of the same retailers source from both countries. This includes companies such as Primark (parent company ABFoods); Arcadia Group; H&M; M&S; GAP. Intermediary buyers such as Li and Fung can be seen to source also from Bangladesh.<sup>110</sup> Retailers, and some intermediaries, place their orders direct with firms within country or through intermediaries based in other East Asian partner countries (mostly in the case of Cambodia).

Increasingly, brands are looking for product innovation with factories vying to fulfil these requirements. The demands on producers have therefore increased, in view of expectations with increases in the speed to market. Factories now cope with a constant cycle of orders with increasing complexity and variety demanded, as opposed to being limited to four specific seasons a year. Key informants described leaner supply chains emerging, with implications at the factory floor, such as reductions in the number of

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107 These industry sources are listed in Appendix 3.

108 For example, see the Garment Manufacturers Association of Cambodia (GMAC) member list (2013), accessed 20 July 2015 (<http://bit.ly/1eYeg3>).

109 For example, according to media reports, the least compliant factory on the Better Factory Cambodia's list, Best Tan Garment Ltd. in Meanchey district, was found to produce clothes for Spanish brand Pull & Bear, owned by Inditex (Henderson and Sovuthy, 2014).

110 See Smith (2016); Woodard (2014).

helpers per operator (2 per operator to 1 per 3 operators) and increases in capital intensity and automaticity of production.

Retailers' reliance on agents, or intermediaries, by some buyers was reported by key informants to have declined substantially in recent years (from around 80 percent sourced via agents to approximately 40 percent). These changes have been driven by costs, efficiency and lead times. For some product lines, however, a broad base of supplier networks was sought. Buyer/retailers described how they continued to remain open to suppliers, so long as compliance issues were met.

Direct sourcing in country cuts out the intermediary and is generally used for sourcing at scale; agents, in comparison, may be utilised for more niche orders and select product lines. In view of these trends, a new wave of consolidation in the sector was described by some key informants. This is whereby, 80 percent of production is being sourced by the top 20 suppliers, with a periphery chain of agents. There is recognition that more strategic supplies helps to reduce costs and increase partnerships (with costs of switching being high).<sup>111</sup>

### **5.3.2 Respective Country Capabilities**

In view of recent compliance issues, Cambodia was considered a “safe bet”. Others noted that it was easier to identify buyers who “don’t source” from Bangladesh. Nevertheless, the ability to source a range of products from Bangladesh, was rated highly, with a description of a first tier of firms engaging with buyers directly. In addition to key informant interviews undertaken with experts in the sector, industry sources were also reviewed in order to garner information related to the relative strengths and weakness of Cambodia and Bangladesh with regards to productive capabilities. These are summarised in Table 6 below.<sup>112</sup>

**Table 6: Respective Country Capabilities**

	Bangladesh	Cambodia
Main Products	T-Shirts; Pullovers; Sweatshirts; Trousers; Blouses; Denim Jackets; Outerwear	Sweaters; Suits; t-shirts Sportswear; Casualwear
Factories/Mills	4,500 factories 400 textile mills	558 factories

<sup>111</sup> For example, Tesco UK has established Tesco international sourcing which supplies all stores globally, but in addition sources direct from factories. This retailer sources products from both sectors analysed in this thesis.

<sup>112</sup> See Appendix 3.

Strengths	Abundant cheap labour; all factories now inspected for safety; Greater available capacities; Exports to EU duty free wherever raw material originates (except China).	Abundant cheap labour; DFQF main markets; ILO BFC; Good transport links to regions textiles producers.
Weaknesses	Reputation damaged by fire and safety issues; Produces mainly low cost basis products; Less than 1% of world spinning and weaving capacity; Dependent on sensitive global market for raw material; Lack of infrastructure – congested roads, unreliable power supplies, adds to lead times; Public power supply can be erratic; Strikes and industrial unrest damage delivery schedules, forcing buyers to use expensive air cargo.	Limited capacity; Labour shortages and frequent strikes; No textiles production; Human rights issues; Lack of skills and high labour mobility.
Opportunities	Scope to produce higher-priced more fashion-oriented products; Potential to target new export countries like China; Ongoing building and safety investment could lead to new industry model; Potential for improved productivity.	Increasing productivity; BFC is a selling point; Infrastructure development to link regional supply chains; May benefits as producers and buyers shift their supply chains away from China
Threats	Companies will source elsewhere if safety and compliance issues aren't resolved; Competing for business relocating from China, but so are Vietnam and Cambodia; Much remains to be done to ensure long-term legacy of Accord and Alliance – including role by government.	Salary disputes could lead to increases in the minimum wage; Companies will source elsewhere unless labour unrest isn't resolved; May soon LDC status through graduation; Increased competition; Strong reliance on LDC status; Lack of a textiles policy could lead to problems as the sector grows Weak rule of law, poor infrastructure, corruption.
Trade Policy	Duty free on RMG to India DFQF to China and South Korea Signed the Trade and Investment Cooperation Forum Agreement with the US to restore preferential access in the future	DFQF access to the EU market under the EBA regime Preferential market access in the US
Average cost to export	\$1281 per container, based on a 20ft container	\$795 per container, based on a 20ft container
Average lead time to export	25 days	22 days
Textiles	Cotton, cotton blends, polyester fabrics, man-made filament fabrics, viscose filament filaments, man-made spun yarns	Produces a small amount of silk yarn

Source: Adapted from "Just in Style", Country Profiles, accessed 06 September 2015; includes results from key informant interviews (Appendix 3).

### 5.3.4 Comparative Aspects for Analysis

Because the approach adopted by Cambodia towards GVC integration was facilitative, it follows the typical policy prescriptions pursued in view of the automaticity of knowledge spillovers. In contrast, the comparator case-study of Bangladesh, adopted a more directive approach towards GVC integration; implicit in this approach is the rivalrous nature of knowledge spillovers. It is therefore used as a comparator to Cambodia in order to trace the causal mechanisms from external governance, influence on internal governance structures and subsequent learning by

doing and upgrading processes. In view of our starting point being the rivalrous nature of knowledge spillovers, it leads us to focus on the specific efforts undertaken by the state in order to induce and sustain learning by doing processes further to GVC integration.

## **6. Learning by Doing in the Textiles and Clothing Value Chain: Cambodia**

### **6.1 Introduction**

In view of how Cambodia is positioned within the textiles and clothing GVC, in this Chapter learning by doing and subsequently, upgrading process are analysed. The results derived from the structured case-study analysis presented in this chapter demonstrate how the ascendency of tiers of suppliers within the industry, coupled

with the facilitative approached adopted by Cambodia, has resulted in constrained learning by doing and upgrading processes.

Although the hypotheses generated from the GVC literature are suggestive of a certain degree of automaticity in relation to product and process upgrading processes within buyer-driven GVCs, they are subjected to greater empirical scrutiny in this Chapter. In view of the interaction between external and internal governance structures, the specific transmission mechanisms through which learning by doing and upgrading processes have occurred, or been constrained, are identified.

In order to set up the parameters of the analysis undertaken, we first discuss external governance structures. Within this discussion we focus on the nature of the GVC integration and classify the approach as facilitative. We draw attention to public policy considerations relevant during the period of FDI-led GVC integration. We then proceed to describe the nature of relationships between firms operating within the sector and type of GVC governance structure in operation. Identifiable learning by doing processes are described, beginning at the firm-level, moving towards the sectoral and societal levels. In order to do this, elements of a nascent national innovation strategy are identified and attention drawn to more recent policy developments.

The evidence presented in this chapter shows how the facilitative rather than directive approach to GVC integration - a key difference between Cambodia and Bangladesh - has resulted in a limited ability to influence internal GVC governance structures and hence generate and sustain learning by doing processes in line with the trajectory envisaged by Nelson and Pack (1999). These findings run contrary to those anticipated in view of the automaticity of knowledge spillovers in view of engagement with the modern export sector. They result from narrow task specialisation within the CMT node of production, coupled with the absence of effective coordination mechanisms and more directive external governance structures.

## **6.2 External GVC Governance**

The entry point of integration with the textiles and clothing GVC and Cambodia's more liberal outward orientation which began in the 1990s, was underpinned by a new political bargain, with the US as the major backer. The process of FDI-led integration with the textiles and clothing GVC which to some extent was enforced, was very facilitative.

### **6.2.1 Management of Trade and Macroeconomic Context**

The arrival of the UN peace keeping forces (UNTAC) in the early 1990s was a crucial turning point in macroeconomic policy-making in Cambodia. This is because UNTAC brought with it a huge influx of US dollars, estimated at nearly US\$1.7 billion (Muqtada and Ung, 2013). This economic shock which, together with the subsequent flow of other private transfers via overseas development assistance and FDI, precipitated the growth and consolidation of the US dollar as the dominant currency in operation.<sup>113</sup>

Essentially, Cambodia relinquished the role of rehabilitation and reconstruction to the UN in the signing of the Paris Peace Accords in October 1991.<sup>114</sup> Subsequently, a consultative body which comprised both donors and the government managed the transition from a command economy to a more laissez-faire capital economy. This policy shift towards an open economy marked a substantial break with the closed economy period of 1975 to 1989, further to independence from France in 1953 and the two previous eras of the Sihanok regime (1953-70 and the Khmer Republic (1970-1975).<sup>115</sup>

Under the UN period, which ended with democratic elections in 1993, the state monopoly on trade was abolished and a foreign investment law brought into force. A comprehensive macroeconomic reform programme including a structural adjustment programme was implemented; this included tariff reductions, as Cambodia began to be granted Most Favoured Nation (MFN) treatment by the US, and DFQF by the EU. A key goal of this programme was to convert a few state-owned enterprises (SOEs), which produced textiles and clothing apparel, into a foreign-owned, export-orientated industry. Hence, as discussed by Wells (2006), the US-Cambodia agreement was built

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<sup>113</sup> Muqtada and Ung (2013) provide a detailed account as to why this is the case.

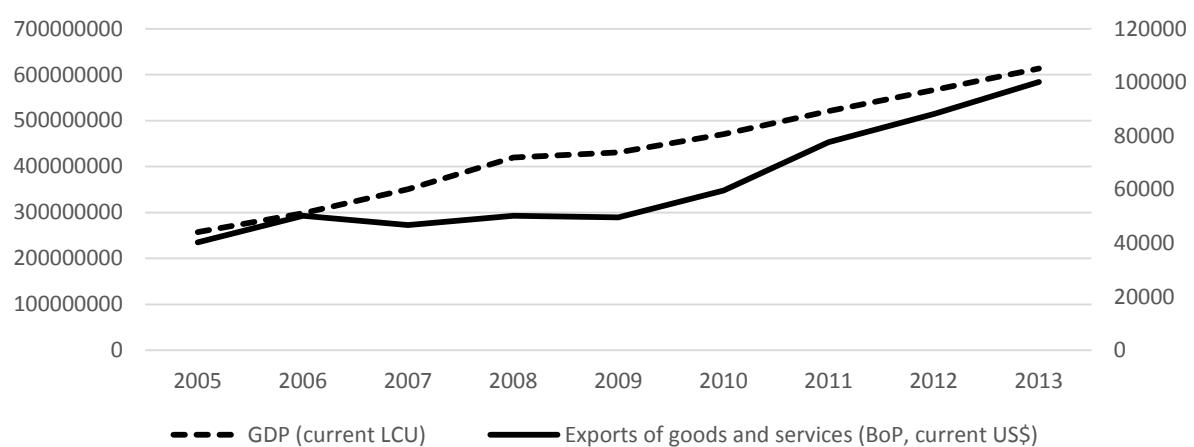
<sup>114</sup> Chhair and Ung (2014a).

<sup>115</sup> *Ibid.*

on a neo-liberal restructuring agenda: in return for increased quotas, Cambodia had to agree other concessions including abolishing import licences and allowing imports of inputs into the sector duty-free, as well as providing tax incentives for FDI (Wells, 2006: 365).

Representing 14 percent of Cambodia's GDP, the garment industry has been the single largest foreign exchange earner for Cambodia for at least a decade (Ear, 2013). The industry accounted for around 15 percent of GDP in 2010, and constituted 50 percent of manufacturing employment, with the total value of exports in 2010 US 3,013 million, or just over US 3 billion (Asuyama and Neou, 2014). Growth in GDP has been impressive and in this respect (Figure 2), Cambodia is considered a star performer compared to other post-conflict economies (World Bank, 2009).

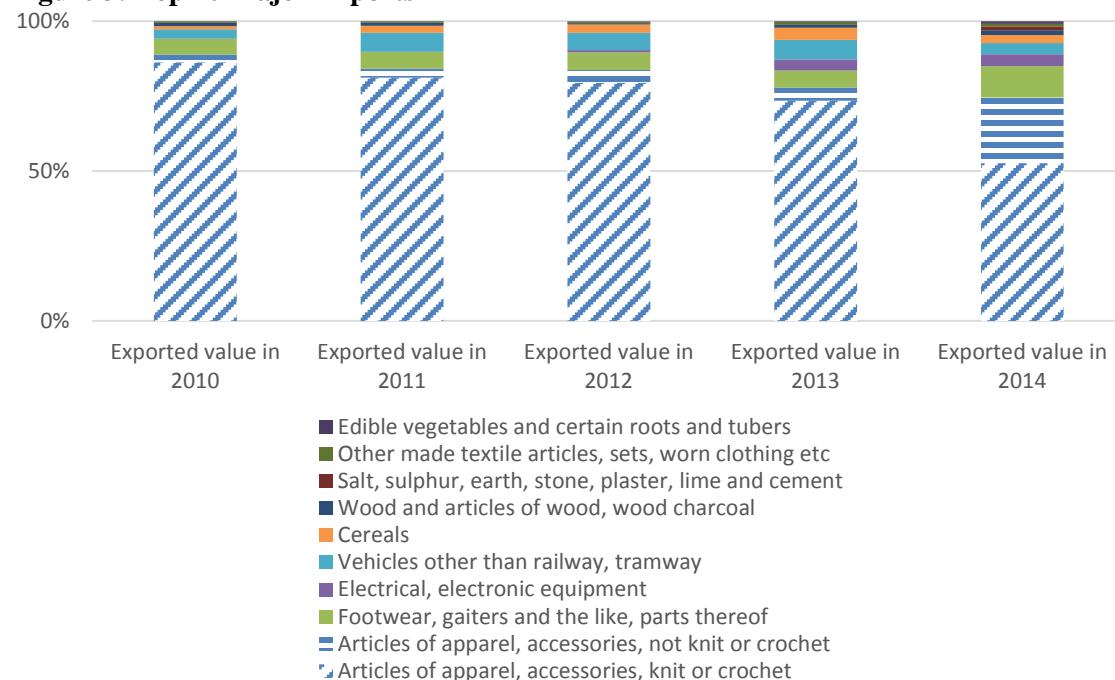
**Figure 2: Gross Domestic Product (LCU 000's) and Exports (US\$'000)**



Source: World Development Indicators, accessed 27 June 2015; GDP expressed in local currency units (LCU); Cambodian Reil.

Most of Cambodia's exports are mainly destined for the US, which accounts for around two-thirds of total exports. The EU accounts for the majority of the rest of exports, followed by Canada, which like the EU also offers a GSP scheme – unavailable to Cambodia in the US market (Asuyama and Neou, 2014; UNDP, 2009). Knit crocheted articles of apparel have comprised the largest share of Cambodia's exports since the industry's inception, however, more recently not knitted or crochet products have grown (Figure 3). The emergence of other sectors is clear including, footwear, electrical equipment and vehicles.

**Figure 3: Top 10 Major Exports**



Source: ITC TradeMap, accessed 25 June 2015; units in US\$ thousand; trade mirror data used from 2012

Trade policy is liberal, with low average tariffs on imports into Cambodia agreed as part of Cambodia's accession to the WTO in 2004. Although Cambodia's bound tariff rate on manufactured products is 17.7 percent, its applied rate has declined from 16.7 in 2001 to 9.6 in 2008 (the most recent year for available data).<sup>116</sup>

Use of an auction system is made to buy and sell foreign currency reserves. A managed exchange rate uses official and market-determined rates with the government monitoring divergences between the two rates so as to keep these as low as possible. Most transactions carried out in the textiles and clothing industry use US dollars, which compounds the challenges of a highly dollarized economy. The challenges this situation posed were recognised most notably in view of the GFC of 2008.<sup>117</sup> Though the longer term objective includes de-dollarization over time, as confidence in the country's macroeconomic management increases (Hill and Menon,

116 World Development Indicators accessed 30 July 2015.

117 Because of fears of currency flight, the government engaged in the process of discussing policy measures such as improving banking supervision, increasing commercial banks liquidity and pursuing an exchange rate of a managed float and hence maintaining a stable exchange rate.

2014),<sup>118</sup> it remains unclear how transactions within the sector will be managed with this objective in mind.

### **6.2.2 FDI-Led Integration**

As discussed by Keane (2012), a highly liberal approach was adopted in Cambodia in relation to engagement with the textiles and clothing GVC particularly compared to Bangladesh. However, what is less well known within the existing literature is how this approach was enforced as part of a new political settlement. Most commentators understand the US-Cambodia Bilateral Textile Agreement as being enacted so as to prevent labour rights abuses and a race to the bottom. According to Wells (2006) this agreement was also part of a bargain, within the broader context of trade and investment reform processes undertaken further to the creation of the new Cambodian state architecture from 1994, which marked the end of the civil war.<sup>119</sup>

Investors initially came to Cambodia from other parts of Asia which had already reached their quota limits for garment exports to the US and the EU (Wells, 2006). This was because under the US-Cambodia bilateral trade agreement agreed in 1999, Cambodia was not subject to the quota limits under the MFA or its successor the ATC. In addition to the locational advantage conferred to Cambodia because of these arrangements, others such as Asuyama et al. (2012) posit that the East Asian crisis which occurred in 1997 also served as a push factor for investors to relocate to Cambodia, despite the coup d'état which occurred around the same time.

Hence, FDI destined for Cambodia during the early 1990s came mainly from other East Asian partners, including Hong Kong, Taiwan, Malaysia and Singapore (Bargawi, 2005) in spite of a tense political situation. FDI flows as a percentage of GDP have continued to grow as shown by Table 7, with a notable increase in outflows. According to the RGC (2013) Cambodia received annual average FDI flows of US700 million per annum during 2008-2012 which resulted in the annual creation of approximately 20,000 new jobs.

**Table 7: Foreign Direct Investment, net inflows and outflows (% GDP)**

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<sup>118</sup> There are also efforts to shift consumers towards use of the riel rather than the dollar as their preferred method of payment (Pilling and Peel, 2014).

<sup>119</sup> Although tensions continued up until 1997 when a coup d'état was staged, and subsequently a new political bargain struck.

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Foreign direct investment, net inflows (% GDP)	6.0	6.6	10.0	7.9	4.9	6.5	6.2	10.3	8.8
Foreign direct investment, net outflows (% GDP)	0.1	0.1	0.0	0.2	0.2	0.2	0.2	0.3	0.3

Source: World Development Indicators, accessed 25 June 2015

Cambodia has benefitted from the strategy of MNEs within the region to adopt a ‘China plus One’ strategy, as well as from the move towards a ’Thailand plus One’ strategy (Hill and Menon, 2014). More recently, investment in the sector has been destined from neighbouring countries such as China, Taiwan Province of China, Republic of Korea, Hong Kong- China, Malaysia and Singapore (UNCTAD, 2013). It is estimated that investment from China accounted for nearly half of all FDI from 1994 and 2009 (Nyíri, 2012). Hence, China has now become the largest source of capital in Cambodia.

This influx, which began in the late 1990s, has been described as fundamentally altering the political economy of Chinese ethnicity in Cambodia: the Sino-Khmer are emerging as middlemen both between Chinese capital and the neo-patrimonial Cambodian state, and between Chinese capital and Khmer labour (Nyíri, 2012). Moreover, as factories move with their owners and managers, from China to Cambodia, they can benefit from new citizenship entitlements (Nyíri, 2012).

### 6.2.3 Facilitative Approach

Factors to attract FDI into the sector include the permitting of 100 percent foreign ownership and the ability to import capital goods without duty and other tax incentives. As discussed by UNCTAD (2013), Cambodia has one of the most liberal investment regimes in developing Asia. Incentives include a 9 percent concessionary corporate tax, tax holiday of up to 8 years, tax exemption for reinvestment, import duty exemption, and export tax exemption (Asuyama and Neou, 2014). Apart from land ownership, domestic and foreign investors are treated equally. The total value of tax incentives offered to investors in 2009 was estimated to be approximately US\$100 million a year (Naron, 2009).<sup>120</sup>

According to Nyíri (2012), FDI into garment factories represents around 30 percent of Cambodia’s total stock.<sup>121</sup> In comparison, according to UNCTAD (2013) out of total

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<sup>120</sup> The minimum investment capital in order to benefit from incentives in 2009 was around USD 0.5million.

<sup>121</sup> This estimate is thought to refer to stocks, rather than flows; see Nyíri (2012).

inward FDI stock, the manufacturing sector represents one-third compared to the garments and footwear industry which makes up more than two-thirds (i.e. accounting for one-fifth of the total FDI stock).

A number of bilateral investment treaties (BIT) are in place, with ongoing discussions with the US for a BIT. The Council for the Development of Cambodia (CDC) oversees investments. Investment incentives are not tied to outcomes, such as employment or skills development. Hence, neither under the MFA quota system, nor more recently, has a strategy of managing rents strategically been pursued. As a result, the generous tax incentives provided to garment firms in Cambodia have been criticised as attracting footloose industry and not contributing to long-term productive investments.

Most firms interviewed (25 out of 28) by Asuyama and Neou (2014) regarded tax holidays as an incentive to locate their production in Cambodia; these findings were corroborated by firm-level interviews with firm managers. Some revisions were made to the sub-decree of 2003 to update the 1994 Law on Investment, but generally incentives are generous and there is scope for direct negotiation with the government in view of specific company needs.<sup>122</sup> Negotiations can take place on an individual firm-level basis, as well as collectively through the Garment Manufacturers Association Cambodia (GMAC) - the private sector organization established to represent the industry initially under the MFA regime.

Investors are free to exit from a venture in accordance with the Investment Law, so long as the CDC is informed and all obligations including those due to the Ministry of Finance, settled.<sup>123</sup> Once the investor has been officially allowed to dissolve the enterprise, the remaining assets can be transferred overseas or re-used in Cambodia. Hence, firms can dissolve and re-open so long as the CDC signs off and statutory duties are met.

#### **6.2.4 Public Policy Considerations**

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<sup>122</sup> The Law on Investment introduced in 1994 provided for investor incentives and also effectively enabled Cambodia to become marketed to investors.

<sup>123</sup> It is necessary to obtain a tax certification from the Tax Department in this regard. See UNCTAD (2013b).

Although Cambodia maintains a highly liberal and open trading environment, as an economy it still relies disproportionately on trade taxes as a source of government revenue; trade taxes - in all forms - contribute over half of the government's total tax revenue (Hill and Menon, 2014). Out of this, customs revenue comprise a substantial share. It was estimated during field-work that the garment industry contributed almost 70 per cent of total customs revenue (\$575,000).<sup>124</sup>

Although the sector doesn't contribute in the form of indirect taxes such as value added tax (VAT), it does pay import and export duties, the sum of which in 2011 was estimated to be over 20 percent of tax revenue, or approximately 2.3 percent of GDP (UNCTAD, 2013b). Finally, because the garment sector is the largest source of formal employment, and wages are high, direct taxes within the sector are an important contributor to total fiscal revenues (estimated to be \$1.2billion in 2011).<sup>125</sup> As shown by Table 8, the contribution of other taxes is extremely limited.

**Table 8: Tax to GDP Indicators**

	2005	2006	2007	2008	2009	2010	2011	2012
Customs and other import duties (% of tax revenue)	27.1	25.2	25.9	24.0	22.8	22.1	19.3	17.7
Other taxes (% of revenue)	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0
Tax revenue (% of GDP)	7.9	8.2	9.7	10.6	9.6	10.0	10.2	11.6

Source: World Development Indicators, accessed 25 June 2015

As of 2009, the government was still working on the development of competition policy and the establishment of a commercial court. Generally, the regulatory framework remains highly underdeveloped. This is the major difference between Cambodia and its neighbours. Cambodia's pattern of industrial development - led by a labour intensive industry - is similar to that of neighbouring countries in East Asia, but a major difference is that industrial development has been pursued without a strong industrial policy in place (Yamagata, 2006).<sup>126</sup>

Although Cambodia's most recent growth strategy (Phase III of the Rectangular Strategy) specifically mentions the role of small and medium sized enterprises

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<sup>124</sup> This estimate is based on the share of garment exports as a proportion of total (72%) and total customs revenue received of \$575,000 in 2007, according to information received from the Ministry of Economy and Finance obtained during field work.

<sup>125</sup> See UNCTAD (2013b).

<sup>126</sup> Cambodia was drawn into the buyer-driven garment GVC based almost entirely on inward investment (Natsuda et al., 2010).

(SMEs) and introduces a number of measures designed to support them, no restrictions are placed on FDI. Furthermore, no requirements are specified such as the formulation of partnerships or joint ventures with domestic firms. The current objective regarding SMEs development includes the mandate “to upgrade their position and support the integration of SMEs into global value chains” (RGC, 2013: 28). The specific actions to achieve these stated objectives are much less clear.

An absence of effective dialogue mechanisms between public and private sector actors was clear during fieldwork.<sup>127</sup> Although the “Government-Private Sector Forum” (GPSF) discussed private sector development concerns at the highest level and decisions could be translated into formal law making processes, its membership included mainly large foreign invested enterprises and not SMEs.

The development of Cambodia’s first industrial policy is specifically linked to Rectangle III of the policy on *Private Sector Development and Employment* and is intended to “elevate Cambodia’s economy to a higher level in the regional and global value chain” (RGC, 2013: 27). Since this document was published in 2015 and some aspects represent a major change in approach to FDI management and SME development, we review it when we analyse societal wide learning by doing processes.

#### **6.2.5 Elements of National Innovation Strategy**

The role of business association as forming a crucial bridge in terms of public-private interactions and as intermediate institutions performing an integral role within national innovation strategies was not recognised at the time of GVC integration. Cambodia’s most recent growth strategy explicitly refers to growth and diversification in the garment export sector through targeting new markets, increasing domestic inputs and moving into higher value products (RGC, 2013). However, the creation of a national innovations system linked to social economic development objectives remains in its nascence and yet to be fully implemented.

#### ***Role of Business Associations***

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<sup>127</sup> This conclusion is reflected in UNDP (2009).

Although criticised for a focus on big business, the role of the GPSF is viewed favourably by investors as an important device for creating a sense of “security” (UNCTAD, 2013b).<sup>128</sup> This is because, it provides a vehicle for the private sector to raise its concerns directly with the government; since the GPSF is chaired by the Prime Minister the outcomes of decisions made are subsequently known as “prakhas” which means they become a regulation issued by a Minister.

The other largest and most relevant business association in Cambodia is the Garment Manufacturers Association in Cambodia (GMAC). This was established in 1999 and counts 593 different garment and footwear factories operating across Cambodia as members.<sup>129</sup> The establishment of this business association was motivated by the quota management system and at that time the enforcement of a “competitive bidding” process.<sup>130</sup> It has continued to represent the industry since then, though its mandate has not been expanded in major way.

### ***Political Economy Considerations***

With specific regard to political economy considerations, Ear (2013) concludes that the quota system within which Cambodia began its GVC participation made economic rents available and fostered value-enhancing patron-client networks. The role of GMAC in terms of initially managing quota allocation under the MFA regime was therefore instrumental. This process is considered to have been a win-win situation for ‘white hat’ as well as ‘black hat’ interests in Cambodia. ‘White hat’ interests are those that conform broadly to rational-legal modes while ‘black hat’ interests operate via entrepreneurial and personal relationships (ANSA, 2010). Because the interests of ‘black hats’ operating in government are aligned with rent-seeking activities, ‘white hat’ interests - which are more progressive - had to counterbalance them.

The garment industry not only makes formal payments, but it is estimated that the sector contributes significantly to informal payments. The industry has been able to develop and expand in spite of rent-extraction because demands have been kept in

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128 This statement was also corroborated by key informant interviews.

129 Cambodian Centre for Human Rights (2014).

130 As discussed by the World Bank (2003), the quota fee was set at \$1.25/dozen exports to the US and \$0.35/dozen to the EU. These fees were collected by the Ministry of Commerce but effectively administered by GMAC through a competitive bidding process (and then transferred to the Treasury).

check, are predictable, as well as facilitative: ‘speed money’ paid to officials can expedite transactions in the industry. This is where informal payments are required so as to facilitate imports through customs as well as expedite processes with government officials more generally.<sup>131</sup>

The context within which the garment industry operates has helped maintain cordial relations with Cambodia’s donors (ANSA, 2010). The garment industry is considered to have avoided complete state capture because of the importance of foreign investors. It is also due to how the sector has been overseen by donors and trading partners such as the US, including through the ILO’s Better Factories Programme.

Nevertheless, as discussed by Un (2013) essentially power in Cambodia is structured, exercised and legitimized via patronage, as most of officials’ revenue is obtained through rents.<sup>132</sup> This rather more extractive role of institutions has obvious implications in terms of stunting rather than facilitating the processes of learning by doing as envisaged by Nelson and Pack (1999) which requires a less predatory institutional link between public and private dialogue mechanisms. It also limits the financial resources available to finance the learning process and address major capability gaps, including through vocational skills and training.<sup>133</sup>

#### **6.2.6 Absence of Backward Linkages**

As discussed by the Konishi (2003) the garment industry relies almost entirely on imported inputs, which account for most costs of production. Around that time, in 2003, not only were changes in the global trading environment a concern, in view of the expiry of the MFA in 2005, but competitiveness challenges were also considered to be exacerbated by a lack of domestic substitutable inputs into the production chain. Whilst cotton projects in Cambodia were sponsored by the Soviets in the 1980s, increased access to sources within regional markets inhibited their development.<sup>134</sup> Subsequently, in view of the end of the WTO MFA provisions, options for

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131 The following questions are asked in the 2009 IDE firm-level survey: 10.7.1 Do you think speed money to government officers is inevitable in order to procure materials smoothly? 1. Yes; 2. No [a115a] 10.7.2. How much speed money do you think is reasonable as speed money when a garment producing company imports a container of fabrics from abroad? \_\_\_\_\_ US\$ [a115b], [a115bsp].

132 More recent processes of corruption have been transferred into a centralized neo-patrimonial form that combines a modern bureaucracy with a traditional system of patrimonialism without a clear distinction between the public and private realms.

133 According to Staritz (2011:119), the local Cambodian elite with funds to invest have acted more like rentiers.

134 See World Bank (Konishi, 2003:32).

reintroducing cotton in view of a push for high value exports were given serious thought.<sup>135</sup> However, the absence of effective marketing structures relative to rice production meant the likelihood of farmers shifting from rice toward cotton were considered unlikely.

As of 2003, a handful of enterprises were directly involved with processing cotton into yarn and fabric, with limited integrated cotton and textile production facilities. Nevertheless, based on the analysis of Konishi (2003) the average total value added for the production of seed cotton was estimated to be \$346 per ton. Because of reduced costs in view of low fertiliser use and labour inputs in China being four times that of in Cambodia, the conclusion derived from this analysis by Konishi was that conditions may be ripe for the production of cotton for vertical integration into the textile and garment industry.

At that time, the major supplier of cotton into Cambodia<sup>136</sup> was China, in addition to being the main source of equipment for the industry. Imported cotton was estimated to be \$1,112/ton compared to a potential local cost in Cambodia, at a yield rate of 1.2 tons of seed cotton per hectare, of around \$346/ton (*Ibid*). It was noted that “the ability to deepen the supply chain to integrate cotton production into export orientated textile and garment sectors in Cambodia will be, in part, a function of the level of investments made to strengthen the human capital of the country” (Konishi, 2003: 42). These recommendations however, were not adopted.

To date, the export-orientated industry remains within the CMT node of production and dependent on imported inputs. However, the range of import partners has become more diversified over time, including China, Taiwan, Hong Kong and other members of the Association of Southeast Asian Nations (ASEAN).<sup>137</sup> China has overtaken previous suppliers such as Hong Kong, in the last ten years.

### ***Competitiveness Effects***

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<sup>135</sup> In fact, a number of conventional case-study based value chain analysis across the following sectors were reported in Konishi (2003) including rice, cotton and its potential integration with the garment sector, tobacco, garments, the motorcycle industry and canned milk.

<sup>136</sup> CWC Ne40/1 is specifically mentioned.

<sup>137</sup> See Asuyama and Neou (2014).

A breakdown of the basic cost structure for a pair of jeans produced in Cambodia in 2003 is presented in Table 9. Labour constitutes only 15 percent of the total input, whilst materials and accessories comprise 65 percent. The profit margin is extremely low, estimated to be just 2 percent of the total cost structure for a pair of jeans.<sup>138</sup>

More recently, according to estimates made by UNCTAD (2013b) only about \$2 of the overall typical retail price of \$30.65, or less than 1 percent, of a basic men's cotton shirt produced in Cambodia accrue as profits for firms undertaking the CMT function. Hence, even with Cambodia's advantage in low cost labour (which is becoming increasingly tenuous) profit margins are slim.

	<b>Cost</b>	<b>% of Total</b>
Materials and accessories	\$4.42	65%
Labour	\$1.02	15%
Other inputs	\$1.22	18%
Profits	\$0.14	2%
Total cost	\$6.80	100

**Table 9: Cost Structure for Jeans**

Source: Adapted from Konishi (2003)

This challenge has been accentuated in recent years. Using the residual from the share of textiles imports in garments exports as a proxy for the value added, UNCTAD (2013b) describes how Sri Lanka, Malaysia and Cambodia started with similar shares of value added in the textiles and clothing sector during the early 2000s, but then subsequently diverged. For example, Sri Lanka has experienced modest growth in value added in exports, whilst Malaysia experienced a significant growth of about 20 percent, particularly in the last 5 years. In comparison, according to their estimates (using net export data analysis: exports minus imports) Cambodia's share of value added has declined. Their reasons posited for this decline include the absence of a local textiles industry to supply inputs; the logic being that these inputs could be supplied at lower cost, over time, in view of productivity increases.

This aspect of competitiveness thus serves to reinforce the role of backward linkages within the sector as a key driver of competitiveness.<sup>139</sup> Given these issues picked up

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138 Unfortunately, it was not possible to update these estimates during field work.

139 For example, it is recommended that deepening the supply chain to integrate cotton and textile production with the garment industry may offer a solution to reduce overall costs of production and thus enhance the competitiveness of finished products in the garment and textile industry (Konishi, 2003: 68).

and elaborated upon as far back in 2003, the ability of Cambodia to remain competitive is likely to be explained by deepening cross-border linkages between China and Cambodia, and more recently Vietnam. This includes vertical integration between textiles producers and clothing manufacturers, across borders.<sup>140</sup>

Bonded ASEAN warehouses, for example, have been established by industry associations in order to reduce costs and reap economies of scale, as well as reduce the costs of cross border trade within the region (Staritz, 2011). In view of these deepening cross-border linkages Cambodia has been referred to as akin to “a province in China” in view of the nature of its more contemporary integration with the textiles and clothing GVC, which is increasing driven by Chinese investors.<sup>141</sup>

#### **6.2.7 Sales on the Domestic Market**

In view of the challenge of fostering backward linkages in Cambodia, consideration of forward linkages such as domestic market sales assume a particular importance. However, just as there has been a policy vacuum in relation to domestic backward linkage development, this has also been in the case with regards to forward linkages such as marketing, including domestic sales.

Whilst the process of governing the market invariably involves aspects of a competition policy, the developmental state literature draws attention to how policy will be highly context and temporally specific; its necessity though in terms of promoting domestic capital accumulation processes, is recognised. Unfortunately, this necessity has not been recognised in Cambodia. For example, Hammer (2004) discussed in Wrobel (2014) was of the view that Cambodia needed an ant-trust law “like a fish needs a bicycle”.

More recently, the challenges of balancing the competitiveness effects of large firms within the market have become more pressing. As discussed by Cuyvers et al. (2011) the presence of foreign firms driving indigenous firms out of business because of unfair practices is increasingly being recognised. Whilst consumer protection legislation has been passed, Cambodia still lacks public enforcement mechanisms.

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140 Since it is costly for firms to maintain an inventory of fabrics, which increases lead times.

141 According to an interview with Markus Naumann, the regional vice president of Groz-Beckert, a German company that provides parts for textile and sewing machines and reported in Robertson and Sotheare (2014).

There is an absence of data on imports of garments for domestic consumption since imports are not officially registered.<sup>142</sup> Although the proportion of domestic firms within the overall sector is marginal, a rather substantial informal market exists for sales on the domestic market. However, unlike neighbouring economies, such as Vietnam where most production of garments for domestic sales are undertaken by the informal sector (household) firms, the available evidence suggests that most sales on the domestic market result from employee theft.

For example, the Garment Manufacturers Association of Cambodia (GMAC) estimates that as much as three percent of garments made in factories is stolen; items locally-manufactured for GAP and other international companies have become a staple of clothing stalls at Russian market and other Phnom Penh shopping centres.<sup>143</sup> The need to prevent theft at the factory level is considered by the Ministry of Commerce to be even more of a threat to the industry's survival than labour strikes.<sup>144</sup>

An alternative perspective, however, posits that sales on the domestic market are filtered through a system of patronage between officials in league with factory managers. For example, in an interview undertaken in 2008, Chea Mony, president of the Free Trade Union, when asked to comment on government initiatives to reduce sales on the domestic market, described how the majority of stolen garments come from Chinese managers, with only a small percentage coming directly from Cambodian workers.<sup>145</sup> Preventative measures to reduce these sales on the domestic market have been called for by the government, but in practice it remains unclear what types of policies might achieve this objective.

#### **6.2.8 Human Resources and Labour Market Policy**

Not only was the FDI-led integration process with the textiles and clothing GVC notable in view of the absence of an industrial policy, but Cambodia also effectively lacked a human resources policy. In comparison, within the new growth strategy (RGC, 2013:108), the following are described as priorities: developing human resources, focusing on the technical capacity to respond to the needs of socio-

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142 Eurocham (2014).

143 Sophal and Kimsong (2008).

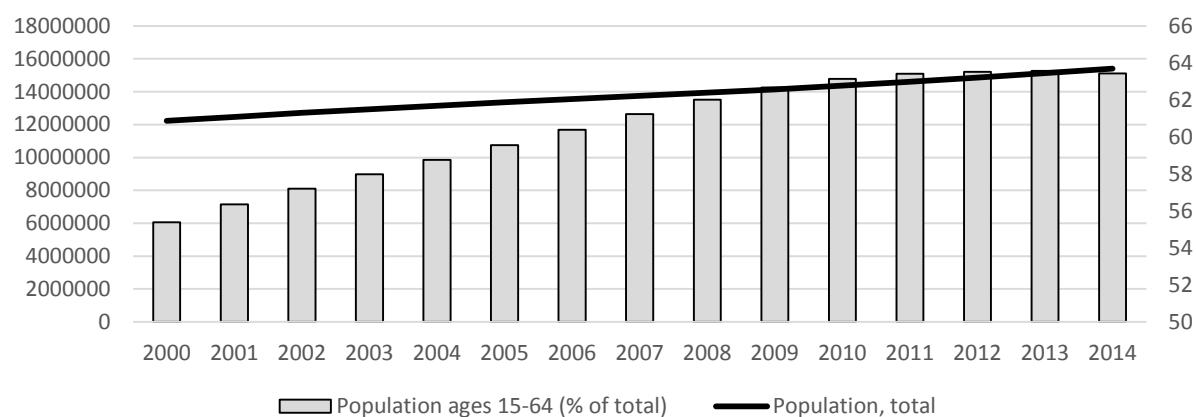
144 (*Ibid*).

145 as reported in Sophal and Kimsong (2008)

economic development, especially through promotion of skills and professional training and retraining including apprenticeships, while encouraging private sector and hence promoting higher productivity and incomes for both workers and employers. This is in addition to streamlining education, technical and vocational training sectors; developing frameworks and standards to facilitate student transfers from technical and vocational training to higher education.

Clearly, this is a tall order for implementation. However, it relates to a shift within Cambodia's growth strategy from an 'emphasis on physical capital formation' towards 'human capital development'. Cambodia's growth in population has slowed to 1.8 percent from 2.2 percent, similarly the share of working age population as shown by Figure 4.

**Figure 4: Total Population and Working Age Population**



Source: World Bank, World Development Indicators, accessed 25 June 2015

The policy document explicitly mentions supporting the Better Factory Programme (BFC) and improving the labour market. How this latter point will be put into practice, however, remains rather unclear: the BFC Programme was intended to be self-sufficient by 2009, and no longer in need of donor or government support, as discussed at some length in UNDP (2009). Finally, the link between labour market and investment policies remains unclear: investment policy has not been leveraged to facilitate learning and capabilities development, or knowledge transfers.

#### ***Labour Market Regulation***

There remain challenges regarding the institutionalisation of labour rights in the sector. These include some of the issues discussed by Keane and Ratha (2009) such as

more than one union operating per factory, with political divisions becoming apparent. As argued by Natsuda et al., (2010) although labour standards in Cambodia are generally deemed to be a positive competitive factor in the Cambodian garment industry, adherence has not necessarily improved the global competitiveness of the industry. Conversely, they may have served to inhibit rather than facilitate the upgrading process through raising barriers to entry for domestic firms.

The RGC (2013) provides for the establishment of a mechanism to conduct regular and necessary studies so as to provide recommendations for the review and setting of minimum wage by region and sector in line with ‘national economic conditions’.<sup>146</sup> Setting wages in line with ‘national economic conditions’ however, is not the same as ensuring remuneration matches skills development, as envisaged within the Nelson and Pack (1999) model.

### ***Vocational Skills and Training***

Incentives for upgrading technological capabilities within the sector remain limited. For example, the BFC programme could link labour rights compliance to productivity improvements and skills development; the GMAC, could assist in this process as a critical institutional link. However, this would require less of a facilitative approach towards integrating with the GVC and more of a directive approach. Currently only two formal training institutes are in operation: the Cambodia Garment Training Centre (CGTC) and the Cambodia Skills Development Centre (CASDEC). However, these have been discussed as have a rather more limited focus on developing entry level skills for women, than improving workers skills over time (Savchenko, 2015).

More crucially there remains an absence in terms of an effective coordination mechanism between these, current business associations and the education system.<sup>147</sup> Staritz (2011: 125) concludes that: “it is central that the government works together with GMAC and the clothing factories to develop vocational training centres (for technical and product development) and design, middle management skills.” The number of students enrolled in vocational training has increased as shown by Table

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<sup>146</sup> During field work in 2009, it was estimated that Cambodia needs to provide jobs to almost 300,000 new entrants to the labour market each year; these estimates are based on ILO (2007). Just to further put things into context, the garment industry is the country’s largest employer after the government (Nyiri, 2012; Tong, 2010). It also pays more, on average, than the typical wage of civil servants (Yamagata, 2006).

<sup>147</sup> These include the Cambodia Garment Training Centre, which offers training in basic sewing skills.

10. There are clearly some data issues, however, as reflected in the enrolment numbers for primary education.

**Table 10: Education Enrolment Indicators**

	2005	2006	2007	2008	2009	2010	2011	2012	2013
School enrollment, primary (% gross)	133.5	133.5	134.5	131.2	130.5	129.9	126.4	124.2	124.5
School enrollment, secondary (% gross)	..	39.4	42.4	45.0	..	..	..	..	..
School enrollment, tertiary (% gross)	3.3	5.6	7.3	9.1	11.7	14.1	15.8	..	..
Secondary education, vocational pupils	..	12935.0	18920.0	21167.0	..	..	..	..	..

Source: World Bank, World Development Indicators, accessed 25 June 2015

Note: Government expenditure per secondary student (% of GDP per capita) is not available

### 6.2.9 Summary of External Governance

Engagement with the textiles and clothing GVC took place within the context of a complete absence of industrial policy and NIS. The approach was facilitative and underpinned a new political bargain. The potential for backward linkage development between the textiles and clothing industry was, and remains, underexploited; this is also the case for forward linkage development into domestic sales and marketing.

Business associations, in the past performed important roles supporting quota management in an open auction system. They have not yet been effectively integrated into an overarching innovation strategy. Finally, at the point of GVC integration, an effective human resources policy was absent. The implications of the facilitative external governance structure in Cambodia on internal governance structures between firms in Cambodia are explored in the next sub-Section.

## 6.3 Internal Governance

In addition to the highly asymmetric nature of trading relations in view of low producer capabilities, other important barriers to entry have shaped the GVC integration process and the industry's development in Cambodia. These include adherence to labour standards, initially enforced under the US-Cambodia 1999 agreement and then subsequently as part of retailers' corporate social responsibility

policy. Barriers to entry are discussed first, followed by a description of internal GVC governance structures.<sup>148</sup>

### **6.3.1 Barriers to Entry**

Because of adherence to labour standards by Cambodia and the political bargain struck in 1999, large buyers such as Nike and Disney began to source again from Cambodia in 2004. An increasing concentration of buyers is posited thereafter to account for the majority of Cambodia's garment exports. For example, it is estimated by Wells (2006) that around 15 international buyers accounted for 45 percent of Cambodia's exports by mid-2000. These buyers in turn account for large market shares, globally.

The “Nike Model” is one in which actual assets held in other countries are minimal, with a reliance on contract manufacturers.<sup>149</sup> Following child labour issues in the early 1990s, Nike started disclosing the names and addresses of all their contract manufacturers. In order to ensure compliance at the country level, the BFC was pioneered in Cambodia. It was the most comprehensive and systematic monitoring effort governing any apparel sector prior to its implementation and involves a computerised information management system that buyers and suppliers can access.<sup>150</sup> It has assisted in terms of establishing compliance mechanisms and a form of competitive advantage for Cambodia.

For example, in a recent interview with a buyer regarding sourcing strategies within the sector it was noted that whilst “fast fashion” brands, such as H&M and Gap, were chasing cheaper production costs across the region, including in Burma, others are looking for more than just cheap labor; having learnt from the experience in Vietnam and Cambodia.<sup>151</sup> These aspects have been referred to in the preceding chapter, and confirm what is described by UNCTAD (2013b) as moving beyond consideration of competitive advantage based on low labour costs, towards compliance with labour and environmental standards.

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<sup>148</sup> These aspects have been explored briefly in Keane (2012) which described the value chain as very much buyer-driven. However, more detailed firm-level analyses are referred to in this chapter.

<sup>149</sup> Otsubo (2016).

<sup>150</sup> Savchenko (2012).

<sup>151</sup> Robertson and Sothear (2014).

However, while some major buyers actively work with the BFC in addressing workplace conditions; the problem remains that too many factories have no active buyers to pressure them into improving conditions (Mark, 2012). Many buyers have not joined the initiative, which means the BFC “does not possess complete information about which buyer is sourcing from which factory” (*Ibid*: 23).<sup>152</sup>

Although the US-Cambodia textile agreement prompted best practice and adherence to labour standards it invariably raised barriers to entry for local firms. In turn, the low level of domestically owned factories has reduced their bargaining power, leverage and autonomy overall vis-à-vis powerful actors within the GVC (Natsuda et al., 2010).<sup>153</sup>

This includes regarding negotiating and attracting orders, since these decisions are made by parent companies located in headquarters outside Cambodia (primarily Taiwan and China); firms often operate garment factories in other countries too, which means that orders are relatively easy to strategically reallocate (Natsuda et al., 2010). Hence, although competitive advantage has been created within Cambodia regarding compliance with labour standards, as a perquisite to serving its main buyers, such as the US retailer GAP, and is considered by industry representatives and buyers as a “safe bet”,<sup>154</sup> domestic capabilities in relation to flexibility and managing an integrated supply chain remain low, despite two decades of GVC participation.

### **6.3.2 Firm-Level Organisation**

The hub of garment production remains Phnom Penh. Products are subsequently shipped to Sihanoukville - the only deep sea port in Cambodia. As of September 2008 there were 310 garment factories in operation, with around 352,433 workers employed, of which 322,000 are women (91 percent of the workforce).<sup>155</sup> At that time,

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<sup>152</sup> Essentially, buyers, in placing their orders are expected to consult the BFC report on candidate factories to ensure that a particular factory complies with labour standards. The fee of \$750 paid for these services is considered lower than buyers would have paid themselves to monitor or compared to the hiring of a local auditing firm. Hey also participate in an annual buyers' forum (Mark, 2012).

<sup>153</sup> The experience of Cambodia is unique in the sense that the US-Cambodia trade act made additional preferences contingent on adherence to labour standards monitored by the International Labour Organisation (ILO). Between 1999 and 2005, exporters undertook mandatory ILO labour standard monitoring in order to access the US market. This was the only agreement of its type and was renewed periodically until 2004, as the MFA era ended in 2005. An increased quota for Cambodia was made contingent on adherence to labour standards, with annual 6 percent quota uplift (Asuyama and Neou, 2014).

<sup>154</sup> Result from key informant interviews (Appendix 3).

<sup>155</sup> Based on production line data.

because of the effects of the GFC, anecdotal evidence suggested a number of garment factories had closed since the beginning of 2009.

However, production line data obtained from the Ministry of Commerce and presented in Table 11, did not yet reflect such a trend: 25 factories were in the process of closing as of September 2007, and this was also the case in September 2008. Although this number may seem high, results from discussions with firms and other key informants, indicated the widespread practice of taking advantage of tax incentives through closing and reopening under different names (hence, influencing ‘normal’ firm entry and exit strategies).<sup>156</sup>

**Table 11: Active, Temporary Closed and Closed Garment Factories**

Indicators	Sep-01	Sep-02	Sep-03	Sep-04	Sep-05	Sep-06	Sep-07	Sep-08
Total no. of factories (operating/effectively operating)	188	188	190	212	236	283	285	310
Temporarily closed factories	8	6	7	7	9	10	9	9
Permanently (definitely) closed factories	31	53	60	72	94	97	103	106
Ongoing closures	-	-	-	-	-	-	25	25

Source: Ministry of Commerce; based on production line data as of September for each year.

The majority of firms, 73 percent operate as subcontractors (Asuyama et al., 2013). Most operate as contract manufacturers for major brand names such as Gap, Benetton, Nike, Adidas, Puma, Levis, Dockers and retail chains such as H&M, Zara, Topshop, Marks & Spencer, Mango, Inditex, VF Jeanswears and JC Penney.<sup>157</sup> Some of these buyers also source from Bangladesh. However, a major difference is that an estimated 60 percent of factories in Cambodia operate under a CMT arrangement as subsidiaries of companies based in neighbouring countries such as China, Taiwan Province of China and Republic of Korea (Savchenko, 2015). Hence, Cambodia is very much integrated into a triangular manufacturing network, with HQs based in China and other NICs that organise manufacturing networks on a global scale in order to supply global branded buyers.

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<sup>156</sup> This frequent turnover of firms accounted for more than half of the industry productivity level growth found by Asuyama et al. (2013).

<sup>157</sup> Various sources note that the largest buyer is the US garments retailer, GAP, which accounts for one third of total exports (Staritz, 2011; UNCTAD, 2013). Despite repeated requests, it was not possible to interview GAP (see Appendix 3).

Factories in Cambodia are therefore integrated into the GVC via their parent companies in order to access the supply networks of buyers and input sourcing networks (Savchenko, 2015). There are a number of local, “non-exporter” companies which receive orders via subcontracting arrangements from larger garments factories during peak season (UNCTAD, 2013). However, data limitations mean there are major challenges in confirming whether this role is performed by Cambodian SMEs.

In the original classification of GVC governance defined by Gereffi et al. (2005), a hierarchical type is characterised by a dominant form of managerial control, flowing from managers to subordinates, or from headquarters to subsidiaries and affiliates, which may have a direct ownership link. This structure seems most applicable in view of the nature of value chain governance between Chinese owned firms in Cambodia and their parent companies, in view of their fragmentation processes.

In comparison, the more nuanced definition of a quasi-hierarchical governance structure defined by Humphrey and Schmitz (2000) may be more applicable to the operation of producers located in Cambodia, within the overall textiles and clothing value chain, driven predominantly by Western branded retailers. This is whereby the relationship between firms involves one being subordinated to another such as through sub-contracting. Although more relational types of governance may exist between some tiers of global suppliers, identifying this types is beyond the scope of this analysis.

### ***Growth in Numbers***

Recent years have seen tremendous growth in the number of factories registered in Cambodia. For example, according to UNCTAD (2013b) there were 558 garment factories employing 475,000 people. This is a substantial increase compared to the estimates of Asuyama and Neou (2014) of an estimated 300 factories in operation, which directly employ around 327,000 workers (Figure 5).<sup>158</sup>

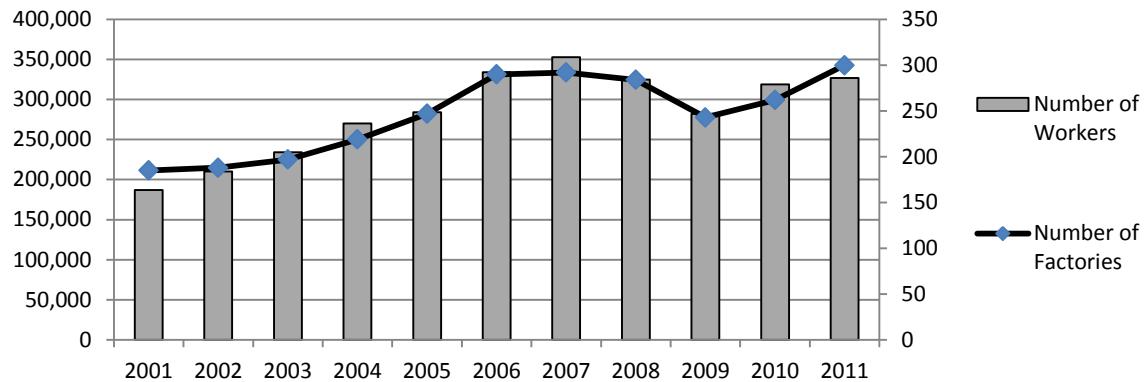
According to the current list of members registered with GMAC suggests there are at least 661 registered firms, employing 536,607 workers; most firms are from China, Taiwan, Hong Kong and Korea; 35 out of the 661 registered firms are 100 percent Cambodian owned, with 11 joint ventures with either Chinese, Korean, Taiwanese or

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158 See Asuyama and Neou (2014).

Japanese firms.<sup>159</sup> This equates to around 7 percent (including joint venture, 5 percent excluding) domestic ownership in the sector at the current time.

**Figure 5: Number of Factories and Employment, 2001 to 2011**



Source: Adapted from Asuyama and Neou (2014).

Note: Based on data obtained from Cambodia's Ministry of Economy and Finance for Exports, and Cambodia's Ministry of Commerce for number of factories and workers.

### 6.3.3 Firm-level Characteristics

According to the estimates presented in Asuyama and Neou (2014) the profit share of firms operating in the sector has increased over time (Table 12). The main reasons for this include an increase in labour productivity. However, it is notable that labour costs per worker have increased considerably more than labour productivity. Unfortunately, though Asuyama and Neou (2014) do not differentiate between firms in terms of their ownership.

**Table 12: Estimated Average Firm Performance between 2002 (Index Year) and 2010**

Indicator	2002 (Base Year)	2006	2010
Gross Product	100	145.1	184.8
Value Added	100	144.4	155.9
Profit	100	149.8	152.7
Number of workers	100	106.7	112.4
Labour productivity	100	135.4	138.7
Labour cost per worker	100	114.5	150.7

Source: Asuyama and Neou (2014)

Note: Data is based on that obtained from the Ministry of Economy and Finance, except labour cost which is based on Ministry of Commerce data; the US garment price is used as most exports are destined to this market, and given that the Cambodian economy is dollarized and most firms conduct business in the US dollar.

Gross product = garment exports/number of factories; Value added = exports – material imports/ number of factories; profit = value added – total payroll/number of garment factories; number of workers = total number of workers/ number of garment factories; labour cost per worker = total payroll of industry; labour productivity = value added/number of workers; material cost share = material imports/garment exports \* 100.

159 See GMAC registered firms [accessed 10 April 2015] (<http://www.gmac-cambodia.org/members/print.php?type=Product&>).

This aspect deserves further attention, since the evidence suggests that the proportion of Cambodian owned firms has declined rather than increased over time. For example, in UNDP (2009) it was estimated that around 10 percent of the industry was wholly domestically owned. This estimate is updated by Asuyama and Neou (2014:38) who note that less than 5 percent of garment factories are owned by Cambodians and is validated by the most recent data available from GMAC.

Whilst this marginalisation process has occurred, the size of firms increased between 2002 and 2008 in terms of capital value added, which nearly doubled (Asuyama et al., 2013). In view of the fact that almost all firms are foreign, with access to best-practice technology much of which is tacit and not embodied<sup>160</sup> and the more hierarchical structure of governance in operation between Chinese owned firms in Cambodia and their parent companies, in the following sub-section we describe the identifiable learning by doing processes in Cambodia. As discussed in Chapter Three, within this type of governance structure knowledge spillovers are posited to flow from the training and turnover of managers and workers (Pietrobelli and Rabotelli, 2011).

## **6.4 Levels of Learning by Doing in Cambodia**

This sub-section is organised as follows. First, we discuss the results of identifying learning by doing at the firm-level. We then describe meso-level and sectoral processes. Within this discussion we integrate the results of analysis of indicators typically associated with the identification of upgrading within the GVC literature, including product, process, functional and inter-sectoral upgrading processes. Finally, we proceed to summarise societal learning by doing processes.

### **6.4.1 Learning-by-Doing at the firm-level**

In this sub-section we address and attempt to control for firm entry and exit (which have been discussed as being motivated by tax incentives), and explore learning by doing processes for firms operating across two periods of time. This approach is considered a valid one in view of investors' motivations and the extent of their social embeddedness. We therefore briefly review the findings of others who have tested both for evidence of learning by doing in the sector and explored differences in TFP. We then proceed to introduce the method devised to test for learning by doing at the firm-level in Cambodia, using secondary data.

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<sup>160</sup>Appelbaum (2008) referred in Natsuda et al. (2010:482).

### ***Review of Existing Literature***

Chhair and Ung (2014) refer explicitly to the literature on earning by exporting, noting that most of the literature refers to domestic firms self-selecting into export markets. They seek to explore whether or not the presence of FDI has subsequently facilitated the entry of domestic firms, through spillover effects. They find that relieving institutional constraints for export firms has positive impacts on the productivity of all firms, including non-export firms, and that there are negative productivity spillovers from foreign owned to domestic firms. They conclude in the case of Cambodia, that the interaction between foreign-owned and domestic firms requires more detailed investigation; in particular to ascertain the extent to which policies aimed at attracting FDI may have negative implications for the development of the domestic manufacturing and export sector.

With regards to the use of more detailed and industry specific firm-level surveys within the textiles and clothing sector in Cambodia, Asuyama and Neou (2014) make use of the firm-level data reported in Yamagata (2006) and test for the influence of variables on TFP for Cambodian garment assembler firms. They pool the sample over two years - 2003 and 2006 - in order to do so. Hence, they do not explore differences between firms in specific indicators between the two different periods (the sample mean is taken over the pooled sample of two years).

They explain that their TFP index is the value-added residual that cannot be explained by the measurable usage of capital and labour. Thus any unobservable or immeasurable factors concerning value-added, capital and labour, as well as management practice, learning-by doing, intangible capital (for example, reputation, brands and know-how) and firm-structure can be included as TFP. The TFP index of each firm is estimated and an OLS regression of TFP on various firm characteristics undertaken, including:<sup>161</sup>

- Years in operation (or firm age).
- Logarithm of total employment.
- Number of export items.

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<sup>161</sup> Calculated using the following variables: value added, input (capital, high-skilled labour, and low-skilled labour).

- Number of export items to US and EU respectively for which a quota is imposed on China.
- Estimated average years of education of operators and helpers.
- Estimated average years of education of supervisors.

They find that between the two periods, the average human capital quality of garment workers improved. This statement is supported by following observations: the estimated average years of education increased from 10.0 to 10.2 for supervisors, from 6.6 to 7.1 for operators, and from 6.3 to 7.4 for helpers. They refer to other data which supports a general human capital improvement in the country, based on the share of population that received no education or below a primary education (which declined from 80.1 percent in 1998 to 64.1 percent in 2008 for females aged 15 and above).<sup>162</sup> An increasing number of garment firms raised the required education level for newly recruited workers: from 1.0 schooling years to 3.8 for operators and from 0.8 to 4.5 for helpers.

The variables found to have a significant effect on TFP by Asuyama and Neou (2014) include:

- Producing items for which quotas were imposed on imports from China.
- Exporting more to the EU market (compared to the US market).
- Having a lower share of material costs.
- Employing employers and helpers with higher education.
- A dummy variable for the year 2008 which is intended to capture all improvements regarding common industry wide changes.

They note that although the coefficients are not statistically significant, worker's experience and firm's years in operation indicate that the learning by doing effect is associated with higher firm TFP. However, one of the major limitations with their analysis is an inability to control for firm ownership. There are also considerable difficulties in differentiating their sample by an ownership variable and distinguishing between changes between 2003 and 2009, because a specific question on the

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<sup>162</sup> The share of those completing primary and secondary school also increased (as we have also described in the earlier sections).

nationality of owners is not asked in the 2009 questionnaire, although it is our understanding that it was in 2003. Finally, there are problems of controlling for firm entry and exit.

### ***Testing for Learning by Doing***

Because of the differences in the questions asked and how data has been recorded by Asuyama and Neou (2014), it is not possible to use their data and differentiate the sample by ownership. Instead, a comparative analysis between firms within the 2009 sample that were also operating in 2003 is possible. This is because a question is asked in the 2009 survey regarding whether or not firms were also operating in 2003.

If learning by doing processes were at play, we would expect firms that have definitely operated across the two time periods to outperform the new entrants across the indicators we have selected as being of interest. Given that firms which do not re-register for tax reasons may have different motivations compared to those that do, analysing the data in this way seems a logical choice. We therefore undertake a comparison-of-means test between firms that we know have definitely produced/exported across the two time periods (2003 and 2009) - called Type 1 firms - compared to those that only produced/exported in the more recent period (2009) - called Type 2 firms.

This type of analysis could help to shed further light on the following overarching research question: what are the identifiable Learning-by-Doing processes, and are these synonymous with the concept of upgrading? In order to answer this question, we have generated sub-research questions and hypotheses below:

- Research Question 1: What are the identifiable Learning–by-Doing processes, and are these synonymous with the concept of upgrading?
- Sub-research Question 1: Are there any differences in the selected LBD indicators between firms that have been continuously in operation between 2003 and 2009 (Type 1) compared to those that have not (Type 2)?

- The null hypothesis is that there are no differences.
- The alternative hypothesis is that there are differences, namely that for Type 1 we can identify superior performance in the selected LBD indicators.

The indicators used and related hypotheses are as follows:

- **Size, number of employees:** Firms continuously in operation are expected to be more productive and employ more workers.
- **Skill of workers:** Firms continuously in operation are expected to employ more skilled workers.
- **Wages:** Firms continuously in operation are expected to pay higher wages.

The indicators selected are based on those which correspond most closely to the process of learning by doing envisaged by Nelson and Pack (1999). A question is asked in the survey regarding whether or not firms are sub-contractors; however, the data is too patchy to use. Finally, we are unable to use the indicator which measures output, in terms of value, because of data limitations between the two groups of firms.

We briefly describe how we have obtained the LBD indicators below:

- **Size:** This has been calculated using question [a91] which is the sum of total workers across employment categories (male, female and foreign) and comprises a numerical variable.
- **Skill of workers:** We used the question on years of experience (accumulated knowledge and experience) required for workers before they are hired, looked at the average result for managers [a103d] and operators [a103b], and created a numerical variable. We also looked at the average education level of employees, and specifically for managers [a102d] and operators [a102b] and used the available categorical variables.<sup>163</sup>
- **Wages paid:** We looked at the average result across workers [a93]; however, the data was too incomplete to make use of. We therefore also looked at the

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<sup>163</sup> Coded as follows: 0. Below primary; 1.Primary; 2. Lower secondary; 3. Higher secondary; 4. Bachelor or higher.

numerical variable of the piece rate for operators and the average share in total remuneration [a94a2].

Table 13 presents the results for the two types of firms we have identified: Type 1: Continuously in operation between 2003 and 2009 (41 firms); and, Type 2: Operating in 2009 (82 firms). For the numerical variables, a difference in means test between the two groups was undertaken using an independent t-test. Results suggest no significant differences between the two groups of firms. This is despite, Type 1 firms being in operation for on average 10.5 years, compared to 3.6 years for Type firms. As firm age is typically used as a proxy for learning by doing, we expect firms in operation over both periods to outperform those only in operation for one period across the variables selected for analysis.

**Table 13: Analysis of Differences between Firm Types and Numerical LBD Indicators**

LBD Indicator	Type of Firm	N	Mean	Std. Dev	T-value for difference in means test
Size (no. of employees)	Type 1	41	1777.90	4062.50	1.160 (0.248)
	Type 2	82	1216.06	1102.50	
Years of experience for managers	Type 1	41	2.88	2.32	0.291 (0.772)
	Type 2	82	2.76	1.90	
Years of experience for operators	Type 1	41	0.97	1.01	0.397 (0.692)
	Type 2	82	0.89	0.23	
Piece rate for operators	Type 1	41	16.12	13.45	-4.26 (0.671)
	Type 2	82	18.05	22.39	

Source: Analysis of the data obtained by Asuyama and Neou (2014).

Note: \* denotes significance at the 5 percent level; \*\* significance at the 10 percent level.

<sup>a</sup>: equality of variances not assumed as Levene's test for equality of variances is greater than 0.05.

However, in view of the more facilitative approach adopted by Cambodia and lack of explicit policy enacted upon the point of GVC entry to address capability gaps the results are not completed surprising. The results question the automaticity of knowledge spillovers and limitations of using firm as a proxy for learning by doing. The insignificance of results may stem from the absence of mechanisms available to translate tacit knowledge into explicit and encoded knowledge forms, hence contributing to broader societal learning by doing through upgrading human capital over time.

The more facilitative approach adopted towards GVC integration does not tie fiscal incentives to outcomes, including those related to industrial upgrading. We have

already described the ease through which firms may open and close with limited restrictions. The results from key informant interviews described how, in order to take advantage of tax incentives available for “new” firms, established ones close down and subsequently reopen. There are twice as many Type 2 firms, which have opened since 2009. Hence, the conclusion drawn from the evidence presented in Table 13 is considered a valid one in view of the results of firm-level and other key informant interviews.

For example, one firm manager interviewed candidly revealed this practice during interviews and cited competitiveness considerations as the prime motivation. Other key informants, including from the Ministry of Commerce, have described how the closing and reopening factories remains challenging in view of prolonging tax exemptions. Factors which motivate this action include the avoidance of higher labour costs in view of seniority benefits for staff employed over a certain number of years. Analysis of other secondary data sources also reveals that most foreign firms (over 62 percent) were established in the last five years; there are only 21 foreign firms that have been established for more than twenty years across all sectors of Cambodia (Chhair and Ung, 2014a).<sup>164</sup>

Although there are no significant differences between the two types of firms, Type 1 firms do seem to employ more workers (size), on average. Their managers and operator also have slightly more experience than the Type 2 firms. However, Type 1 firms also seem to pay on average, a lower piece rate for operators, compared to new entrants. Since it is not possible to identify any significant differences between the firms for the other indicators related to learning by doing, the null hypothesis of Research Question 1 is accepted. In view of these findings, in the following subsection, we analyse sectoral upgrading processes. This includes analysis of wage and skill increases in the sector, over time.

#### **6.4.2 Sectoral Learning by Doing**

##### *Product Upgrading*

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<sup>164</sup> Moreover, the oldest possible establishments in Cambodia are those started in 1979 after the Khmer Rouge regime (Chhair and Ung, 2014a: 9).

The conclusion reached by Bernhardt and Milberg (2011) is that Cambodia was an ‘economic upgrader’ over the period 2000-2009. This is because economic upgrading was achieved with social upgrading, as indicated by both an increase in market share and the unit value of exports, coupled with an expansion of profits.<sup>165</sup> Despite their optimism, however, more recently Asuyama et al. (2013) present evidence which shows the contrary: the unit value of garment exports from Cambodia increased between 2001 and 2003, but followed a gradually declining trend thereafter; for the 2002-2008 period as a whole, the unit value declined by 23 percent.

The validation of these trends through analysis of trade data is challenging. This is because the data obtained from Asuyama et al. (2013) derives from the Ministry of Commerce. This data source does not disaggregate according to the Harmonised System (HS). In order attempt to validate the findings of Asuyama et al. (2013), first, trade data from UN Comtrade was analysed at a high level of aggregation (HS2-digit) in order to identify the broad categories of goods exported. This process enabled the identification of the following two major exports within the textiles and clothing category:<sup>166</sup>

- Articles of apparel and clothing accessories, knitted or crocheted (HS61); and,
- Articles of apparel and clothing accessories not knitted or crocheted (HS62).

These garment exports, together accounted for 59.8 percent of Cambodia’s total textiles and clothing exports between 2005 and 2013 according to data obtained from UN Comtrade. The dominant exports fall within HS61 articles of apparel and clothing, which accounted for just over 57 percent of total textiles and clothing export value between 2005 and 2013. The major markets for the products exported within the top five HS codes, were then identified (Table 14).

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<sup>165</sup> They find its growth in market share was 5,539.7 percent over 2000 and 2009; and the increase in unit values for apparel was 53.8 percent.

<sup>166</sup> This falls between HS codes 51-63, at the HS 2 digit level.

**Table 14: Top Five Marketed in Latest 3 Year Period**

HS2	Description/Market	Average 2004-6		Average 2011-13	
		Value (US\$ 000)	Share of total chapter exports	Value (US\$ 000)	Share of total chapter exports
<b>61 Articles of apparel and clothing accessories, knitted or crocheted</b>					
All countries	2,147,515	100.0%	4,207,171	100.0%	
United States	1,472,032	68.5%	1,897,241	45.1%	
EU28	528,231	24.6%	1,397,518	33.2%	
Canada	98,559	4.6%	385,558	9.2%	
Japan	7,608	0.4%	130,678	3.1%	
China	1,536	0.1%	61,240	1.5%	
<b>62 Articles of apparel and clothing accessories, not knitted or crocheted</b>					
All countries	122,265	100.0%	212,450	100.0%	
United States	100,513	82.2%	84,912	40.0%	
EU28	11,930	9.8%	62,240	29.3%	
Japan	536	0.4%	31,948	15.0%	
Canada	5,520	4.5%	13,054	6.1%	
China	11	0.0%	3,861	1.8%	
<b>63 Other made up textile articles; sets; worn clothing and worn textile articl ...</b>					
All countries	12,113	100.0%	33,577	100.0%	
United States	7,626	63.0%	16,529	49.2%	
EU28	1,335	11.0%	5,718	17.0%	
China	132	1.1%	3,168	9.4%	
Canada	373	3.1%	2,280	6.8%	
Australia	815	6.7%	1,672	5.0%	
<b>55 Man-made staple fibers</b>					
All countries	14,201	100.0%	9,402	100.0%	
Vietnam	1,093	7.7%	3,018	32.1%	
Mexico	-	0.0%	2,040	21.7%	
China	7,503	52.8%	989	10.5%	
Haiti	-	0.0%	877	9.3%	
Hong Kong, China	1,738	12.2%	604	6.4%	
<b>60 Knitted or crocheted fabrics</b>					
All countries	3,242	100.0%	14,464	100.0%	

Vietnam	402	12.4%	4,260	29.5%
China	274	8.4%	1,784	12.3%
EU28	94	2.9%	1,598	11.0%
Hong Kong, China	530	16.3%	1,492	10.3%
United States	38	1.2%	1,448	10.0%

Source: UN COMTRADE, 10.7.15 (converted from USD thousands to millions)

For the major exports within HS61 articles of apparel and clothing accessories, the US followed by the EU, Canada, Japan and China are the main markets. These markets also feature for products within HS62 articles of apparel or clothing accessories not knitted. Interestingly, man-made staple fibres (HS55) tend to be exported to a more diverse range of markets which includes Vietnam, Mexico and Haiti. Vietnam features as the main market for knitted or crocheted fabrics (HS60).

In order to explore trends in unit values and provide evidence that would support product upgrading, trends in export prices and quantities were explored. This was undertaken at the HS6-digit level and for the top three exports at this level of analysis; this approach identified the following products:

- HS610469 women's or girls' trousers, bib and brace overalls, breeches and shorts of textile materials, knitted or crocheted (excl. of wool, fine animal hair, cotton or synthetic fibres, panties and swimwear);
- HS620462 women's or girls' trousers, bib and brace overalls, breeches and shorts of cotton (excl. knitted or crocheted, panties and swimwear); and
- HS630239 bedlinen of textile materials (excl. of cotton and man-made fibres, printed, knitted or crocheted).

Analysis of unit values is problematic as there are often discrepancies between what is reported by the exporter, compared to the importer. These challenges go over and above the fact that exporters report free on board (f.o.b.) prices, which is a proxy for the trade price at the factory gate (relying on exporters declarations and excluding trade costs); whilst importers report cost of insurance and freight (c.i.f.) values (relying on importers declarations and including all trade costs, except tariffs and domestic taxes after the border). These challenges are evident from a comparison of the reported data within UN Comtrade by product and market presented in Table 15.

**Table 15: Unit Value Analysis of Major Textiles and Clothing Exports**

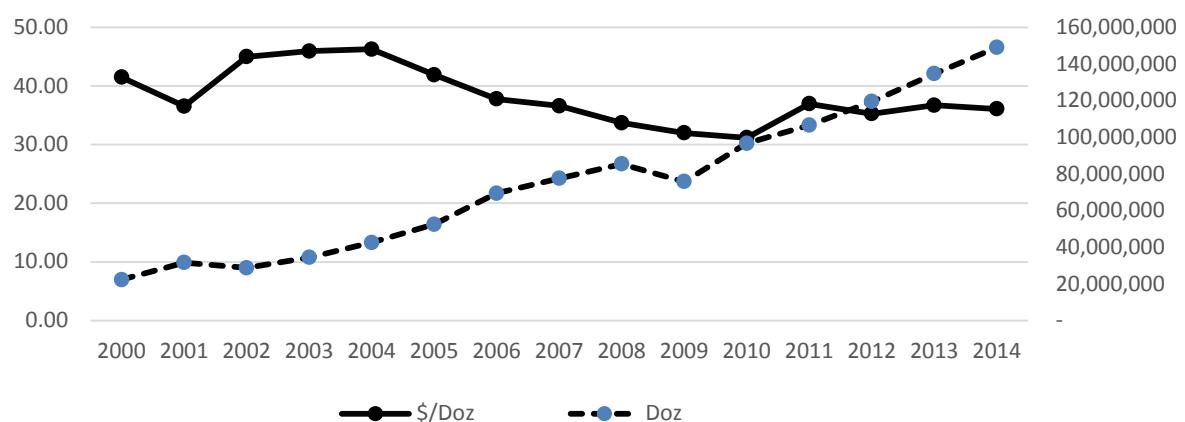
Product and Destination		2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>610469</b>	women's or girls' trousers, bib and brace overalls, breeches and shorts of textile materials, knitted or crocheted (excl. of wool, fine animal hair, cotton or synthetic fibres, panties and swimwear)									
<i>Cambodia</i> f.o.b value	World	5.55	5.55	5.90	8.72	10.08	8.77	8.45	9.30	9.39
	USA	5.55	5.55	5.90	8.72	10.08	8.77	8.45	9.30	9.39
	EU28	5.55	5.55	5.90	8.72	10.08	8.77	8.45	9.30	9.39
	Canada	5.55	5.55	5.90	8.72	10.08	8.77	8.45	9.30	9.39
		<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>610469</b>	women's or girls' trousers, bib and brace overalls, breeches and shorts of textile materials, knitted or crocheted (excl. of wool, fine animal hair, cotton or synthetic fibres, panties and swimwear)									
<i>Destination</i> <i>Market</i> ci.f. value	USA (\$/item)	8.28	4.19	5.03	8.25	4.84	4.02	4.65	4.77	5.55
	EU28 (\$/item)	3.57	11.70	7.04	6.32	6.32	4.88	5.26	4.43	4.64
	Canada (\$/item)		6.41	15.00	6.83	7.89	5.79	6.02	7.52	8.06
		<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>620462</b>	women's or girls' trousers, bib and brace overalls, breeches and shorts of cotton (excl. knitted or crocheted, panties and swimwear)									
<i>Cambodia</i> f.o.b value	World	7.59	7.59	13.84	18.91	18.62	15.77	16.04	16.36	17.08
	EU28	7.59	7.59	13.85	18.91	18.62	15.77	16.04	16.36	17.08
	USA	7.59	7.59	13.84	18.91	18.62	15.77	16.04	16.36	17.08
	Japan	7.59	7.59	13.84	18.91	18.62	15.77	16.04	16.36	17.08
		<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>620462</b>	women's or girls' trousers, bib and brace overalls, breeches and shorts of cotton (excl. knitted or crocheted, panties and swimwear)									
<i>Destination</i> <i>Market</i> ci.f.	EU28 (\$/item)	8.37	8.08	8.18	8.65	10.10	7.29	9.69	8.60	8.53
	USA (\$/item)	6.94	6.89	6.33	12.82	5.71	5.89	6.82	7.17	7.05
	Japan (\$/item)	14.54	11.00	11.95	12.82	5.43	12.86	8.32		12.86
		<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>630239</b>	bedlinen of textile materials (excl. of cotton and man-made fibres, printed, knitted or crocheted)									
<i>Cambodia</i> f.o.b	World	8.29	5.13	6.49	5.42	4.99	4.50	7.68	6.57	6.57
	USA	6.23	4.54	4.22	5.02	4.11	4.70	7.78	6.55	6.57
	Canada	8.66	5.47	21.27	6.29	6.17	4.41	4.54	6.39	5.93
	EU28	11.39	9.88	13.31	9.25	11.54	8.62	8.84	8.23	

		2005	2006	2007	2008	2009	2010	2011	2012	2013
630239	bedlinen of textile materials (excl. of cotton and man-made fibres, printed, knitted or crocheted)									
Destination	USA	87.85	310.40		13.99		7.96	96.11		
Market ci.f.	Canada	13.16	13.00		16.37		39.60	31.94	13.64	10.68
EU28										9.06

Source: UN COMTRADE, 10.7.15.

It is fair to say that the conclusion reached by Bernhardt and Milberg (2011) based on analysis of the unit value data obtained from this data source is unlikely to be the most reliable. In order to overcome these challenges therefore, more recent trade and unit data was sought directly from the Ministry of Commerce, Cambodia and is presented in Figure 6.

**Figure 6: Cambodian Clothing Exports: Total and unit value**



Source: Ministry of Commerce; obtained 29 September 2015.

Note: Dollar value per dozen consignments.

This data confirms a decline in the unit value of Cambodia's clothing exports to US\$35.25/dozen in 2012 from a high of US\$46.26/dozen in 2004 (prior to the end of the MFA period), and a starting point of US\$41.49/dozen in 2000.<sup>167</sup> It therefore updates and confirms the findings of (Asuyama et al., 2013). Other data sources were also cross-referenced in order to confirm recent trends. This includes the data made available in the US Shippers Report.<sup>168</sup> The results of an initial comparative analysis between Cambodia and Bangladesh confirm that the unit value of textiles and clothing

<sup>167</sup> This information obtained from the Ministry of Commerce is based on per doze/clothing exports. It is therefore a highly aggregate category which is used for customs purposes.

<sup>168</sup> Information obtained from US Department of Commerce (Otexa) based on millions of square metres equivalent.

exports into the US market, from Cambodia are slightly lower compared to Bangladesh (Table 16) and have declined over time.

**Table 16: Comparison of Unit Values: Cambodia and Bangladesh**

Year	Cambodia			Bangladesh		
	Volume (mill sq. metre equiv.)	Value (US\$mill)	Unit Value	Volume (mill sq. metre equiv.)	Value (US\$mill)	Unit Value
2008	910.423	2385.821	2.621	1664.657	3537.458	2.125
2009	888.360	1887.773	2.125	1622.746	3522.803	2.171
2010	1002.693	2243.455	2.237	1866.908	4063.359	2.177
2011	1097.761	2622.022	2.389	1749.767	4652.865	2.659
2012	115.364	2568.996	2.303	1764.632	4621.587	2.619
2013	1131.519	2587.479	2.287	1944.621	5104.875	2.625
2014	1087.416	2515.928	2.314	1888.160	5004.948	2.651

Source: Otexa Major Shipping Report, each year, general imports per country ([http://otexa.trade.gov/msr\\_archive/msr\\_archive.htm](http://otexa.trade.gov/msr_archive/msr_archive.htm))

Note: Total of all aggregations.

Globally, Cambodia increased its world market share in clothing from 0.5 percent in 2000 to 1.1 percent in 2013 (WTO, 2014). Within the US market, the predominant destination, however, the most recent evidence suggests a decline in market share from 2.4 in 2013 to 2.3 percent in 2013.<sup>169</sup> Overall, Cambodia has not upgraded according to the results of the selected indicator of product upgrading – the combination of unit value and market share analysis.

### ***Process Upgrading***

We are limited in our ability to describe capital investments in the sector. We already know there have been TFP improvements in the sector, though the source is ambiguous. Because process upgrading entails increasing output and performing certain tasks better, indicators can include labour inputs and skills, as well as overall volumes exported. We therefore summarise recent developments in terms of wages, employment levels, and skills development in the following sub-sections.

### ***Growth in Employment***

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<sup>169</sup> Estimated based on a comparison of the Top 10 importers into the US market of textiles and clothing between 2013 and 2014 and information obtained from Otexa and US Shippers Report.

Bernhardt and Milberg (2011) find an “unambiguous case of social upgrading in Cambodia” (*Ibid*: 38). This results from a doubling of real wages and a sixty-fold increase in employment from the late 1990s to the late 00’s.<sup>170</sup> However, a major limitation inherent within their framework is an inability to consider skills development.

Wages have exceeded the national poverty - US\$45 per month<sup>171</sup> - for a number of years as evident from Table 17. The minimum wage in the garment sector increased to US\$80 compared to US\$61 from July 2010 (World Bank, 2013).<sup>172</sup>

**Table 17: Employment and Wages in the Garment Industry**

Textiles and Clothing Companies	Sep-05	Sep-06	Sep-07	Sep-08
Total no. of factories in operation	236	283	285	310
Total no. of local office staff	5,905	6,860	7,386	7,681
Total value of local office staff salaries (US\$) per month	778,914	955,546	1,101,200	1,209,011
Average monthly wage (US\$), skilled labour	132	139	149	157
Average annual wage (US\$) per skilled labour	1584	1668	1788	1884
Total no. of local workers	259,164	317,807	330,607	344,786
Total value of local worker salaries (US\$) per month	18,192,690	22,444,232	25,666,237	28,076,582
Average no. workers per factory	1,098	1,123	1,160	1,112
Average monthly wage (US\$) per worker [unskilled]	70	71	78	81
Average annual wage (US\$) per worker [unskilled]	840	852	936	972

Source: Ministry of Commerce, production line data as of September for each year.

Currently, the minimum wage in the sector is set at US\$145 per month (this include a mandatory allowance of US\$17 which has resulted from increased bargaining between factories, unions and the government).<sup>173</sup> This rate is now equal to Vietnam and is considerably higher compared to competitors in Bangladesh (US\$70) and Myanmar (US\$78).<sup>174</sup> These increases have been motivated more by political economy considerations, than skills upgrading as envisaged within Nelson and Pack (1999) is unlikely. There were organised strikes during the elections held in 2013. Since then unions have become affiliated with the opposition Cambodia National Rescue Party (CNRP), which disputes the recent election results.<sup>175</sup>

170 According to their estimates, employment in the sector increased 60-fold, or by 5,824.7 percent from the late 99’s to 00’s; wages increased by 84.5 percent over the same period.

171 See Asuyama et al. (2013).

172 However, the evidence presented in the World Bank (2013) suggests this increase seems to be in contrast to the deceleration of a number of selected labour cost indicators surveyed in order to calculate a monthly inflation basket (including housing maintenance, personal care, cleaning repair and lent clothing, medical outpatient costs).

173 Chhair and Ung (2014a).

174 (*Ibid*).

175 Because of wage increases in this sector, the government is under increasing pressure to review wage levels more generally, as discussed in the World Bank (2014b) in its Cambodia Economic Update, which includes a section on ‘Improving Pay for the Public Sector’.

### ***Skills Development***

The average level of education for entry-level positions is primary. There are some slight differences in the number of years of education between men and women (Table 18). For higher-level managerial positions, more than 90 percent of managers surveyed by Asuyama et al. (2013) had attained education beyond high school; most had work experience within similar environments.

**Table 18: Labour Force Characteristics**

Indicator	2004	2007	2008	2009
Females in labour force (%)	50	49	48	50
Years of education	5.51	6.07	6.05	5.98
Female years of education in sector	6.12	6.26	5.80	6.39
Males years of education in sector	7.55	8.62	7.22	7.28
Average years of education in sector	6.39	6.67	6.10	6.55
Employment share of the industry				
Agriculture (%)	58	49	43	53
Textiles and clothing (%)	4	5	6	5

Source: Adapted from Savchenko (2012)

In comparison, the barriers which prevent movement from entry level positions towards operators (e.g. from a helper towards an operator) are posited to be low. This is despite a wage difference of around 40-65 percent between the two roles, as discussed by Asuyama et al. (2013).<sup>176</sup>

There is some evidence of on-the-job training. Based on analysis of the IDE-JETRO firm-level surveys undertaken in 2003 and 2009, around 75 percent of the surveyed firms provided formal training to their employees. Interestingly, this incidence of training is considerably higher than that of Bangladesh (12.6 percent in 2002 and 31.5 percent in 2008) according to Asuyama and Neou (2014).

### ***Movement of Labour***

There is anecdotal evidence that firms have begun to replace foreign managers with national employees. For example, Asuyama and Neou (2014) find around two thirds of firm's recruited Cambodian supervisors. They describe how these moves may be motivated more by a desire to reduce wages for managers, rather than an effort to develop local skills. Despite this, the actions do represent new opportunities for skills

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<sup>176</sup> Negative in 1996, increasing in 1999 and then on a downward turn until 2004 with an improvement between 2007 and 2008. Savchenko (2012) also presents evidence of a wage premium being paid in the sector, compared to the economy wide average, although it is somewhat erratic.

acquisition by Cambodian nationals. The limitation is the complete absence of any link to formal education institutions.

According to Asuyama et al. (2013) most of top managers in firms are foreign nationals and of Chinese nationality: 30 percent from mainland China, and 15 and 21 percent from Hong Kong and Taiwan, respectively. They found only 8 percent of managers had Cambodian nationality. By ethnicity, 77 percent of top managers answered that they were Chinese, whatever their geographical origin (Asuyama et al., 2013). Since most major managerial decisions to do with local manufacturing are almost exclusively made outside Cambodia, the degree of domestic autonomy within the sector is clearly limited.

### ***Capital Investments***

An indicator of the degree to which garment manufacturers and firms are investing in their productive capabilities is to look at production line data and capital/labour ratios (Table 19). There has been a slight increase in capital/labour ratios which may be reflective of process upgrading.

**Table 19: Textiles and clothing companies and capital/labour ratios<sup>177</sup>**

Textiles and Clothing Companies	Sep-05	Sep-06	Sep-07	Sep-08
Total number of factories	236	283	285	310
Total number of machines <sup>178</sup>	195,306	231,469	241,129	260,986
Total number of local workers [unskilled]	259,164	317,807	330,607	344,786
Total number of local skilled workers (office staff)	5,905	6,860	7,386	7,681
Capital/skilled labour ratio	33.1	33.7	32.7	34.0
Capital/unskilled labour ratio	0.75	0.73	0.73	0.76

Source: Ministry of Commerce, production line data as of September for each year.

However, around 85 percent of companies rent their equipment rather than own production facilities (Dasgupta et al., 2011). As discussed by UNCTAD (2013b), even though this is not uncommon in the sector, due to the exceptional structure of the sector in Cambodia, it might signal concerns or intentions related to long-term production plans. According to an ADB (2004) survey, the technology used in Cambodia was at the lowest level, hence limiting the ability of production lines to increase both volume and quality.<sup>179</sup> Moreover, most equipment and machinery were

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<sup>177</sup> Includes those located within SEZs.

<sup>178</sup> Machinery include: sewing, cutting, and other (which may also include generators).

<sup>179</sup> See Savchenko (2012).

relocated to Cambodia after use in other production networks, or imported second hand by local producers.<sup>180</sup>

Coupled with the available evidence on skills upgrading and vocational training programmes, there are rather more limited process upgrading opportunities in the sector. Knowledge spillovers through worker turnover and the training of managers are also limited, in view of the absence of any concerted effort to ensure that these processes actually take place.

#### ***Functional Upgrading***

According to most recent data received from the Ministry of Commerce, information on “other textiles product” exports suggests an increase from US\$12.6 million in 2000 to US\$113 million in 2014, with an increase in unit values over the same period (compared to a decline for clothing).<sup>181</sup> However, the drivers of these exports remain largely unclear. For example, according to Staritz (2011) Cambodia lacks even basic inputs, though there are certain fabrics which could be produced locally.<sup>182</sup>

The participation of Cambodian firms within the garment GVC seems to have declined rather than increased over time. There is no evidence suggestive of any fundamental change in the functional position of Cambodian firms, and managers, within the overall textiles and clothing GVC. There is also no evidence of Cambodian firms selling onto the domestic market, at this stage. Functional upgrading processes have therefore been limited.

#### ***Inter-Sectoral Upgrading***

Although Cambodia has struggled to diversify its economy in the past decade, it has experienced nearly double-digit growth per annum of which garment exports have been the main driver (Ear, 2012; Guimbert, 2010). There has been some movement into new exports in recent years. However, concerns regarding processes of “self-discovery” and the sustainability of growth remain. The definition of inter-sectoral upgrading is the use of skills acquired in one to move into another sector. Hence, its identification requires first, the identification of skills acquired by Cambodian firms

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<sup>180</sup> Only knitting machinery and equipment were imported first hand from Germany, Taiwan and China.

<sup>181</sup> Based on data received 04<sup>th</sup> October 2015 from the Ministry of Commerce.

<sup>182</sup> The call for backward integration within the sector has more recently been called for by Staritz (2011) who notes that “backward integration will be central to increase competitiveness with respect to lead times, production flexibility and costs, as well as increase domestic value added, local linkages and spillovers.”

and then their subsequent utilisation in a different sector to where they were obtained. For the reasons already alluded to, it is a challenge to undertake this analysis.

Nevertheless, according to the analysis undertaken by Chhair and Ung (2014b) and others, notably (DiCaprio and Suvannaphakdy, 2014) it is clear that other manufacturing sectors are emerging in Cambodia. This includes in the leather and footwear industries and electronic and automotive sector. The actors involved in the development of these emerging sectors and their structure in terms of inter and intra-firm relations, however, are similar to those already described in the garment sector. Hence, although there is evidence of inter-sectoral upgrading in aggregate terms and as revealed by analysis of Cambodian exports, we are unable to make any link to indigenous technological capability development, which is essentially a prerequisite for inter-sectoral upgrading.

Compared to other LDCs, Cambodia scores highly on the Grubel-Lloyd index for intra-industry trade in the electronic and automotive export sector (DiCaprio and Suvannaphakdy, 2014), of which exports are worth over US\$0 million. This sector, however, is dominated by affiliates of Japanese multinational enterprises: as of November 2013, there are 35 Japanese manufacturers which include firms such as small motor maker, Minebea Corporation, and car-use wire harness producer, Sumitomo Wiring Systems Ltd (Ito, 2013).<sup>183</sup>

As discussed by DiCaprio and Suvannaphakdy (2014), the main motivations for these firms to manufacture in Cambodia include special economic zones combined with low labour costs and proximity to key production network such as China and other emerging economies in Southeast Asia. Although there has been some increase in exports from Cambodia such as footwear, these exports still rely on externally derived and driven production and marketing networks. To some extent they also operate in a much more externally driven way, compared to the garment industry (e.g. with no BFC monitoring programme).

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183 For instance, the Minebea Corporation employ more than 6,000 workers to glue components onto motors (Chomchuen & Obe, 2014).

Movement into new manufacturing production networks was evident in 2009. A site visit was made to Phnom Penh SEZ which had fifteen signed-up investors, including for the textiles and clothing as well as automotive industry. At full capacity, after completion of Phase Three, the SEZ was projected to employ around 100,000 factory workers – approximately one-third of the total labour force currently employed in the garment manufacturing. This was projected to occur by around 2021. Between 2008 and 2012, 518 new large-scale factories were set up, contributing around US\$5,500 million to GDP and providing 560,000 jobs (RGC, 2013). Moreover, the number of SMEs in 2012 reached more than 38,000 creating more than 185,000 jobs (*Ibid*). In relation to the targeting of investors, however, the approach revealed from discussions with representatives of the SEZ was simply to attract ‘any’ investment. These new industries have no industry representation akin to GMAC. Instead since they predominantly operate within SEZs, they simply “advocate for the zone’s policy”.<sup>184</sup>

#### **6.4.3 Learning by Doing at the Societal Level**

In order to identify learning by doing at the societal level, we use some of the indicators associated with the study of NIS’s. In order to induce a societal wide learning by doing process, the links between internal GVC relationships on an intra- and inter-firm basis need to support this process through information sharing and a coordination effort to facilitate knowledge transfers. Even though the mechanisms required to facilitate such processes have been absent in Cambodia, there have been important policy shifts which are reflective of a monitoring and evaluation processes and therefore a form of societal learning by doing.

#### ***Elements of a National Innovation Strategy***

The role of intermediate institutions and business associations in Cambodia in the past was limited to quota management system and installed so as to ensure a competitiveness bidding process, with no link to “learning rents”.<sup>185</sup> Despite the end of the MFA period, their role has not fundamentally changed. There are no explicit programmes to support local skills, linkages and spillovers. No specific programmes to address the specific skills gaps of local producers. The GPSF although operating at the highest political level also been somewhat constrained in terms of responding to private sector demands, primarily dominated by the interests of large multinationals

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184 *Ibid*.

185 For example, as described by Khan and Blankenburg (2009).

with limited interaction with domestic business associations and the small and micro sized enterprise sector. The limitations of these structures and absence of effective coordination mechanisms has been recognised in the RGC (2015) industrial policy document.<sup>186</sup>

This policy document essentially represents a major shift in external governance structures and the interface with internal value chain governance, and inter-firm relations. It refers to the establishment of a specific manufacturers association to serve as a mechanism for ensuring collective benefits through information exchange, advocacy and cooperation. This is considered a prerequisite to enable the dissemination of information to the wider national and international business community so as to support industrial development processes. This policy change has been prompted by evidence on the limited technological spillovers from export-orientated FDI firms to the domestic economy. This is in addition to recognition of the limitations of weak governance and coordination failures.

The need to align human resources and investment policy is recognised as a key future determinant of the competitiveness of the industrial sector. Investment policy is discussed in relation to the encouragement of Cambodians within managerial and technical positions. Careful targeting is described in view of the need to foster local entrepreneurship and facilitate entry into other sectors; hence, leveraging skills obtained in the garment sector. Finally, investment in human resources and the promotion of technological development and innovation is called for. The imperative of the new economic growth strategy outlined in RGC (2015) is discussed in terms of responding to the domestic economic structure and the evolving regional and global economic structure.

The RGC states that incentives and mechanisms to promote investment in specialised education and advanced vocational training, with joint involvement from government institutions, industrial enterprises and workers will be created. Similarly, programmes

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<sup>186</sup> This document, was drafted by senior civil servants working in collaboration with major donors, notably JICA, KDI in addition to the AsDB. The UKs Department for International Developed ceased operations in Cambodia in around 2010 because of political economy considerations.

and specific mechanisms to enable cooperation between universities, research institutes and technology centres will be developed, though the exact form and structure of these are yet to be specified.

Overall, it is fair to say the policy outlined in RGC (2015) signals an important change in track and recognition of the limitations of previous facilitative approach adopted; a process of learning from mistakes.<sup>187</sup> If fully implemented it offers the potential to radically transform existing mechanisms of public-private interaction and introduce an explicit NIS.

## 6.5 Summary of Findings

This chapter has analysed Cambodia's integration process with the textiles and clothing GVC. It has positioned the role of the state in relation to this process as facilitative, given a highly liberal trade and investment policy framework at the time of integration. The initial 'seeding' process of modern sector exports in Cambodia was part of a political bargain between major donors, notably the US and the nascent Cambodian state. The entrepreneurs undertaking the seeding process were East Asian manufacturers relocating for cost advantages as well as escaping quota restrictions.

More recently, there are challenges in terms of differentiating between firms regarding ownership, because of the nature of Chinese capital within the evolving political economy of Cambodia. Movement of labour coupled with capital mobility means that accumulation processes and the political economy of Cambodia are being fundamentally altered as Sino-Khmer alliances are formed.

In the original classification of GVC governance defined by Gereffi et al. (2005), a hierarchical type is characterised by a dominant form of managerial control, flowing from managers to subordinates, or from headquarters to subsidiaries and affiliates. This structure seems most applicable in view of the nature of value chain governance between Chinese owned firms in Cambodia and their parent companies, in view of their fragmentation processes. In comparison, the definition of a quasi-hierarchical

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<sup>187</sup> This policy document describes how 99 percent of microenterprises were not officially registered, compared to 29 percent of medium enterprises and 7 percent of large enterprises.

governance structure defined by Humphrey and Schmitz (2000) may be more applicable to the operation of producers located in Cambodia, within the overall textiles and clothing value chain, driven predominantly by Western branded retailers. This is whereby the relationship between firms involves one being subordinated to another through sub-contracting.

It has been challenging to identify any of the learning by doing processes as conventionally understood and in line with the trajectory developed by Nelson and Pack (1999). Although industrial policy enacted from 2015 contains elements of an innovation strategy, it remains broad and we have been unable to evaluate its potential effectiveness. In terms of upgrading, there seems to have been limited product upgrading as indicated by analysis of product unit values and market share and rather more evidence of downgrading at least within the US market.

Process upgrading is apparent in terms of volume growth. However, there have been limited attempts to train Cambodia managers and provide vocational skills and training. In relation to functional upgrading, there is no evidence to suggest that the skills obtained in the textiles and clothing sector have subsequently been applied elsewhere by domestic Cambodian firms. We therefore conclude that this upgrading process has been limited. This is also the case with regards to inter-sectoral upgrading, since these processes are being driven rather more by external than internal agents, at the current time.

## **Learning by Doing in the Textiles and Clothing Value Chain: Bangladesh**

### **7.1 Introduction**

The more directive approach adopted by Bangladesh towards GVC integration and the subsequent learning by doing processes identified, provide a number of comparative aspects in view of the absence of certain critical factors in Cambodia and their presence in Bangladesh. There is evidence of domestic firms becoming full package suppliers and hence achieving a form of functional upgrading. This is reflected in the evolution of tiers of firms within the industry, with different relationships with buyers.

The effective management of learning rents to enable these processes was critical at the time of GVC integration. Though more recent challenges related to funding further learning activities have become apparent, overall, the evidence presented in this chapter suggests Bangladesh has been able to achieve certain upgrading processes as a result of its more directive approach towards GVC integration. This approach enabled particular types of learning by doing to take place and hence influenced internal value chain governance to facilitate the development of direct links with buyers as opposed to a sole reliance on intermediaries; in turn, this process enabled a form of functional upgrading.

This chapter is organized as follows. First, the external governance structures which influenced the development of the textiles and clothing value chain in Bangladesh and

shaped internal governance structures between firms are introduced. The role of the state in this process is classified as more directive than facilitative. Internal governance structures between firms are then described, with the most recent available secondary data analysed in order to identify how relationships have changed over time to enable certain upgrading processes. Finally, we conclude with the main findings of this chapter and their implications (including methodological) for the next set of “buyer driven” GVC country case-studies: Kenya and Ethiopia.

## 7.2 External GVC Governance

The Bengal region was advanced in terms of industrialization under the British Raj with Dhaka muslin and jute products being produced and exported (Yunus and Yamagata, 2014). Subsequently, with the partition of Bengal in 1947 and independence of Bangladesh in 1971, the established textiles industry continued operation under state ownership and as part of a broader programme on import substitution. Because of MFA restrictions in place during the 1970s and given that Bangladesh was not subject to these, a form of locational advantage was conferred.

As a result of increased interest and new investment destined to take advantage of the more open market access conferred to Bangladesh, a switch was made from the production of jute products to apparel.<sup>188</sup> There were further shifts in policy and these include in relation to the stimulation of backward linkages between the clothing and the domestic textiles sector. These developments were stimulated by external policy developments, described in the following sub-sections.

### 7.2.1 Strategic GVC Integration

Like Cambodia, the industry in Bangladesh also developed on the basis of attracting East Asian manufacturers seeking to benefit from its market access entitlements. However, unlike Cambodia, Bangladesh approached the process of relocation by (mostly) South Korean firms (notably Daewoo) strategically and used a directive approach. The process was both facilitated by and made contingent on the formation

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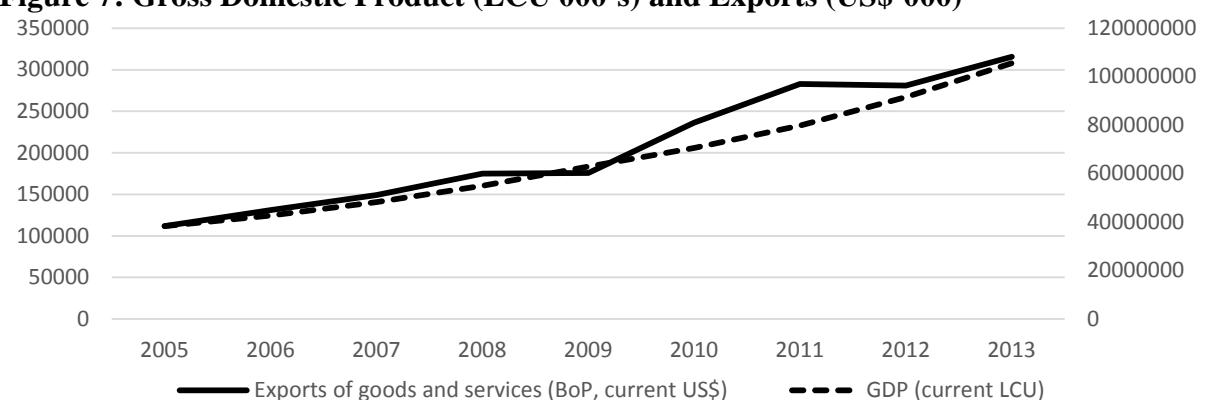
<sup>188</sup> And as a result, Bangladesh's dependence on primary commodities compared to manufactured exports, decreased (Yunus and Yamagata, 2014).

of joint ventures with local industry and firms (Bhattacharya and Rahman, 2001). Hence, the quota rent made available under the MFA regime was effectively translated into a learning rent (Khan, 2012).

### 7.2.2 Management of Trade and Macroeconomic Context

Export growth under the MFA regime was particularly impressive for Bangladesh: the value of garment exports increased by 30 times between 1984 and 1994, from USD 75 million to USD 2,228 million.<sup>189</sup> The average growth rate for garment exports from 1983-84 through to 2009-10 was as high as 20.1 percent which implies that the value of exports doubled every three and a half years (Yunus and Yamagata, 2014). It is estimated that the industry accounts for 75 percent of export earnings and 25 percent of GDP (Mottaleb and Sonobe, 2011). The garment industry has been the main driver of Bangladesh's economy since its inception; Figure 7 presents recent trends in GDP growth and exports.

**Figure 7: Gross Domestic Product (LCU 000's) and Exports (US\$'000)**

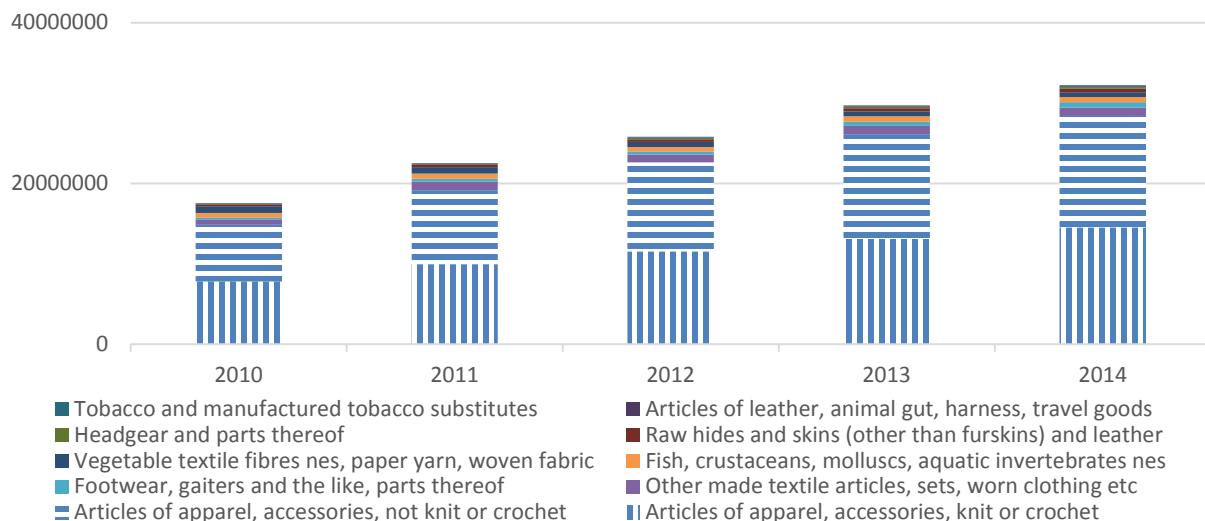


Source: World Development Indicators, accessed 27 June 2015; GDP expressed in local currency units (LCU), 000's.

Within the global context, Bangladesh is the world's second largest garment exporter since 2011 (WTO, 2012). Two main product categories products accounted for 85 percent of total exported products in 2014, up from 77 percent in 2010 (Figure 8): knit or crochet and non-knit and crochet articles of apparel (HS61 and HS62).

**Figure 8: Top 10 Major Exports**

<sup>189</sup> Yunus and Yamagata (2014).



Source: ITC TradeMap, accessed 25 June 2015; units in US\$ thousand; trade mirror data used from 2012.

A fixed exchange rate was used between 1972 and 1979. Although movement towards a ‘clean’ floating exchange rate regime commenced in 2003, including full convertibility of the current account, capital account convertibility has not yet been undertaken and therefore effectively remains closed (Fahima, 2012). Shifts in exchange rate policy were prompted by IMF interventions as Bangladesh became a member as of March 1994; the new floating exchange rate regime was agreed by 2003 as part the agreement made in order to access the IMF Poverty Reduction and Growth Facility. Domestic and external targets, including those relating to inflation and external reserves, are used to exchange rate interventions.

### 7.2.3 FDI-led Integration

The dominant presence of domestic firms is recognised as a distinctive feature of production in Bangladesh (Yamagata, 2009). It is atypical in comparison to other LDCs engaged with this value chain and results from a more directive approach towards the management of FDI in the sector.

Bangladesh formulated its first industrial policy in 1991. The privatization of SOEs commenced in the early 1990s; during the period 1994-1996 the passing of Companies’ Bill (1994) was introduced (World Bank, 2012b). The implementation of these policies have resulted in a gradual relinquishing of state control and improved the investment climate more generally. For example, an investment ceiling was

removed in 1978, shortly before the well-known Desh-Daewoo collaboration and first joint venture factory established in order to access the garment GVC.<sup>190</sup>

The framework of Bangladesh's industrial policy development was initially largely inherited from Pakistan (Akash, 1997). Under the post-independence Socialist regime, the focus was on import substitution and FDI restriction. After the coup d'état in 1975, this situation changed with the adoption of market-friendly policies, although the general approach remained somewhat interventionist. Reform of the economy and movement towards a more market-orientated structure commenced in the early 1990s and has continued progressively since then.<sup>191</sup> Essentially import-substituting industries began to shift towards an outward orientation, with policies such as the provision of trade finance were implemented to facilitate this transition.

The most recent Industrial Policy was created in 2010, which makes a total of seven since independence (Yunus and Yamagata, 2012). A post-MFA programme of support gained momentum between 2005-2010 (BIDS, 2011; Alam and Natsuda, 2013). A number of specific measures were introduced during 2005-6 in order to drive continued growth of the industry. These measures included: customs duty simplification, removal of quantitative restrictions on imports, and the abolishment of restrictions on FDI outside of EPZs. Attention focused on the development of backward linkages between the clothing and textiles sectors.

#### **7.2.4 Directive Approach**

FDI in the sector has been strictly managed and SEZs confined to the two cities of Dhaka and Chittagong (which is a deep sea port). In comparison, domestic firms, including subcontractors, are located within commercial buildings in major cities such as Narayanganj (located just south of Dhaka).<sup>192</sup> As discussed by Astarloa et al. (2012) firms located in EPZs cannot sell on the domestic market. They have however, been provided with similar fiscal benefits to FDI firms including access to amenities and utilities like water and electricity.

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190 Yunus and Yamagata (2012).

191 Other political reforms undertaken more recently include the separation of the judiciary from the executive, discussed by World Bank (2012b).

192 Yunus and Yamagata (2014).

Although FDI has been managed, there is no explicit FDI policy, though there are a number of related laws.<sup>193</sup> Inward FDI flows have remained fairly stable, as a percentage of GDP and outward flows remain low (Table 20). There is evidence of some aversion to foreign investment in the sector. For example, industry associations such as the BGMEA and BKMEA have argued that the garment industry is overcrowded, thus indicating that FDI – particularly 100 percent foreign-owned firms – is not welcome (Yunus and Yamagata, 2014).

**Table 20: Foreign Direct Investment, net inflows and outflows (% GDP)**

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Foreign direct investment, net inflows (% of GDP)	1.10	1.01	0.82	1.12	0.80	0.75	0.92	1.11	1.00
Foreign direct investment, net outflows (% of GDP)	0.003	..	..	0.000	0.019	0.003	0.002	0.001	0.003

Source: World Development Indicators, accessed 25 June 2015.

Even after the MFA phase out, the industrial associations discouraged 100 percent foreign ownership by refraining from the issue of the ‘utilisation declaration’ certificate, a requirement for tariff exemption of imported materials (Yunus and Yamagata, 2014). Generally, import tariffs remain high on average, with a mean bound rate on manufactured products of 76 percent in 2008 (compared to 81.8 percent in 2000); applied tariff rates on manufactured products are low however, at 10 percent in 2008.<sup>194</sup>

The BGMEA was formed to promote and protect the interests of mostly domestic manufacturers and exporters and given monopoly over the quota rent to do so. The government supported its domestic entrepreneurs and this includes through limiting export quotas to domestic firms, translating the quota rent into a learning rent.

193 These include: the Foreign Private Investment Promotion and Protection Act (1980); the Investment Board Act (1989); the Bangladesh Export Processing Zones and Authority Act (1980); the Bangladesh Small and Cottage Industries Corporation Act (1957); and the Companies Act (1994).

194 Source: World Development Indicators, accessed 30 July 2015.

There are anecdotal reports of corruption and rent-seeking which constrain investments in the sector, in view of vested interests and an unpredictable environment.<sup>195</sup> However, these concerns did not impede growth of the sector. Overall less than 15 per cent of Bangladeshi garment firms have foreign equity. This low level is due to the industrial policies of Bangladesh, which included safeguarding quota allocations in the US market under the MFA and later the ATC regimes for domestic firms (Kee, 2005).

It is also due to the way in which the clothing industry is organised globally, with outsourcing taking place where domestic capabilities already exist and off shoring where they don't as -within the Gereffi et al. (2005) framework. As discussed by UNCTAD (2013c) the low level of FDI relative to the size of the textiles and clothing value chain in Bangladesh is partly offset by non-equity modes of international production, and contract manufacturing (outsourcing production, rather than offshoring through FDI).

#### **7.2.5 Public Policy Considerations**

Fiscal benefits directed towards the textile and clothing GVC have been managed. Tax incentives decline after the initial year of establishment: from 100 percent after the first two years of a firm's establishment, to 50 percent for two years more before reaching 25 percent in the fifth year (Astarloa et al., 2012). Generally, problems with firms opening and closing in order to benefit from fiscal incentives seem less problematic than in the case of Cambodia. There are other challenges, however, related to capital flight.<sup>196</sup>

It is generally recognised that Bangladesh is starved of tax revenues, with one of the smallest tax to GDP ratios in the world (though comparable to Cambodia) at about 10

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195 Information obtained from key informant interviews and other secondary sources including Allchin (2014) who reports Sultan Hafeez Rahman, Country Director of the IGC, LSE, London, as follows: "corruption and rent seeking is at such an extent that FDI is not happening... No foreign investor will come and invest, it's completely unpredictable, all because a few powerful people want a piece of the cake."

196 The challenge of capital flight is discussed in the World Bank's (2012b) growth strategy document *Towards Accelerated, Inclusive and Sustainable Growth: Opportunities and Challenges*. Despite foreign capital inflows including donor support, it is acknowledged that growth rates will be hard to maintain without addressing the incentives to invest (World Bank, 2012b: 24). Bangladesh has a similar level of inequality to Cambodia, our major case-study, as measured by the Gini coefficient, which is 0.46 and 0.43 respectively. The bottom 40 percent of households according to the World Bank (2012b: 96) suffered a decline in their income share between 1988 and 2000 whilst the top ten increased their share. The overriding challenge relates to incentives for productive investments.

per cent (Allchin 2014; UNCTAD 2013c). As discussed by UNCTAD (2013c) Bangladesh does not have an established set of transfer pricing rules and nor the ability to implement such rules, which can result in arbitrary decisions. The total tax rate as a percentage of commercial profits is around 32.5 percent; customs and other import duties are important sources of government revenue (Table 21).

**Table 21: Tax to GDP Indicators**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Customs and other import duties (% of tax revenue)	43.24	42.51	34.87	41.87	42.51	39.93	35.63	..	32.12	31.47	30.34
Other taxes (% of revenue)	4.48	3.52	3.26	3.93	3.96	3.32	3.52	4.41	3.44	3.11	3.09
Tax revenue (% of GDP)	6.61	6.69	6.97	7.05	7.14	7.04	6.92	7.66	7.50	7.83	8.69

Source: World Development Indicators, accessed 25 June 2015

### 7.2.6 Elements of an Innovation Strategy

Elements of an innovation strategy are apparent within the approach adopted towards GVC integration. Though not stated explicitly, business associations in Bangladesh have performed a crucial bridge in terms of facilitating public-private interactions as intermediate institutions, as envisaged within the NIS literature. This role is related to the effective management of learning rents: the acquisition of competitiveness in the sector required the financing of learning by doing and this was based on a number of institutional and political arrangements that ensure compliance and high levels of effort (Khan, 2012).

Partnerships were initially developed with South Korean investors (Yunus and Yamagata, 2014). Though the actual commitment was not very long-lasting in practice, its effects in relation to industrial development have been. An ex-civil servant established Desh garments and this individual (and firm) subsequently agreed to a consignment contract with Kim Woo-Jung, the chairman of Daewoo (Yunus and Yamagata, 2014).<sup>197</sup> The initial agreement included training of managers and workers by Daewoo, in return for payment of a marketing fee by Desh garments (*Ibid*). Hence,

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197 Who resigned after assassinations in 1975 including of Mujibur Rahman.

the agreement was based on the provision of marketing and technical assistance in order to be beneficial to all trading partners.

This process of engaging with a buyer-driven GVC so as to benefit from rapid product and process upgrading and access high value end markets is conceptualized within the GVC governance typology developed by Gereffi et al. (2005). However, the creation of the appropriate incentive structures and institutional force, exerted by the State, required to ensure the flow of tacit and explicit forms of knowledge and information is more clearly demonstrated in the case of Bangladesh and the interpretation provided by Khan (2013).

Daewoo firms had a specific interest in transferring garment “know-how” to Bangladesh, given that they had a textile business that needed to sell fabrics to a competitive garment producing company.<sup>198</sup> Khan (2013) makes an explicit link between the integration approach with the textiles and clothing GVC and creation, coupled with the effective management of, learning rents. Since the provision of quota rents was not enough to induce the creation of a competitive industry in Bangladesh, a specific financing arrangement was established by the Desh-Daewoo collaboration in order to finance the learning by doing process.

This involved Desh sending 150 critical personnel to Daewoo’s production plant in Pusan in 1979 (and covering these costs except, hosting and production-line training) with Daewoo being repaid for its training through a 3 percent royalty on eventual sales by Daewoo and an additional 5 percent for marketing, given its knowledge of global marketing chains.<sup>199</sup> A combination of targeted institutional arrangements, backed by enforcement mechanisms, was utilised: Daewoo had incentives to transfer tacit knowledge, since they would not be paid until Desh began exporting.

There were clear economic motivations for Daewoo’s decision to source from Bangladesh. Its garment export growth was on the decline because of rising wages and quotas imposed by the US and EU on its exports. Bangladesh was (and remains) a low cost alternative supplier. There are some mixed anecdotal reports regarding

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<sup>198</sup> See Khan (2013).

<sup>199</sup> *Ibid.*

Daewoo's reluctance to invest in Bangladesh and instead preference to train workers and market products in exchange for a share of Desh's export sales. Regardless of these discrepancies, it is generally recognised that the Desh-Daewoo collaboration had strong political backing and this subsequently provided for other institutional innovations. These included the provision of bonded warehouses and back-to-back letters of credit which helped to reduce the costs of financing imported fabrics used in garment production.

Subsequently, the Desh trainees returned from South Korea after a six-month training period and assisted in the establishment of the first factory in Chittagong EPZ, the longest in operation (Astarloa et al., 2012). Thereafter, they led the subsequent expansion and growth of the domestic industry through the establishment of other factories (Yunus and Yamagata, 2014; Rhee, 1990). The first modern factory created on the basis of Daewoo's specification and technical assistance consisted of six [product] lines, 500 workers, five million pieces per year, and capacity worth \$1.3million in investment (Quddus and Rashid, 2000; Rhee, 1990; Yunus and Yamagata, 2014).

As a result of the initial seeding process, by 1988 there were 664 garment producer and by 2009 around 4,000 firms (Mostafa and Klepper, 2009). Most of these firms were, and remain, domestically owned. Foreign invested firms although encouraged, were restricted to EPZs and unable to sell on the domestic market. Following Daewoo's reputation other foreign investors from East Asia became interested in sourcing from Bangladesh and relocating production to its newly established EPZs; this process being pioneered by the first Desh-Daewoo factory in Chittagong EPZ in the 1980s (Alam and Natsuda, 2013).

The initial agreement between Desh and Daewoo was for a five year partnership. In practice however, it only lasted one and a half years.<sup>200</sup> The specific reasons for this brief engagement are posited by Khan (2013) as related to the explosive learning process undertaken, with further training not being required. However, there may have been other tensions in the relationship: the growth strategy envisaged by

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<sup>200</sup> Despite being so widely referred to in the literature, the Desh-Daewoo collaboration was only operational between 1978 and 1981 (Mostafa and Klepper, 2009).

Daewoo given its desire for an outlet into garment production, compared to the desire of Bangladesh to stimulate domestic backward linkages.

### ***Role of Business Associations***

The end of the Desh-Daewoo collaboration resulted in the creation of the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) in 1982. This industry association sought to organize the sector and to some extent institutionalize the learning processes which arose from the initial Desh-Daewoo collaboration. The association lobbied in order to obtain more favourable treatment from the state.<sup>201</sup> It also sought to employ some of the original trainees involved in the initial Desh-Daewoo collaboration. The BGMEA was granted monopoly power over quota allocations. Because domestic investors bought into the sector and were assisted in their efforts by the BGMEA, the quota system was effectively used to manage learning rents.

The success of the industry and its explosive growth led to the imposition of quotas in the US market. Unlike Cambodia, however, Bangladesh did not have to adhere to labour standards and this situation resulted from intense political lobbying.<sup>202</sup> Because of the implementation of quotas after 1985, it is estimated that almost 75 percent of garment factories in Bangladesh closed down (Quddus and Rashid, 2000). Hence, the policy measure served to increase concentration of production amongst firms, which in turn sought to maximise volumes.

During the time of the MFA quota management, the BGMEA performed an important role to avoid oversupply. A secondary quota management system facilitated utilisation of quotas, including through free transfer. As discussed by Yunus and Yamagata (2014), implicit in the MFA regime was an understanding that exporting countries which exhibited a high fulfilment rate were more likely to be allocated further quotas for the ensuing year. In order to achieve this objective, the state

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201 This included duty-free import of machinery, bonded warehouse facilities as well as cash incentives (Mottaleb and Sonobe, 2011; Quddus and Rashid, 2000).

202 As discussed in detail by Yunus and Yamagata (2014:86-87): "Until the mid-1980s Bangladesh successfully increased its global garments. Most North American and European countries came to recognize Bangladesh as a competitive garment exporter. Therefore the UK, France, Canada and the US decided to impose quotas as they did on other garment exporters under the MFA. However, diplomatic efforts changed the minds of the UK and France who mostly withdrew their quotas in 1986. Consequently only the US and Canada imposed quotas on Bangladesh. Later the EU decided to apply this no-quota policy to other LDCs."

allocated quotas to firms considered capable of fulfilling them, working with the BGMEA. .

The other major business association is the BKMEA which represents knit wear manufacturers. This business association was created in 1996 as a result of collective action to address the increased stringency of RoO applied to Bangladesh. For example, whilst the EU backed down from the application of export quotas to Bangladesh, it applied more stringent RoO. These required that imported inputs into final knitwear products undergo a triple transformation rather than the double transformation applied to other exporters. In order to achieve this, the BKMEA organised exporters and lobbied for state assistance to invest in the sector (purchase machinery and so on) and meet the EU rule. An explicit policy on textiles development was enacted to develop the sector and its backward linkages.

#### ***Political Economy Considerations***

As in the case of Cambodia, there are invariably political economy considerations in relation to rent management. However, there are important differences between Cambodia and Bangladesh in relation to incentive structures and hence, the effective translation of quota rents into learning rents. A number of factory owners in Bangladesh are also members of Parliament. However, whilst state actors in Cambodia are considered “rentiers”<sup>203</sup> the opposite may be the case in Bangladesh given the productive investments made by the State in the sector and role of state actors within the sector.

More recently challenges in relation to funding further learning processes, have arisen. These include in relation to the absence of an effective interface between business associations and vocational and education systems. This is an important gap in the identifiable elements of a NIS.

#### **7.2.8 Role of Backward Linkages**

The textiles industry has historically been ascribed a prominent role within Bangladesh’s industrial policy. For example, the industrial policy of 1999 identified the textile and clothing sector as one of the "thrust" sectors in Bangladesh, further to

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203 See Staritz (2011).

recommendations regarding the creation of a textiles cluster (CDP, 1999).<sup>204</sup> Efforts to develop an integrated textiles and clothing industry in Bangladesh were the subject of heated debate prior to 2005, in view of concerns over potential shortages of fabric.

The development of backward linkages between the clothing and garments sector were motivated less by concerns over shortages and more by the recognition of the potential to exploit dynamic scale economies.<sup>205</sup> For example, studies cited by CPD (1999) concluded that since Bangladesh is not a major cotton producer, Bangladesh has a comparative disadvantage in cotton fabrics. However, comparative advantage in raw cotton is neither necessary nor sufficient for comparative advantage in cotton fabric (CPD, 1999). This advice was therefore ignored and efforts made to foster backward linkages.

External trade policy, particularly as set by the EU - the major destination market - has had an important bearing on the industries development. As discussed by Keane (2013a) the stringency of origin requirements associated with the preferential regimes under which Bangladesh trades have increased over time. Production of knit fabric in Bangladesh expanded rapidly following the introduction in 1995 of stricter rules of origin under the EU's Generalised System of Preferences (the double-transformation rule).<sup>206</sup>

This meant that backward linkages had to be strengthened in order to benefit from reductions in duty. As a result of this increased stringency, it is estimated that approximately 80 per cent of the accessories used in ready-made garment exports are produced locally (Bhattacharya and Rahman, 2001). Some regional sourcing also takes place, with Pakistan and India featuring as suppliers of inputs such as cotton and knitted or crocheted fabric, in addition to China (Keane, 2012; UNCTAD, 2013c).

An important distinction must be made between the production and export of woven fabrics compared to knitwear production. The latter is less capital intensive and can be

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204 Including natural and synthetic fibres; yarn; grey fabrics; and finished fabrics.

205 As discussed by CPD (1999) who also note that many cotton growing countries have failed to achieve competitive advantage in cotton fabrics or clothing while several countries especially in East Asia developed a competitive fabrics sub-sector. Advanced economies maintain strong textiles sector.

206 See Bhakt et al. (2009).

undertaken on a small-scale. In comparison, woven fabrics required relatively capital intensive plants, with the use of technologies relating to dyeing. Woven producers in Bangladesh tend to rely on textiles sourced either by lead firms or traders, whilst knitwear producers tend to use pre-dyed yarn and this is more likely to be sourced domestically which results in greater value addition (Curran and Nadvi, 2015).

It is estimated that 25 percent of Bangladesh's woven garment exports are made from locally sourced fabrics compared to 85-90 percent of knitwear fabric being locally sourced (Frederick and Staritz, 2012). In knitwear, around half of the mills are so called composite mills that integrate the whole process production process, with hardly any sourcing of intermediate textile inputs (UNCTAD 2013c). However, further scope exists to expand production so as to meet demand, as only around 34-40 percent of the woven garments sector uses domestically produced yarn and fabrics (Lesihman and Hussein, 2010).

Public and private mills exist to support domestic production. All private firms are members of the Bangladesh Textile Mills Association (BTMC). The Bangladesh Textiles Mill Corporation (BTMC) controls the output of public mills. Overall, yarn production has expanded aby around four times (UNCTAD, 2013c).<sup>207</sup> However, since this sector remains mostly in the hand-loom sector, efforts continue to ensure adherence to the quality requirements demanded by international buyers.

Other challenges have been overcome in view of backward linkage development within the sector. For example, as discussed by Quasem (2012) in some instances imported fabric for use in garment manufacturing "leaked" to the local market, negatively affecting the domestic market for textiles. He describes two fundamentally different interests confronting each other, resulting in a not necessarily co-operative atmosphere between the respective clothing and textiles associations. These differences have had to be reconciled in order to stimulate backward linkage development, respond to trade policy shifts and enable a greater share of domestic value added to be captured.

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207 Data obtained from the Bangladesh Cotton and Product Annual records 84 mills in operation in 1995 compared to 385 in 2011.

### **Competitiveness Effects**

With yarn produced locally, value added is around 75 percent for knitwear compared to 25 percent in the case of woven products (Ahmed and Nathan, 2014). Moreover, the use of domestic inputs into the knitwear segment of the value chain enables Bangladesh to benefit from a duty free market access, which creates a margin of around 12 percent on the final retail value of the product (Curran and Nadvi, 2015). This is a large margin in view of the extremely competitive nature of the industry.

There is evidence to suggest the development of backward linkages in Bangladesh was viewed favourably by European buyers. For example, Thoburn, et al. (2002) make reference to European buyers switching their business towards firms able to supply FOB and move beyond the CMT note of production. They note that this policy change may have been influenced by the EU decision to grant tariff preferences to LDC.<sup>208</sup> Reducing reliance on intermediaries to supply inputs (as well as provide links to end markets and buyers) increases margins as well as reduces lead times. Most recent estimates regarding the available margins for selected garment exports are presented in Table 22.

**Table 22: Margins Available for Selected Products (2013)**

Product	Retail Price	FOB (\$)	FOB as % of retail	Labour Cost % FOB
Men's polo	23.00	2.50	10.86	5
Men's formal shirt	36.00	4.10	11.38	3.6-10.8
Men's pocket jeans	22.50	5.50	24.44	3-9

Source: Adapted from Ahmed and Nathan (2014).

### **Sales on the Domestic Market**

Prior to the Desh-Daewoo collaboration some firms servicing the domestic market had already made an outward orientated shift. For example, Reaz store in Dhaka established during the 1960s was a small tailoring outfit, which began exporting to Paris with an initial consignment including men's shirts. This firm began its outward orientation after 15 years of servicing the domestic market.<sup>209</sup> It was one of nine export-orientated garment firms servicing the domestic and export markets. Hence, capabilities obtained in the domestic market in this instance served to support outward orientation. This shift, for this particular firm was not sustained however, due to inadequate support mechanisms. Only later was the required apparatus to support

208 This change being part of a broader reform process of its trade preferences in view of the impending end of non-reciprocal arrangements between the EU and the ACP.

209 Yunus and Yamagata, (2012:3).

outward orientation installed; this included the provision of bonded warehouses and letters of credit.

More recently, there is evidence to suggest a shift from the export market towards the domestic market. For example, a number of export-oriented garment makers, which had supplied Western brands and retailers for an extensive period of time (including Walmart, Hugo Boss, JC Penney, H&M, Marks & Spencer) have opened stores to service the domestic market in Dhaka, with most demand for inputs being met by local manufacturers, with some items being imported mainly from India, China and Pakistan. For example, according to Shah Rayeed Chowdhury, director of Noir, a local brand of export-oriented Evince Group, which opened its first store in Dhaka in the last quarter of 2014: “this is the high time to grab the fashion business in Bangladesh as people are becoming fashion conscious with their rising income.”<sup>210</sup> Its team is supported by designers who gained their experience with renowned fashion houses.

This functional upgrading process – since it entails the development of marketing and sales capabilities – is also being pursued by companies with backward linkages in the textiles sector, with specific brands being created to service domestic consumers. In addition to growth in the domestic consumer market, the shift in focus has also been motivated by adverse shifts in the export market, with “export concentration getting worse” according to some commentators.<sup>211</sup> According to Shehryar Burney, executive director of Yellow, the brand was established as the parent company Beximco noticed that the global growth was shifting from the Western economies to Asia (Mirdha, 2015). Some replicability of the strategies undertaken by Chinese and Indian firms is also being pursued, with local markets being pursued in view of the development of brands to capture market-share.

There are concerns related to competition within the domestic market by fashion conscious consumers. For example, the BGMEA estimates that local brands could obtain a market share of less than 10 percent. The government recognises that a

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210 Mirdha (2015).

211 Interview given by Zaidi Sattar of the Dhaka-based Policy Research Institute, a think-tank, reported by Allchin (2014).

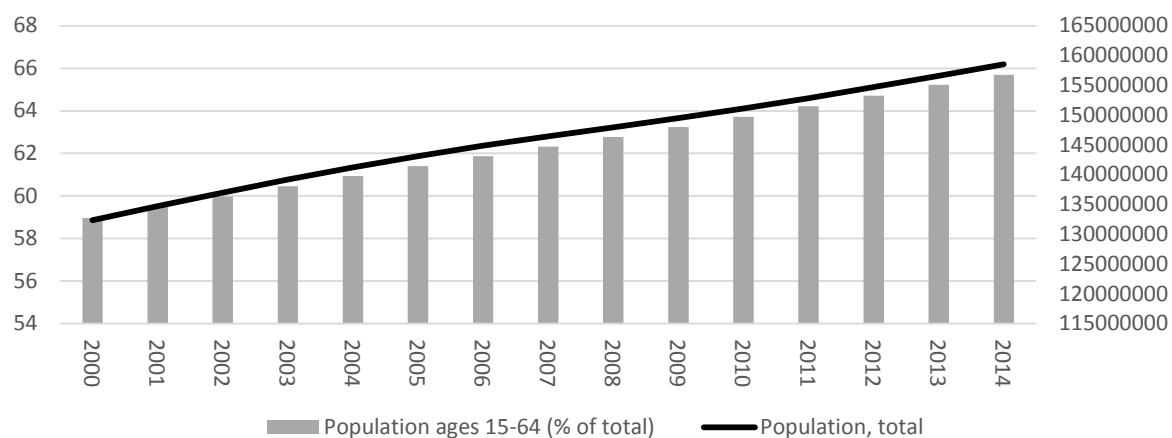
competition framework including the creation of a dedicated regulatory body is necessary and in 2012 - the first competition act was enacted after a decade long deliberation (UNCTAD, 2013c). This law defines and outlaws abuses of market power which include the creation of barriers to entry for other participants and is accompanied by a regulatory body (the Bangladesh Competition Commission).

Although this is positive development, as discussed by UNCTAD (2013c) it may take years for the Commission to gain the expertise, authority and confidence to enforce appropriately. However, the Bangladesh Tariff Commission, active since 1992 has taken action to protect indigenous firms including in relation to the prevention of dumping and other unfair trade practices (*Ibid*).

### **7.2.9 Human Resources and Labour Market Policy**

The challenge of expanding formal employment opportunities is a formidable one in Bangladesh. The birth rate has slowed (from 27 per 1000 people to 2000 in 2013) with some bearing on the population growth rate (Figure 9) which has also slowed (from 1.8 percent annual increase in 2000 to 1.2 percent in 2013); the age dependency ratio was approximately 46 percent in 2013 (down from 62 percent in 2000).<sup>212</sup>

**Figure 9: Total Population and Working Age Population**



Source: World Bank, World Development Indicators, accessed 25 June 2015

It is estimated that, between 2000 and 2010, the economy added an additional 15.1 million new jobs to the country, but over the same period there were around 20.1 million new entrants to the labour market (World Bank, 2012b: 100).

212 World Bank World Development Indicators, accessed 25 June 2015.

Underemployment rates increased from 16.6 percent to 20.3 percent over the same period (*Ibid*). Despite this worrying data, there is no section in World Bank (2012b) on skills development although there is one on remittances and the remittance-growth nexus.

Limited skills development is a major challenge. For example, a survey of 1000 garment firms in 2011 found that skills shortages were a disadvantage to production (World Bank, 2012b). The literacy rate in Bangladesh is around 60 percent, compared to 50 percent in 2001, which indicates some improvement in formal education provision.<sup>213</sup> Despite this, shortages in skilled labour are discussed by UNCTAD (2013c) as being particularly severe: less than 2 percent of the population have obtained tertiary education, with 400,000 students enrolled in university compared to 7.5 million in secondary school. These challenges are clearly reflected in the statistics presented in Table 23. Investments in human capital are discussed by World Bank (2012b) as being of utmost importance so as to raise GDP growth rates and address underemployment, but hindered by an inability to address capital flight and incentivise public investments.

**Table 23: Education Expenditure and Enrollment Indicators**

	2005	2006	2007	2008	2009	2010	2011	2012
Government expenditure per student, primary (% of GDP per capita)	..	9.0	9.0	8.5	7.8	..	..	
Government expenditure per student, secondary (% of GDP per capita)	..	14.9	12.5	11.9	10.6	12.9	12.1	
Government expenditure per student, tertiary (% of GDP per capita)	..	43.1	31.9	30.8	24.5	..	17.4	
School enrollment, primary (% gross)	98.5	99.7	99.3	97.6	-	-	-	..
School enrollment, secondary (% gross)	45.0	45.6	46.4	44.5	48.2	49.9	50.8	53.6
School enrollment, tertiary (% gross)	6.2	7.1	7.7	8.6	10.5	..	13.2	13.2
Secondary education, vocational pupils	192491	219086	254122	344629	367409	372524	364064	123746

Source: World Bank, World Development Indicators, accessed 25 June 2015

### **Vocational Skills and Training**

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213 World Bank, World Development Indicators, accessed 25 June 2015.

The more mainstream interpretation of the Desh-Daewoo collaboration generally refers to the transfer of knowledge gained through the movement of labour from the first Desh garment factory towards others (Rhee, 1990; Easterly, 2002). This interpretation is referred to as a prime example of knowledge spillovers and results from an assumption of non-rivalry, which subsequently led to external economies and increasing returns. For example, Rhee (1990) discusses technology diffusion in the form of managers moving from one firm to another. This is because the majority of Desh's initial workers left to set up their own firms or join other newly established local firms (Rhee, 1990). Based on interviews including with those trained as part of the Desh-Daewoo collaboration, Mostafa and Klepper (2009) find that tacit knowledge transfer were crucial, similarly the turnover of ex-Desh workers to newly established factories.

However, the initial seeds of the sector were domestic firms<sup>214</sup> which further to the initial training and collaboration with Daewoo subsequently became the breeding grounds for the development of a pool of domestic workers, and traders. Mostafa and Klepper (2009) clearly demonstrate how the role of foreign firms in the growth of the Bangladesh industry was overall limited, which is consistent with other empirical research on the contribution of foreign firms to the productivity of domestic entrants in their industry.<sup>215</sup> Drawing attention to the important role of traders within the sector, Mottaleb and Sonobe (2011) note that growth in the sector can only have been sustained through the continuous learning of advanced skills and know-how. Moreover, that a one-off infusion of knowledge is insufficient to explain three decades of growth. They add an extra dimension to their analysis: the division of labour between manufacturers and traders which facilitated the expansion of the industry, in addition to continuous learning from abroad by highly educated entrepreneurs.

Although there is general agreement on the important role played by human capital as a means of technology diffusion the distinction between different types of agents within the sector - including traders - is rarely undertaken. By exploiting Daewoo's brand names and marketing networks, Bangladesh managed to overcome early

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214 See Mostafa and Klepper (2009).

215 Mostafa and Klepper (2009) with reference to Aitken and Harrison (1999).

barriers to entry and build a reputation as a reliable supplier of quality garments in international markets (Rock, 2001). By developing these domestic capabilities and institutionalising the knowledge obtained, there was no longer a need to rely on Daewoo as an intermediary to access end-markets. This means a change in internal GVC governance structures occurred as producers' capabilities developed, supported by external governance and the effective management of learning rents, which subsequently reduced the need to rely on East Asian lead firms as intermediaries.

A more recent challenge however, relates to the failure to subsequently align public policies, including the provision of vocational skills and training. This is reflected in the results obtained from recent firm-level surveys. For example, a survey of Japanese firms with local subsidiaries cited inadequate worker qualifications and local staff abilities among their top five business problems (JETRO, 2011). This view was also expressed through key informant interviews and the need for leadership and managerial training is required, in addition to greater interaction with higher education providers.

#### **7.2.10 Summary of External Governance**

The more directive approach adopted towards integration with the textiles and clothing GVC, with elements of a NIS apparent, has resulted in major differences in industrial structure compared to Cambodia. The more directive approach towards GVC integration changed GVC governance structures and enabled learning by doing to occur. Backward linkage development has facilitated competitiveness and further reduced reliance on intermediaries.

More recently, however, like Cambodia, Bangladesh faces a challenging political economy.<sup>216</sup> Recent wage increases in the sector have not necessarily been based on productivity improvements induced by skill acquisition, but have instead been redistributive. The influence of external GVC governance on internal relations between firms are described in the following sub-sections. More recent barriers to

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<sup>216</sup> Emergency laws have been enacted periodically since 2007-8 due to an on-going stand-off between rival political parties, in spite of election results.

entry in the sector are also described in terms of increased movement towards the use of compliance mechanisms by buyers.

### 7.3 Internal GVC Governance

#### 7.3.1 Barriers to Entry

Unlike Cambodia, Bangladesh opted not to adhere to labour standards in order to benefit from an increased quota, notably in the US market. Instead a strategy of maximizing Bangladesh's ability to fulfil the general quota was undertaken. A high volume strategy was pursued, as opposed to the high value strategy of Cambodia (which was a late entrant, relative to Bangladesh).

More recently, in light of the Rana plaza disaster and the potential for the EU to reverse the GSP RoO for Bangladesh in January 2011 because of labour market abuses<sup>217</sup> it is posited that the textiles and clothing is likely to consolidate in the future due to the acquisition of smaller firms by large ones.<sup>218</sup> The US, working with the ILO, has warned Bangladesh about labour standards and also threatened action. These actions have the potential to raise barriers to entry within the sector and exclude non-compliant firms (which may experience both technical as well as financial barriers to proving compliance).

Increased pressure to adhere to standards and compliance issues will affect firm-level organisation. This is because larger firms have a stronger capacity to upgrade both factory and labour standards. However, it is simply too soon to review their effect: the Better Factories Factory Bangladesh programme only commenced in 2014. Recent tragedies in the sector seem less to do with labour standards per se but more related to general health and safety standards, in turn related to building regulations, town planning and the authority as well as capacity of local government.<sup>219</sup> Hence, broader public policy considerations may have become pressing within the sector. In the following sub-section, the available evidence on firm-level organisation within the

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<sup>217</sup> There have also been recent rulings in the US rated to market access for Bangladesh in view of the Rana Plaza tragedy.

<sup>218</sup> See World Bank (2014a).

<sup>219</sup> As discussed by Ahmed and Nathan (2014) even the headquarters of BGMEA was declared by the high court as an illegal construction.

sector is reviewed, with particular emphasis on changes overtime compared to Cambodia, the major case-study.

### 7.3.2 Firm-level Organisation

At the time of Bangladesh's independence, only nine export-orientated garment manufacturing firms existed, which generated export earnings of barely US\$1 million (Yunus and Yamagata, 2014). The conditions that these initial export-orientated units operated under were unfavourable, as buyers from Hong Kong included such requirements as the fabric to be utilized by vendors and so on (Yunus and Yamagata, 2014: 84). Since that time and the initial seeding process undertaken, the sector has experienced tremendous growth.

The data presented by Asuyama et al. (2013) and Fukunishi and Yamagata (2013) provides an up to date comparison of Bangladesh to the main case-study Cambodia. Although firms in Bangladesh are smaller in size and more likely to be domestic rather than foreign-owned, the sheer number of firms and scale of production in Bangladesh dwarfs that of Cambodia. The data presented in Table 24 suggests a total number of workers in the region of 1.2 million, with significant multiplier effects in a country with 160 million, of which the majority live below the poverty line.

**Table 24: Number of Firms and Workers for Cambodia and Bangladesh**

Indicator	Cambodia	Bangladesh
No. of firms	196	3,115
No. of workers (mean)	903	399
No. of workers (median)	559	313
No. of workers (maximum)	9,500	7,600
Number of workers (minimum)	18	18
Number of workers, standard deviation	1,098	373

Source: Based on the calculations in Asuyama et al. (2013) and Fukunishi and Yamagata (2013)

Note: based on data obtained from GMAC as of August 2003 and BGMEA in 2003.

Out of a survey of 70 firms, Alam and Natsuda (2013) find that 97 percent are domestically owned. According to Astarloa et al. (2012) the 2008-9 report of the Bangladesh Export Processing Zones Authority (BEPZA) identifies 305 firms operating in EPZs, of which 185 (60 percent) were 100 percent foreign-owned, 48 (15 percent) were joint ventures and 74 (25 percent) were 100 percent local ventures. The analysis undertaken by Astarloa et al. (2012) finds that firms located in EPZs experienced growth in the extensive margin (product range), rather than intensive

margin (quantities); their estimates suggest that exports per EPZ are about three times higher than the firms outside EPZs.

In relation to the distribution of value added within the sector, Natsuda et al. (2010) discuss how 60 percent accrues to the retail end through buyers and traders, 20 percent to producers and 20 percent for logistics and insurance. Hence, the buying and trading nodes are highly lucrative. Others also draw attention to the important role of intermediaries and traders in the sector. For example, Alam and Natsuda (2013)<sup>220</sup> discuss the important role played by domestic intermediaries and estimate the following:

- 55 firms export through international buyers.
- 11 firms export both directly [to retailer] and through international buyers.
- 3 firms channel their exports through both international traders and buyers.

Although they do not clearly define the characteristics of the “buyers” and “traders” they refer to, they do note major buyers as including the following: Wal-Mart, H&M, GAP, Adidas and Kohls. Domestic firms relationships with these buyers are generally viewed positively according to the analysis of Alam and Natsuda (2013): 31 (45 percent) of firms surveyed received technical and financial support from buyers, assisting increases in productivity.

As discussed by Mottaleb and Sonobe (2011), traders are involved with international procurement, marketing and merchandising and a limited number of these also provide high-valued services such as sample marking and design reengineering. In relation to the interactions between manufacturers and traders, the evidence presented by Mottaleb and Sonobe (2011) suggests that manufacturer’s dependence on traders’ declines over time. This may be a result of capability increases, or due to the employment of foreign experts.

This conclusion can be drawn from the fact that older firms are less likely to use traders and more likely to employ foreign experts as shown by Table 25 below. It is also supported by the findings of Alam and Natsuda (2013) who conclude that the

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<sup>220</sup> Their sample was not representative.

proportion of trading houses that hire foreign experts in marketing is greatest amongst the long established trading houses and lowest for newly trading houses. The market orientation of these different types of firms is unfortunately, not explored further.

**Table 25: Manufacturers and Traders Relations**

	Firms operating in 1994	Firms Operating 1999	1995- Firms onwards	Operating 2000
N	25	34	43	
<b>% Export value handled by traders</b>				
1998	51.9			
2002	42.0	60.8		
2005	34.2	54.4	59.6	
<b>% Manufacturers hiring foreign experts</b>				
1998	4.2			
2002	20.0	8.3		
2005	32.0	12.5	18.6	

Source: Adapted from Mottaleb and Sonobe (2011)

Overall, the data presented by Mottaleb and Sonobe (2011) suggests the division of labour between traders and manufacturers includes the former providing the latter with information on accessing end-markets. Although this initial collaboration is important, over time, they find manufacturers subsequently reduce their dependence on traders as they learn these skills and retain this knowledge in-house. Some domestic traders also own factories and are therefore backward vertically integrated (Table 26).

**Table 26: Traders that became Manufacturers**

	Firms operating in 1994	Firms Operating 1999	1995- Firms onwards	Operating 2000
N of traders in the sample	16	16	8	
<b>% of traders who own a garment factory</b>				
1998	31.3			
2002	50.0	37.5		
2005	50.0	68.7	37.5	

Source: Adapted from Mottaleb and Sonobe (2011)

Although exports from Bangladesh are largely concentrated in two major markets - the EU and US - the survey results of Alam and Natsuda (2013) find the situation started to change after the phase out of the MFA in 2005. This is because during the MFA period 21 out of 52 firms exported to a third party country and in the post-MFA period, 66 out of 69 firms exported to a third party country (*Ibid*: 23). These findings are discussed by Alam and Natsuda (2013) as matching the findings of others,

including the BGMEA (2012) who note that while garment exports to the US and EU accounted for 98.1 percent in 2001, there was been a major increase in those destined for other markets since 2005.

The government has actively supported market diversification efforts; this includes through providing a three-year package of incentives to support the discovery of new markets since 2008; exporters have been provided with small cash incentives to do so between 2009-10 (Staritz and Frederick, 2012). These opportunities have also been taken up by traders and other entrepreneurs in the sector. However, the possible integration of Bangladesh into other regional production networks and triangular production networks also deserves further attention. This is because, as described by UNCTAD (2013c) while TNCs have a rather limited direct presence in Bangladesh, their effect remains critical: most Bangladeshi firms operate as contract manufacturers and under outsourcing arrangements for global brands, which mostly domestic firms are able to manage.

In view of the process of GVC engagement and more directive approach adopted, the emergence of tiers of suppliers in the sector is discussed in detail by Ahmed and Nathan (2014) who divide firms in the sector into three tiers as follows:

- Tier 1 firms: secure orders from buyers or intermediaries. These are generally larger units with around 2,000 or more workers. These firms account for around 20 percent of the total number of firms in the industry, with an estimated 1000 in operation.
- Tier 2 firms: medium sized units with a few hundred workers. These are subcontracted by Tier 1 firms and used to fill capacity gaps or to produce specific product lines. Most of these do not obtain orders directly from buyers and are also outside of the compliance ‘net’. However, there are instances of direct orders, if Tier 1 firms are unable to supply all orders.<sup>221</sup>
- Tier 3 firms: supply inputs to other firms including trim and accessories. These suppliers of various accessories have arisen using FDI to establish production.

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<sup>221</sup> The Tazleen factory, where a fire killed more than a hundred workers was one such medium sized factory which had obtained some direct orders from a larger buyer (including Benneton).

It is estimated that around 72 percent of European and US buyers now source products directly from Bangladesh rather than through an intermediary (McKinsey and Company, 2011). According to Khatun et al. (2008), direct sales increased from 45 to 77 percent in EPZ firms and from 24.3 percent to 56.8 percent in non-EPZ firms. Around 84 percent of buyers described their relationships in Bangladesh as being long term (McKinsey and Company, 2011).

Whilst others have noted that a hierarchical governance structure seems prevalent for Bangladeshi garment suppliers to global lead firms (Curran and Nadvi, 2015)<sup>222</sup> it seems a more relational type of governance exists between the top tier of Bangladeshi firms and buyers; a more quasi-hierarchical structure seems to exist for lower tiers. Different types of governance are likely to exist for different tiers of firms in operation within the sector, in view of their market orientation.<sup>223</sup> As described by Keane (2012) given the ability of Bangladesh to exert some control over its backward linkages, there are aspects of a more producer rather than buyer-driven value chain in operation.<sup>224</sup> The influence of these internal value chain governance structures on learning by doing processes are described in the following sub-sections.

## **7.4 Levels of Learning by Doing in Bangladesh**

In this section we describe the identifiable learning by doing processes apparent for Bangladesh. This analysis begins at the micro level, before moving to meso and macro level analyses.

### **7.4.1 Learning by doing at the Firm Level**

Bhakt et al. (2009) explored the extent and determinants of the profitability of the garment industry in Bangladesh and find that, while there is a significant scale effect in profitability and productivity, there is no supporting evidence for the positive effect of agglomeration on industrial upgrading. They do not, however, examine differences in performance between domestic and foreign firms, nor explore the technological capabilities of Bangladeshi firms.

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222 Curran and Nadvi (2015)

223 This information was also corroborated through firm-level interviews.

224 As discussed by Keane (2012).

We are limited by a lack of available secondary data which could have been used to explore these aspects further.<sup>225</sup> Data limitations severely constrain our ability to reach a conclusion regarding identifiable firm-level learning by doing processes through the use of quantitative research methods. Instead a comparison of firm-level statistics for Bangladesh is undertaken compared to Cambodia; this suggests avenues for future research which are subsequently taken up in the next set of GVC case-studies.

As can be seen from Table 27, firms in Bangladesh tend to be small in terms of number of workers, as well as machines per worker compared to Cambodia. The ratio of skilled workers is slightly higher in Cambodia compared to Bangladesh. Interestingly, firms in both Cambodia and Bangladesh seem to have a similar age, which at least on the surface is suggestive of similar levels of accumulated knowledge and experience.

Cambodian firms are much more capital intensive compared to Bangladeshi firms. Unfortunately, we are not able to extend this analysis further in order to differentiate between firm-level characteristics according to marketing channels and distinguish between different tiers of firms and their respective capabilities. Had the data permitted, this would have been a logical next step in the analysis.

**Table 27: Descriptive Statistics for Bangladesh and Cambodian Firms**

Country	Indicator	Domestic	Other	Total
Bangladesh	Total Production (Dozens of items)	83796160	1.03E+08	84452121
	Age (No. of years in operation)	5	5	5
	Number of workers (Size)	234	549	244.67
	Machines per worker (CAP)	0.4	0.5	0.4
	Ratio of skilled to unskilled workers	0.09	0.08	0.09
	N	224	8	232
Indicator	Domestic	Other	Total	
Cambodia	Total Production (Dozens of items)	447946	237596	303331
	Age (No. of years in operation)	5	4	5
	Number of workers (Size)	1154	1004	1051.16
	Machines per worker (CAP)	3.8	3.1	3.3
	Ratio of skilled workers to unskilled	0.12	0.09	0.1
	N	50	110	160

Source: Firm-level data reported in Yamagata (2006), available at: <http://www.ide.go.jp/English/Data/index.html> [accessed 10 June 2010]. The number of domestic firms is high compared to other estimates because of differences in calculation and the inclusion of joint ventures. Other firms are those with 100 foreign ownership.

#### 7.4.2 Learning by Doing at the Sectoral Level

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<sup>225</sup> Field work was not undertaken in Bangladesh.

Bernhardt and Milberg (2011) find that Bangladesh, like Cambodia, was an economic upgrader in the textiles and clothing value chain over the period 2000-2009. This is because of impressive growth in world market share over this period and increases in unit values: 373.89 percent (market share) and 53.88 percent (unit value). However, their broad aggregate analysis overlooks the functional upgrading which has occurred in Bangladesh and important differences in relative product performance across markets.

More recent trade data analysis shows that Bangladesh's total exports of textiles and clothing (HS50-63) amounted to US\$108,781,000, of which there is a fairly even divide between two products: knit and not knitted apparel.<sup>226</sup> Growth in knitted or crocheted fabrics (HS60), man-made filaments (HS54), other made up textiles articles (HS63) and cotton (HS52) have grown particularly fast over the period 2002 to 2011.

Although Bangladesh produces some textiles, it is not a producer of cotton, which suggests some re-exporting is taking place. As discussed by Curran ad Nadvi (2015), further to the relaxation of the EU's double transformation rule in 2011 there were concerns that the domestic textiles industry could be undermined and the substitution of local fabric with more competitive imports encouraged (Rahman, 2012). The available evidence suggests some imports of textiles have increased and this includes of cotton fabric (HS52).<sup>227</sup>

The EU is the main destination for three of the top exports analysed at the HS2-digit level as shown by Table 28. These include articles of apparel knitted and not knitted, in addition to other made up textiles. Growth in knitted apparel has been particularly strong, with a substantial increase in export value apparent through a comparison of the average value in 2002-4 compared to 2009-2011. In the case of cotton, the main destination market is unspecified, followed by China and India.<sup>228</sup>

**Table 28: Top Five Marketed in Latest 3 Year Period**

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226 Source: UN COMTRADE, 10.7.15 (converted from USD thousands to millions).

227 However, interesting Curran and Nadvi (2015) note that there were no complaints from Bangladeshi textiles producers further to the 2011 RoO change and no lobbying attempts to reverse it. Because this change in the sourcing derogation is so recent, further analysis which specifically focuses on the textiles sector is required, which is beyond the scope of this analysis.

228 This result deserves further attention beyond the scope of this analysis.<sup>8</sup>

HS2	Description/Market	Average 2002-4		Average 2009-11	
		Value (US\$ 000)	Share of total chapter exports	Value (US\$ 000)	Share of total chapter exports
<b>61</b>	<b>Articles of apparel and clothing accessories, knitted or crocheted</b>				
All countries	2,191,393	100.0%	8,064,152	100.0%	
EU28	1,647,779	75.2%	5,840,012	72.4%	
United States	419,708	19.2%	990,283	12.3%	
Canada	78,157	3.6%	352,558	4.4%	
Turkey	1,784	0.1%	258,604	3.2%	
Australia	1,393	0.1%	104,567	1.3%	
<b>62</b>	<b>Articles of apparel and clothing accessories, not knitted or crocheted</b>				
All countries	2,918,260	100.0%	7,364,189	100.0%	
EU28	1,404,479	48.1%	3,166,357	43.0%	
United States	1,325,225	45.4%	3,117,620	42.3%	
Canada	118,027	4.0%	386,576	5.2%	
Turkey	2,582	0.1%	177,420	2.4%	
Japan	11,354	0.4%	140,803	1.9%	
<b>63</b>	<b>Other made up textile articles; sets; worn clothing and worn textile articl ...</b>				
All countries	247,579	100.0%	762,206	100.0%	
EU28	92,532	37.4%	351,485	46.1%	
United States	66,737	27.0%	143,849	18.9%	
India	1,189	0.5%	60,291	7.9%	
Canada	11,791	4.8%	53,271	7.0%	
Fm Sudan	14,808	6.0%	29,778	3.9%	
<b>53</b>	<b>Other vegetable textile fibers; paper yarn and woven fabric of paper yarn</b>				
All countries	216,250	100.0%	706,193	100.0%	
Turkey	27,154	12.6%	145,780	20.6%	
India	7,406	3.4%	106,268	15.0%	
China	11,446	5.3%	90,114	12.8%	
Iran, Islamic Rep.	32,696	15.1%	77,392	11.0%	
Pakistan	25,389	11.7%	58,085	8.2%	
<b>52</b>	<b>Cotton</b>				
All countries	21,002	100.0%	105,258	100.0%	
Unspecified	7,740	36.9%	71,475	67.9%	
China	191	0.9%	8,451	8.0%	
India	692	3.3%	6,147	5.8%	
EU28	3,212	15.3%	5,709	5.4%	
Turkey	4	0.0%	3,363	3.2%	
<b>58</b>	<b>Special woven fabrics; tufted textile fabrics; lace, tapestries; trimmings; ...</b>				
All countries	37,280	100.0%	132,938	100.0%	
United States	25,756	69.1%	68,498	51.5%	
EU28	8,664	23.2%	26,403	19.9%	
Canada	1,404	3.8%	16,953	12.8%	
Unspecified	448	1.2%	8,453	6.4%	
Australia	72	0.2%	4,394	3.3%	
<b>56</b>	<b>Wadding, felt and non-wovens; special yarns, twine, cordage, ropes and cabl ...</b>				
All countries	30,675	100.0%	31,816	100.0%	
Japan	4,007	13.1%	10,153	31.9%	
India	777	2.5%	5,017	15.8%	
Turkey	7,907	25.8%	3,067	9.6%	
EU28	5,001	16.3%	2,777	8.7%	
United States	4,217	13.7%	2,509	7.9%	
<b>55</b>	<b>Man-made staple fibers</b>				
All countries	6,593	100.0%	28,526	100.0%	
Unspecified	1,807	27.4%	24,759	86.8%	
China	141	2.1%	1,019	3.6%	
Turkey	3	0.0%	554	1.9%	
Brazil	-	0.0%	265	0.9%	
Hong Kong, China	147	2.2%	248	0.9%	
<b>54</b>	<b>Man-made filaments</b>				
All countries	4,284	100.0%	23,099	100.0%	

	Unspecified	2,315	54.0%	20,047	86.8%
	India	6	0.2%	1,211	5.2%
	Turkey	8	0.2%	718	3.1%
	Vietnam	203	4.7%	368	1.6%
	China	179	4.2%	192	0.8%
<b>60</b>	<b>Knitted or crocheted fabrics</b>				
	All countries	3,265	100.0%	20,957	100.0%
	Unspecified	2,456	75.2%	16,808	80.2%
	India	48	1.5%	2,576	12.3%
	Turkey	-	0.0%	247	1.2%
	United Arab Emirates	4	0.1%	216	1.0%
	Russian Federation	-	0.0%	169	0.8%

Source: UN COMTRADE, 10.7.15 (converted from USD thousands to millions)

According to Ahmed and Nathan (2014) and as indicated in Table 28 exports to Japan from Bangladesh have risen rapidly in recent years. In view of these new trading relationships, they describe how local offices have been established by Japanese buyers to monitor quality and ensure use of appropriate technology. Finally, the emergence of markets including India and Brazil are also apparent. Overall, the ability to supply alternative market “all point towards the strengthening of the bargaining position of Bangladeshi supplier vis-à-vis Buyers” (*Ibid*: 13).

#### ***Product Upgrading***

Specialisation in the knitwear segment of the value chain has enabled Bangladesh to benefit from duty free market access, which creates a margin of around 12 percent on the final retail value of the product (Curran and Nadvi, 2015). Within the EU market, in particular, these sales have grown. The unit value of these exports is also considerably compared to the US as shown by Table 29, which presents values for a selected number of products identified at the HS6-digit level.<sup>229</sup>

The reasons for better performance apparent in the EU market for knitwear compared to the US are explained by Curran and Nadvi (2015) in relation to tariff reduction

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229 Though they refer to the use of TradeMap it is important to point out that this database does not provide information on unit values. Therefore it is reasonable to assume that top exports were identified at the HS6-digit level and information on unit values obtained from the EU (Eurostat) and US (Otexa).

made available in the EU market compared to the US, which is a reasonable assumption. In both cases, the value captured is likely to be high because of the role of domestic inputs into production as well as the dominance of domestic firms within the sector. However, the EU market is likely to be even more lucrative in view of the tariff rent made available.

**Table 29: Unit Value Prices of Bangladeshi Exports in EU and US Markets**

Product		2010	2011	% +/-	2012	% +/-	2013	% +/-
Knitwear								
T-Shirts	EU	4.04	4.16	3.1	3.94	-5.4	3.73	-5.4
	US	1.64	1.85	12.8	1.84	-0.5	1.81	-1.6
Cotton jumpers	EU	5.77	6.42	11.2	6.04	-5.9	5.79	-4.1
	US	2.58	2.99	15.9	2.81	-6.0	2.94	4.6
Woven goods								
Men's trousers	EU	6.11	7.28	19.1	7.31	0.4	6.94	-5.0
	US	4.84	5.40	11.6	6.10	13.0	5.48	-10.2
Women's skirt	US	4.86	5.69	17.2	5.79	1.7	5.67	-2.0
	US	4.27	5.10	19.4	4.82	-5.5	4.62	-4.1
Women's trousers	EU	5.61	6.62	17.9	6.50	-1.8	6.39	-1.8
	US	4.73	5.53	16.9	5.63	1.8	5.39	-4.3

Source: Adapted from Curran and Navdi; CIF figures are used for all of the products analysed (though these are not actually defined, results for all of the products presented in Table X are available).

It is important to point out though, that unit values have seemingly been on the decline for knitwear products such as t-shirts destined for the EU market compared to the US market. The picture is more mixed regarding woven goods exports destined to both markets. In order to further substantiate the results of Curran and Navdi (2015), the f.o.b. and c.i.f. unit values of the top five exports from Bangladesh at the HS6 digit were obtained from UNComtrade. The results summarised in Table 30 clearly demonstrate the challenges of using unit value data. In some cases, there is no data available, e.g. for the EU.<sup>230</sup> There are some major differences between the values on an annual basis.

**Table 30: Unit Value Analysis of Major Textiles and Clothing Exports**

		2005	2006	2007	2008	2009	2010	2011
<b>610910 t-shirts, singlets and other vests of cotton, knitted or crocheted</b>								
Export f.o.b.	World	1.14	0.99	1.22	0.01	0.01	10.03	21.60
	EU28	1.15	1.12	1.29	0.02	0.02	10.40	22.16
	USA	1.14	1.08	1.04	0.03	0.08	8.80	19.26
	Canada	1.10	1.03	1.01	0.01	0.05	10.15	20.17
		<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>610910</b>	<b>t-shirts, singlets and other vests of cotton, knitted or crocheted</b>							

230 This challenge was also encountered by Curran and Nadvi (2015) who chose to use the average of the closest two years for which data were available.

Import c.i.f.	EU28 (\$/item)	2.13	2.38	2.27	2.48	2.71	2.78	3.01
	EU28 (\$/kg)							
	USA (\$/item)	1.19	1.33	1.34	1.29	1.19	1.37	1.70
	Canada (\$/item)	1.41	1.42	1.56	1.70	1.82	1.85	2.31
		2005	2006	2007	2008	2009	2010	2011
<b>620342</b>	<b>men's or boys' trousers, bib and brace overalls, breeches and shorts, of cotton (excl. knitted or crocheted, underpants and swimwear)</b>							
Export f.o.b.	World	2.61	2.37	3.95	3.29	4.92	11.10	23.83
	USA	2.72	2.38	7.30	3.24	4.71	10.61	21.85
	EU28	2.55	2.36	2.74	3.45	5.11	11.46	25.38
	Canada	2.45	2.33	2.32	2.90	4.59	11.18	21.29
		2005	2006	2007	2008	2009	2010	2011
<b>620342</b>	<b>men's or boys' trousers, bib and brace overalls, breeches and shorts, of cotton (excl. knitted or crocheted, underpants and swimwear)</b>							
Import c.i.f	USA (\$/item)	5.03	4.83	4.85	12.89	4.87	4.84	5.40
	EU28 (\$/item)	6.40	6.72	7.08	7.50	8.27	8.29	9.06
	EU28 (\$/kg)							
	Canada (\$/item)	5.27	5.16	5.46	5.28	5.53	5.88	6.74
		2005	2006	2007	2008	2009	2010	2011
<b>630231</b>	<b>bed-linen of cotton (excl. printed, knitted or crocheted)</b>							
Export f.o.b.	World	5.38	5.47	5.77	6.08	6.44	7.31	16.42
	EU28	5.40	5.85	5.84	6.09	6.40	7.31	16.16
	Canada	5.10	5.34	5.64	5.97	6.69	7.22	19.03
	USA	5.75	5.30	5.55	5.69	6.53	7.81	16.25
		2005	2006	2007	2008	2009	2010	2011
<b>630231</b>	<b>bed-linen of cotton (excl. printed, knitted or crocheted)</b>							
Import c.i.f.	EU28	5.96	5.89	6.10	6.01	7.21	7.70	10.61
	Canada	9.60	9.60	10.83	10.62	10.56	9.85	10.43
	USA	6.97	6.91	6.47	10.62	7.76	9.87	11.83

Source: UN COMTRADE, 10.7.15.

Nevertheless, looking across the period 2005 to 2011, in all cases except in relation to bedlinen, unit values are higher for the EU market compared to the US and this includes both with regards to f.o.b. and c.i.f. values.<sup>231</sup> Overall, the available evidence suggests product upgrading has occurred in the case of Bangladesh, and particularly compared to Cambodia.

#### ***Process Upgrading***

Increased exports are an indicator of process upgrading. Analysis of employment levels and skills helps to unpack how increases were achieved. Bernhardt and Milberg (2011) find that the number of workers employed in the sector in Bangladesh increased to 1 million in 1998 from 720,000 in 1993. This finding which is similar to that of Yunus and Yamagata (2014) is presented in Table 31.

**Table 31: Employment Levels**

Fiscal Year	Woven Apparel	Knitwear
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<sup>231</sup> There are some major differences apparent between the f.o.b. values reported by Bangladesh compared to the c.i.f. values reported by importers which seem less severe for bedlinen exports.

	Total	Male	Female	Total	Male	Female
1979-80	65	65	0	1,319	1,285	34
1989-90	175,548	50,463	125,085	11,946	11,504	442
1999-00	1,017,072	329,511	687,561	50,733	23,619	27,114

Source: Yunus and Yamagata (2014).

Success in the industry is generally put down to low wages (Razzaque, 2005; World Bank, 2005). Increased employment in the sector is not associated with a commensurate increase in wages (Bernhardt and Milberg, 2011). However, in 2006 minimum wages were revised for the first time in 12 years by a massive 78.8 percent (Yunus and Yamagata, 2014). There have been further wage increases.

According to the World Bank (2014a) the minimum wage for garment workers was updated in December 2013 and the minimum salary for entry level workers, Grade 7, increased to Tk 5300 (US\$68) per month – this is a 76.7 percent rise compared to the previous level of Tk 3000 (US\$38). A comparison of wages between Cambodia and Bangladesh as of 2008 is presented in Table 32.

**Table 32: Monthly Wages in Bangladesh compared to Cambodia**

Monthly Wage, USD	2002	2008		Nominal Change (%)	Real Change (%)
	Nominal	Nominal	Real		
Bangladesh	Manager/ Executive	405	363	275	-10.3
	Other officers	188	224	170	19.1
	Engineer	101	176	133	74.0
	Supervisor	96	121	92	26.7
	Operator	43	69	52	59.9
	Helpers	25	35	26	39.5
Cambodia	Manager/ Executive	615	700	454	13.9
	Other officers	144	256	166	77.3
	Engineer	154	196	127	27.3
	Supervisor	129	201	130	56.2
	Operator	58	93	60	61.9
	Helpers	48	87	56	81.5

Source: Adapted from Asuyama et al. (2013) and Fukunishi and Yamagata (2013).

### ***Skills Development***

Regarding skills development, Mottaleb and Sonobe (2011) and Alam and Natsuda (2013) pay particular attention to the education level of factory managers. For example, Mottaleb and Sonobe (2011) argue that the education level of entrepreneurs

matters most for the future development of the sector, not a general increase in the skill level of workers. Traders who received formal training abroad have provided higher-valued services for manufacturers and contributed more to the proliferation of manufacturers (*Ibid*). Regarding the movement of skilled labour within the sector, overall a tendency for foreign enterprises to simply be replaced by indigenous domestic enterprises as service providers, manufacturers and material suppliers is described by Yamagata (2006).

However, skills development remains on the job with limited institutional links to vocational skills development bodies or incentive structures. It is estimated that the current shortage of skilled labour equates to around 25 percent of the total labour force in the sector: just to maintain its current average rate of growth the industry needs an additional hundred thousand skilled workers.<sup>232</sup> There has been a failure thus far to integrate workforce development within factory management, a complaint also raised by key informants interviewed. The available evidence therefore suggests process upgrading has been achieved without a commensurate increase in the skills base, as proxied by workers skills endowments.

#### ***Capital investments***

There is evidence of an increase in the average stock of machinery and hence capital investments in the sector. For example, Quasem (2012) describes how the import of textile machinery, in particular, marked a significant increase in the previous decade.<sup>233</sup> The Government also actively supports industry associations and trade fairs so as to showcase current and new technologies. Generally though, the sector is much less capital intensive compared to Cambodia (which lacks the textiles backward linkage).

#### ***Functional Upgrading***

Bangladesh is a preferred rather than marginal supplier (Gereffi and Frederick, 2010). As we have already emphasised, many of the Desh-Daewoo trainees did not become garment manufacturers but instead became traders, acting as the intermediaries

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232 The results are presented in UNCTAD (2013c) with reference to other studies undertaken in the sector.

233 Bangladesh imported textile machineries mostly from Japan and China in the 1990s (*Ibid*).

between manufacturers and foreign buyers.<sup>234</sup> The most up-to-date summary of functional upgrading processes in the sector for Bangladesh is undertaken by Alam and Natsuda (2013). They find that most firms are engaged in what they term FOB-1 and FOB-2 production, which they describe as being analogous to the OEA, OEM and ODM description and upgrading trajectory used within the GVC literature.<sup>235</sup> The terms are defined as follows:

- FOB-1 is a step above CMT production, whereby producers take responsibility for the sourcing of intermediate materials and production.
- FOB-2 includes the sourcing of intermediate materials and the undertaking of all levels of production and design.

Out of the 70 firms surveyed, 85 percent (56 firms) were involved with FOB-1 production, 6 percent (4 firms) involved with FOB-2 production, and 9 percent (6 firms) with traditional CMT arrangements. They note that only four of the 70 firm's surveyed offer finished products to retailers. This includes providing all necessary production material, including design and branding.

Although they do not distinguish between the end-markets for these products they do note that “most of the garment firms in Bangladesh are owned by domestic entrepreneurs who have limited capital, less experience, and little knowledge to carry out all necessary stages of production” (Alam and Natsuda, 2013: 27). Competency in design was noted as a major barrier to entry by key informants in the sector. Overall, therefore they conclude that although there is evidence of functional upgrading from CMT to FOB-1 production, the ability of firms to upgrade to FOB-2 is doubtful. They make reference to broad-based productive constraints, including weak infrastructure as the reasons for this.

#### ***Distribution and Sales***

Since the four main stages of production in the textiles and clothing sector include distribution and sales, the fact that domestic firms have successfully penetrated the domestic market provides evidence of functional upgrading. There is evidence of a

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<sup>234</sup> Motteleb and Sonobe (2011) also note that generally there is very little information available on the role local traders play in industrial development in developing countries, and moreover that the economic literature is silent on this.

<sup>235</sup> Which is derived from case-study analysis of the automotive or electronics industry.

large number of domestic branded retailers on the domestic market. This strategy of shifting towards the domestic market after supplying the export market is referred to as a process of “strategic recoupling” (Butollo, 2015).

It results from domestic firms building on benefits related to their local embeddedness (supplier networks, institutional support and relationships) in order to gain new market opportunities as brand name companies in the domestic market. This option may be more amenable in the domestic market given ties to local wholesale traders, as expected by Navas-Alemán (2011). It seems this route towards upgrading has been pursued by domestic firms within Bangladesh, which constitutes a form of functional upgrading.<sup>236</sup> As described by Butollo (2015), backward integration from wholesale trading towards manufacturing should also be acknowledged as a specific form of upgrading for economies with large domestic markets.

#### ***Inter-Sectoral Upgrading***

As discussed by UNCTAD (2013c) there are a number of large conglomerates with international corporate practices and diversified investments across sectors; this presence of strong domestic corporate groups is unusual in most LDCs. Information obtained from key informants whilst undertaking field work suggested that Bangladeshi entrepreneurs had begun a process of offshoring their factories to other low-cost suppliers, including Cambodia.

There is evidence of the emergence of exports of electronics manufacturing, metal products and plastics emerging from activities undertaken in EPZs, where most investment comes from Asian economies (UNCTAD 2013c). However, according to analysis of ‘high technology exports’ and data obtained from the World Development Indicators, was no major increase in these types of exports from Bangladesh: the share of exports in 2005 was 0.2 percent and this was also the case in 2011. Despite this, it is clear that inter-sectoral upgrading processes are underway, primarily being driven by domestic entrepreneurs.

#### **7.4.3 Learning by Doing Societal Level**

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<sup>236</sup> It is further noted by Butollo (2015) that backward integration from wholesale trading towards manufacturing should also be acknowledged as a specific form of upgrading for economies with large domestic markets.

Elements of a NIS were in place at the inception of the GVC entry and initial seeding process of the modern export sector. However, the available evidence suggests an inability to effectively update these in line with upgrading processes. There are political economy challenges which are impeding his process. Other coordination issues relate to the large number of ministries and agencies involved with investment and private sector development issues which complicates policy formulation and implementation (UNCTAD, 2013c). Overall, it is fair to conclude that others, such as Mottaleb and Sonobe (2011), are rather too optimistic regarding the virtuous growth circle created by the integration process with continuous learning from abroad and with investment. This is because Bangladesh struggles with addressing capital flight and facilitating public investments.

#### ***Elements of National Innovation Strategy***

The level of interaction between firms and their business representative associations in Bangladesh is high. The representative business associations in the sector themselves have helped to incubate and diffuse knowledge gained from experience within the sector. They were instrumental in terms of effective rent management and enabling the transition towards more relational types of governance for some tiers of firms within the sector, cutting out foreign intermediaries. Hence, the role of intermediate institutions in obtaining tacit information has been high. More recent challenges arise from institutionalising and translating this knowledge into more explicit forms and therefore, the interface with formal institutions. There are major concerns, regarding incentivising and financing the necessary skills upgrading process.

The ability to utilise tools such as trade preferences in order to finance future learning processes, as was the effectively the case under the MFA regime for Bangladesh, remain limited. Reasons for this include preference erosion through the proliferation of free trade arrangements seen since the 1990s, in addition to the fact that a tariff margin (price measure) is easier to overcome for established producers compared to a quantitative restriction. It is challenging to clearly identify who benefits from tariff preference rents since it is distributed amongst value chain actors with less scope for effective rent management. This change in external governance, operating outside of the borders of Bangladesh, in turn may be related to an inability to incentivise and

finance broader societal learning by doing processes, with shortcomings in sustaining these processes becoming increasingly clear.

## 7.5 Conclusion

Bangladesh has been used as a comparator case-study to demonstrate how external governance structures have influenced internal relations between firms and subsequently learning by doing and upgrading processes. Whilst others have drawn attention to a hierarchical governance structure being prevalent for Bangladeshi garment suppliers to global lead firms it seems more relational types are in operation for some tiers of firms, and quasi-hierarchical for others. Different structures are likely to exist for different tiers of firms in operation within the sector and in view of their market orientation.<sup>237</sup> Given the ability of Bangladesh to exert some control over its backward linkages, there are aspects of a more producer rather than buyer-driven value chain in operation.<sup>238</sup>

Based on the available evidence, it seems unit values overall have increased, rather than decreased, which suggests product upgrading has occurred. The available evidence also suggests that process upgrading has been achieved, though without a commensurate increase in the skills base, as proxied by workers skills endowments. Functional upgrading from an FOB1 to FOB2 supplier has been achieved; domestic sales also provide evidence of functional upgrading in relation to sales and marketing.

Generally, the role of intermediate institutions in obtaining tacit information is high. However, societal learning by doing processes although initially induced during the entry process of GVC integration, given the presence of elements of an NIS, have seemingly become more challenging to sustain.

## 7.6 Comparison of Learning by Doing in Cambodia and Bangladesh

Whilst Bangladesh adopted a more directive approach which influenced internal value chain governance, including through the effective management of learning rents, a more passive and facilitative approach was adopted by Cambodia. The end result is

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237 This information was also corroborated through firm-level interviews.

238 As discussed by Keane (2012).

more constrained meso-level learning by doing processes as reflected in limited upgrading beyond some process upgrading.

Despite this sanguine assessment, the available evidence suggests more recent challenges in terms of sustaining societal learning by doing processes induced by GVC participation in Bangladesh and maintaining an effective NIS; in comparison, these processes just seem to be getting underway in Cambodia, with previous shortcomings in the GVC integration process being redressed.

The major differences between the two case-studies therefore include meso-level processes such as functional and inter-sectoral upgrading, in addition to product upgrading. However, similar process upgrading processes have been described, with wage increases driven more by political economy considerations as opposed to responding to increasing demand for higher skills within the sector. Results are summarised in Table 33.

**Table 33: Summary of Main Findings – Cambodia and Bangladesh**

	Indicators	Cambodia	Bangladesh
External Governance	Past and present trade and investment policies, aspects of industrial policy and elements of national innovation systems	Facilitative	Directive
Internal Governance	Firm-level organisation, ownership structures and descriptive analysis of relations with buyers in end markets	Hierarchical; quasi-hierarchical	Relational; Quasi-hierarchical
<b>Firm-level:</b> Accumulated knowledge and experience; assimilation of technologies	Domestic firm age	No significant influence on LBD variables	N/A
	Firm productivity, output/capital and output/labour ratios	Increase in value added, number of workers and labour productivity	N/A
	Product upgrading: increase in unit values and market share	Decline in UVs apparent	Overall increase (woven products)
	Process upgrading:	Increased employment;	Increased

<b>Sectoral:</b> Movement towards higher value (and skilled) activities	improving the efficiency of production and unit costs	Increase in TFP	employment
	Employees skill level, years of education, vocational training	Weak evidence of skill premium; limited vocational trading	Limited; skills shortages
	Employees years of experience, movement of labourers towards higher skilled positions; remuneration	Limited Increased wages driven by political motivations	Limited Increased wages driven by political motivations
	Functional upgrading: Movement into a higher value-added activity, including sales on the domestic market	Not apparent	Movement towards 2 <sup>nd</sup> tier FOB supplier Sales on domestic market
	Inter-sectoral upgrading	Limited	Large domestic conglomerates
<b>Societal:</b> Tacit knowledge made explicit	Degree of social embeddedness of firms and interface with national innovation systems	Weak	Strong
	Role of intermediate institutions in obtaining and tacit information regarding production and marketing	No link to learning rents	Crucial role with regards to managing learning rents
	Process of institutionalising tacit knowledge obtained	Beginning	Requires public investments

Our sub-research questions are answered in sequence below.

How do learning by doing processes differ between countries?

- Firm level: it has not been possible to compare in a systematic way.
- Sectoral level: major differences with regards to product, functional and inter-sectoral upgrading.
- Societal: learning by doing processes initially induced in Bangladesh are becoming challenging to sustain; these processes have been limited in the case of Cambodia, though efforts are underway as signalled by major policy shifts.

How are these differences related to the internal governance between firms and nature of contractual relations?

- Bangladesh has moved towards a more relational type of governance with other quasi-hierarchical structures apparent.
- Cambodia predominantly trades in a more hierarchical way, though elements of quasi-hierarchical governance are also apparent.

How are these differences related to external governance structures?

- A more directive approach was adopted by Bangladesh.
- A more facilitative approach adopted by Cambodia.

## **8. Evolution of the Cut Flower Global Value Chain**

The changed nature of global trade has major implications for late industrialisers including in SSA. The role of global trade policy in terms of facilitating entry into the modern export sector is often underplayed. However, it is recognised that as patterns of global trade have changed so too has the nature of value chain governance. In view of these developments, this Chapter provides an overview as to how the cut-flower GVC has evolved to date. The structure of the cut-flower GVC is outlined and the respective position of Kenyan and Ethiopian producers in terms of country capabilities, identified. Finally, the comparative aspects to be explored in the empirical chapters, which follow, are summarised.

## **8.1 Trade Policy Developments<sup>239</sup>**

There are different types of trade preferences, with a varied history. They include the evolution of trade preferences for former colonies and remnants of empire including the imperial preference. As the international system has developed these schemes have been incorporated and either provided with legitimacy, or ruled illegitimate. The 1970s marked a major turning point in international trade policy, as some of the old special access arrangements for the emerging independent ex-colonies were reduced or eliminated, and industrial economies were persuaded to enter into the GSP.<sup>240</sup> This period essentially marked the beginning of trade preferences for development.

The GSP explicitly recognizes that developing countries have specific trade needs. Part IV of the GATT subsequently reflected this through recognition that the policies best suited for developed country members are not necessarily the same as those for the developing; that is, trade preferences are required as a form of infant industry protection.<sup>241</sup>

The adoption of the ‘Enabling Clause’ by GATT members established the legal framework for the GSP, originally launched in 1968, at the UN Conference on Trade and Development (UNCTAD) where it was agreed that industrial countries would grant non-reciprocal trade preferences not just to their former colonies (where applicable) but to all developing countries. As sub-groups of developing countries such as the LDCs, were identified in the process of converting preferences for friends into those for development, and principles of SDT were adopted by the multilateral system, so too were limits placed on the extent of the market for the newly emerging economies in East Asia on specific product lines.

### **8.1.1 Evolution of the Cut Flower Industry and Trade Policy Developments<sup>242</sup>**

Stevens (2001) describes how EU trade policy effectively excluded many of the most important global agricultural suppliers from the UK market. However, this advantage

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239 This sub-section draws on Keane (2013a).

240 See Page (1994).

241 See Kleen and Page (2005) who also note that if increasing returns to scale are important to these infant industries, then this would support intervention and quote the former EU Trade Commissioner Peter Mandelson on this: “the needs of poorest are different from the more advanced developing countries and Europe must be fully committed to the principle of ‘special and differential treatment for developing countries. The idea that developing countries need to intervene more actively in directing their economies than do developed countries still commands considerable support, and is the basic argument behind SDT intended to allow developing countries to follow different policies” (Mandelson 2004).

242 This sub-section draws on Keane (2014c).

has been eroded over time as the Cotonou Partnership Agreement (CPA) has expired and as a result of the proliferation of FTAs more broadly. Because of a failure to negotiate the successor to the trade related protocol of the CPA, which expired in 2007, a revised date was set for the removal of autonomous preferences (October 2014). By that time African, Caribbean and Pacific (ACP) countries which had not agreed and taken necessary steps towards ratification of an EPA with the EU would be downgraded to the GSP. This would result in an increase in tariffs for those ACP countries not designated as LDCs as they would begin to export under the Standard GSP scheme if they are non-LDCs (compared to the EBA regime for LDCs).

The level of preferential market access available to Kenya (a low income country), relative to Ethiopia (a LDC) has been maintained as a result of the initialling in 2007 of an EPA and subsequent ratification. However, the perceived “security” of Ethiopia’s status as a LDC relative to Kenya has been cited as a factor underpinning recent investment in the sector.<sup>243</sup> Because of uncertainties between 2007 and 2014, there were major concerns regarding the ability of producers in Kenya to absorb the increase in tariffs that could result from being downgraded to the EU’s GSP; trade shifts would arise if buyers chose to import from other lower cost producers without duties such as LDCs.

The increase in tariffs targeted the following products which would have experienced an increase in tariffs of between 5 and 6.5 percent (ad valorem) under the EU’s standard GSP: (i) HS 06031100 fresh cut roses and buds, (ii) HS 06031990 fresh cut flowers and buds, and (iii) HS 06039000 dried, dyed, bleached, impregnated or otherwise prepared cut flowers and buds. These products accounted for almost 70 per cent of the total value of cut flowers (HS0603) from Kenya in 2012. Tariffs were applied temporarily as Kenya missed the October 2014 deadline, though were subsequently removed as the EU deemed necessary steps towards ratification of the EPA had been taken.

Although the effect of an increase in tariffs may not be such a challenge for large vertically integrated firms that deal directly with retailers, it was likely to affect smaller and more medium sized firms, which are also the same type of firms likely to

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<sup>243</sup> This is widely referred in the literature and was also confirmed by key informants.

be domestic owned. This is not only because of scale effects but also because the tariff margin increase could potentially be borne by buyers rather than producers. Aggressive lobbying meant agreement on the EPA was reached which eventually secured market access (an FTA is more secure than the EU's GSP, which can change).

### **8.1.2 Organisation of the Cut Flower Value Chain**

There are two main marketing channels into the European market for cut-flowers: through auction houses, which act as intermediaries; or direct to retailers. The number of cut-flower auction houses has been on the decline in the EU, with around ten in existence in 2011; the two most important of which merged in 2007, creating one major auction house. As discussed in Hortiwise (2012: 15) the merger of the two largest Dutch cooperative flower auctions resulted in the world's largest flower marketplace – FloraHolland – which had total flower sales of €2.35 billion in 2011.<sup>244</sup>

This auction house is essentially a members club run by the major suppliers, some of whom own production facilities in Ethiopia and a lesser extent, Kenya. However, FloraHolland has also recently established its own direct sales route as its members have begun to establish operations overseas, including in Ethiopia. This auction house was originally a cooperative among Dutch growers, before they began to expand their operations overseas, driven by efficiency as well as resource seeking motivations. It remains a cooperative, though the geographical reach has expanded; members pay fees to sell their produce within the auction.

Unlike the direct sales route, where prices and quantities are agreed in advance, in comparison the auction house operates an ‘auction clock’, where the price starts high and is lowered until a buyer is willing to accept the figure; if the minimum price is not achieved, the grower has to take the loss and also pay €25 to dispose of the flowers (Wishaw et al., 2013). This marketing channel provides for rapid payment, in addition to the ability to sidestep some of the certification processes typically demanded by large retailers.<sup>245</sup>

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<sup>244</sup> As discussed by Taylor (2010), this leaves only two auction companies of international significance: the FloraHolland Group in the Netherlands and Landgard in Germany.

<sup>245</sup> Their provenance is unknown and their production standards, including certification mechanisms around social and environmental sustainability, cannot be guaranteed (Wishaw et al., 2013).

Tesco (31 percent), ASDA (18 percent, Sainsbury's (17 percent), and Morrisons (12 percent) ('the big four supermarkets') together account for more than 75 percent of the UK's grocery spend and therefore exhibit considerable market power.<sup>246</sup> There are considerable differences however, amongst retailers in terms of their sourcing strategies, reliance on intermediaries and direct purchasing.<sup>247</sup> Whilst some backward vertical integration has taken place by retailers in terms of dealing directly with producers; some Kenyan lead firms have also vertically integrated so as to control logistics and become preferred suppliers for retailers. Gaining control of particular stages of production, particularly transportation and logistics means capturing greater value.

Some UK retailers have begun to establish direct sales arms in suppliers such as Kenya. This includes IPL a subsidiary of Asda - the UK's 2<sup>nd</sup> largest retailer - of which the parent company is Walmart. IPL was created as a direct sales arm to Asda in 2004 and in 2009 it subsequently became a wholly owned subsidiary. Its business model has been described as follows:

"IPL manages the whole process, from consumer-facing decisions (such as which products to sell in how much shelf space) to buying from exporters/growers directly and arranging freight. With a few emerging exceptions, almost all other supermarkets buy from importers who source the produce and organise logistics.... Its [IPL's] business model is to remove unnecessary margin-takers and control the supply chain from merchandising to consumers by buying directly from exporters and, where possible, the packhouse and growers, while removing the role of importers" (Wishaw et al., 2013: 26).

## 8.2 Stages of Production

The main stages of production include propagation, production, post-harvesting, packaging and sale. The latter stages of production are most lucrative. For producers, differentiation in the flower industry is mainly achieved through increasing or changing the flower varieties; the production of new varieties is highly knowledge

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246 See Wishaw et al., (2013) for further discussion.

247 Because ASDA has a commitment to be 10 per cent cheaper than its supermarket rivals, it is reputedly an aggressive price negotiator (*Ibid*).

intensive and therefore monopolized by a few breeders in the developed world, mainly in the Netherlands (Greybreeyesus and Iizuka, 2010). In order access to access new varieties, Membership in the Union for the Protection of new Varieties of Plants (UPOV) is important and growers also have to respect property rights and pay royalties or license fees to international breeders (Wijnands, 2005).<sup>248</sup>

According to a survey undertaken in Ethiopia by Greybreeyesus and Iizuka (2010) a typical flower farm pays royalty to three companies for using their property rights. Since 2005, international breeding companies started to establish production sites in Ethiopia. They are also present in Kenya. Farms in both cases therefore have begun to propagate for their own use and for sale to other farms. It has not been possible estimate the share of value which accrues to outgrowers or breeders. This information was not provided by key informants during fieldwork due to industry sensitivities.

However, it is possible to make use of other recent industry estimates. These estimates show how a large amount of the total value of a stem sold in the UK accrues to the airfreight and transportation node (Table 34). A major difference between Kenya and Ethiopia is that air freight for Ethiopian suppliers is undertaken by the National carrier (Air Ethiopia). This means more value accrues in Ethiopia as a result. Out of total exporter/producers costs, wages and the share of labour are estimate to account for 16 percent (Wilshaw et al., 2013).

**Table 34: Value Accrual, Price per Stem**

	£	%
Retailer	0.4	17.5
Importer	0.3	13.3
Air Freight	0.6	27.2
Exporter	0.9	41.9
Packaging	0.0	0.2
Outgrower		
Total	2.1	100

Source: Wilshaw et al. (2013)

### 8.2.1 Upgrading opportunities

The range of upgrading opportunities for producers in the modern agricultural sector are similar to those available to new entrants into the textiles and clothing GVC. A form of functional upgrading could entail sales on the domestic market. Gaining

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248 Discussed in detail by Greybreeyesus and Sonobe (2011).

control of logistics and supplying retailers with a flower product may be considered broadly comparable to movement from FOB-1 to FOB-2 suppliers in the textiles and clothing GVC. A form of upgrading entails moving from supplying fresh cut flowers, towards the supply of complete bouquets and flower “product”.

There is evidence of Kenyan cut flower firms moving towards a position of a full package supplier, with responsibility for sourcing all inputs, as in the case of a more relational type of GVC governance (Keane, 2013b). In this respect, it is fairly safe to say that Kenya is an FOB-2 type supplier. In comparison, Ethiopia remains at the FOB stage of production. It mainly supplies fresh cut flowers [roses] mainly to the Dutch auction houses; some supply is destined to UK retailers.

#### ***Respective Country Capabilities***

The results of key informant perspectives on respective country capabilities are summarised in Table 35. The result suggest that Kenya is favoured mainly in view of its compliance infrastructure, whilst Ethiopia is viewed favourably in terms of cost. There are differences in the range of products currently supplied to buyers.

**Table 35: Country Capabilities**

	<b>Kenya</b>	<b>Ethiopia</b>
<b>Hectares</b>	<b>3,400 (in 2010)</b>	<b>1,600 (in 2010)</b>
Main Products	Range of products available : Roses; other decorative flowers  High value rose products (geographical factor)	Roses ~ limited flower product
Main destinations	66% UK; 17% Netherlands; 5% Germany; 12% other	84% Netherlands; 8% Germany; 8% other
Strengths	Trust in compliance infrastructure: business to business and retailer specific  Pool of skilled labour force  10 year corporate income tax holiday  Exemption from VAT and customs import duty on inputs  Business support services, inc. KFC	Cost competitive; incentives provided to investors  Cheap labour force  Ease of doing business  Tax holiday for five years; duty free import of input materials  Credit and finance available
Weaknesses	Some pesticide residue issues (e.g. MRL).  Labour standard and rights issues, e.g. minimum wage legislation.	Weak compliance infrastructure; delisted from some standards compliance (e.g. Sedex).  Weak post-harvest technologies.

	<p>Difficult to start a business and register property; complex land management and administration</p> <p>Taxes are problematic with poor coordination amongst government agencies</p> <p>Labour is no longer low cost</p>	<p>Labour standard and rights issues, e.g. minimum wage legislation.</p> <p>Airfreight dictated by government</p> <p>Lack of trade promotion support</p>
Trade Policy	<p>Uncertainty regarding the EU-EPA negotiations was problematic and costs were borne due to a failure to conclude negotiations in advance of the deadline set by the EC.</p> <p>Market access has been secured</p>	<p>LDC status and security of tariff rent available in EU market.</p> <p>Willingness to work with buyers and industry representatives, e.g. CBI Netherlands.</p>

Source: Key informant interviews; see Appendix 4; Rikken (2012); Rikken (2011).

### ***Main Buyers Kenya and Ethiopia***

Around six UK retailers account for the direct sales route in the case of Kenya and around half of these are supplied directly by the Kenyan lead firm, Findlays.<sup>249</sup> This firm<sup>250</sup> is a subsidiary of a John Swire and Sons – a major TNC (founded in 1750, originally as a trader and manufacturer of cotton based in Glasgow).<sup>251</sup>

Flamingo Holdings was purchased by Findlays in 2007. This company was initially created in 2002 as “Homegrown” which opened its own UK arm after taking over two British suppliers to form Flamingo Holdings (Gibbon and Ponte, 2005). As a result of the purchase of Flamingo Holdings, Findlays is now a major player in Kenya as well as the UK (through its import arm); its Chief Executive also serves on the main industry representative body – the Kenya Flower Council (KFC).

Because of continued growth in the sector, other Kenyan lead firms emerged, such as VegPro Ltd. This company is now one of the largest producers and exporters of fresh produce from Kenya, with six farms owned. It also now ranks among Kenya’s top five flower exporters. Subsequently, the company has become part of a group known as VP Floriculture, which has expanded production into Ghana as well as Ethiopia.<sup>252</sup> These efforts have been prompted by cost pressures due to rising costs in Kenya and

249 As described by key informants.

250 Group companies include: Tea Estates - James Finlay Kenya, Hapugastenne Plantations, Udapussellawa Plantations, Leaf Tea Trading - Finlay Tea Solutions UK, Finlay Hull, Finlay Vietnam, James Finlay Blantyre, James Finlay Mombasa, Xiamen James Finlay; Tea Extraction - Finlay Extracts, Finlay Tea Solutions; Beverage Packing - Finlay Beverages; Horticulture - Finlays Horticulture Holdings, Finlays Horticulture South Africa, Finlays Horticulture Kenya, Finlays Horticulture Tanzania, Skytrain, Finlays Fresh Produce, Finlay Flowers BV, Finlay Flowers UK, Omnipflora; Logistics and Services - Finlays Colombo, Finlays Properties, Finlays Cold Storage, Finlays Renotkil, Finlays Airline Agencies, Finlays Insurance Brokers, Finlays Maldives.

251 A conglomerate is a combination of two or more corporations engaged in entirely different businesses that fall under one corporate group, usually involving a parent company and many subsidiaries. Often, a conglomerate is a multi-industry company. The Swire Group of Companies include investments in shipping, aviation, agriculture, industry, property development, and trading.

252 See: <http://www.vegpro-group.com/home.html> [access 29 September 2015].

flat prices in U.K. supermarkets, its main buyers. Because of these efforts, Vegpro ltd. was divested and rebranded as the VP group and vertically integrated so as to become a long-term partner to U.K. supermarkets.<sup>253</sup>

As discussed by Wilshaw et al. (2013) cross-border organisations bring economies of scale and help secure a year-round supply of key product categories: ASDA's acquisition of IPL, which deals directly with exporters, is a clear example of this trend; Tesco now uses a similar model to procure some of its food produce; Morrisons has recently acquired a flower importer; Kenyan lead firms such as Finlays, VP Group (previously VegPro), and East African Growers have operations in both the EU (importers) and Kenya (exporters).

There is evidence which suggests VegPro has moved from not only production but also into packaging and exporting, not only in Kenya, but also in Ethiopia. As of 2003, the company was in the process of establishing packing houses in Ethiopia; offering its packaging and exporting services to farmers.<sup>254</sup> The most recent available evidence suggests the company has expanded dramatically, including into food, logistics, energy, trading, leisure and marketing. These operations now span multiple countries in Africa.<sup>255</sup> This process has been replicated by other lead firms in the sector. For example, Sher Ethiopia is now the largest exporter by volume of roses from Ethiopia and is a subsidiary of Sher B.V., the world's largest exporter of roses, which maintains operations in Kenya in addition to India.

Difficulties in dealing with some retailers were described by some key informants given the lack of formal contracts between some actors and risks borne by producers. The auction house route was described as less risky for producers in that their produce, as long as it met some basic quality parameters, would be sold and producers paid quickly. However, in order to develop a reputation amongst buyers within the auction system, a constant minimum level of quality had to be maintained. This could be challenging to achieve, but an imperative in order to secure presence within the

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253 See Alvarez et al. (2013).

254 Hortidaily (2013).

255 See: <http://www.vegpro-group.com/home.html> [accessed 29 September 2015].

market and develop reputation effects. The importance of which increases with virtual transactions where buyers and sellers never physically meet.

Although lead firms can typically pick and choose from many different suppliers as well as dictate prices, some firms located in some countries will ultimately always be preferred suppliers because they are subsidiaries of lead firms. Other firms, including those that trade within non-equity modes of international production, may instead become preferred suppliers over time because they are able to fulfil buyers' requirements, or because they have been integrated within supply chains via intermediaries.

### **8.3 Comparative Aspects for Analysis**

In view of the starting point of this thesis being the rivalrous nature of knowledge spillovers, the relative position of firms within the overall production network is expected to exert a major influence on potential upgrading opportunities, in line with GVC theory. Because the starting point of this thesis relates to the non-automaticity of knowledge spillovers, it leads us to focus on the specific efforts undertaken by domestic entrepreneurs and the state in order to overcome capability gaps, therefore inducing and sustaining learning by doing processes.

Because the approach adopted by Kenya towards GVC integration was facilitative, it followed some of the policy measures typically associated with an assumption of automatic knowledge spillovers. The comparator case-study of Ethiopia, adopted a more directive approach towards GVC integration; implicit in this approach is the rivalrous nature of knowledge spillovers. Hence, it is used as a comparator case-study to Kenya in order to trace the causal mechanisms from external governance, influence on internal governance structures and subsequent learning by doing and upgrading processes.

## **9. Learning by Doing in the Cut-Flower GVC: Kenya**

### **9.1 Introduction**

This chapter begins by providing an overview regarding the process of integration with the cut-flower GVC in Kenya. The role of the state is classified as more facilitative than directive. Previous characterisations of internal value chain governance between firms are described before new insights are introduced. This includes the identification of tiers of firms, differentiated by the functions they undertake.

These results are triangulated and validated with secondary firm-level data obtained by Ksoll et al. (2009; 2013). A comparative analysis of firms differentiated by marketing channels is then undertaken. The available evidence suggests a change in

internal value chain governance, which has been influenced less by aspects relating to external governance but instead driven by firms consolidation processes. Although there is evidence of functional upgrading, outcomes in terms of an improvement in producers' capabilities are less obvious. These results are suggestive of an inability to align internal and external value chain governance, and translate the tacit information obtained in the sector into knowledge stock, over time.

Overall, the evidence presented in this chapter shows how the facilitative rather than directive approach to GVC integration has resulted in a limited ability to influence internal GVC governance structures and hence generate and sustain learning by doing processes in line with the trajectory envisaged by Nelson and Pack (1999). Section 9.2 which follows provides an overview of external governance structures and the process of GVC integration. Section 9.3 describes internal value chain governance. Learning by doing processes are analysed in Section 9.4. Finally, conclusions are drawn and avenues for further research discussed, including reference to the comparator case study – Ethiopia – which follows in Chapter 10.

## **9.2 External GVC governance**

Only recently has a coordinated policy on the cut-flower sector been adopted and there are political economy reasons for this. In the absence of an explicit policy for the sector, private producer organisations arose to resolve coordination failures. Overall, the approach of the Kenyan state towards fostering the development of the sector is classified as facilitative.

### **9.2.1 Management of Trade and Macroeconomic Context**

As discussed by Jenkins (2005) despite having pursued import-substituting industrialisation during the first two decades after independence in 1963, by the mid-1990s all administrative controls hampering international trade had been abolished, tariffs significantly reduced, export incentives put in place, exchange rate controls removed and the current account liberalised. However despite this, the share of exports and imports in GDP in Kenya was virtually the same in 2002 as in 1990. It is the poor performance of Kenyan exports that accounts for the apparent failure of the Kenyan economy to 'globalise' during this period. Figure 10 does suggest, however, some improvement particularly since 2008, of exports of both goods and services.

**Figure 10: Gross Domestic Product (LCU 000's) and Exports (US\$'000)**



Source: World Development Indicators, accessed 27 June 2015; GDP expressed in local currency units (LCU), 000's

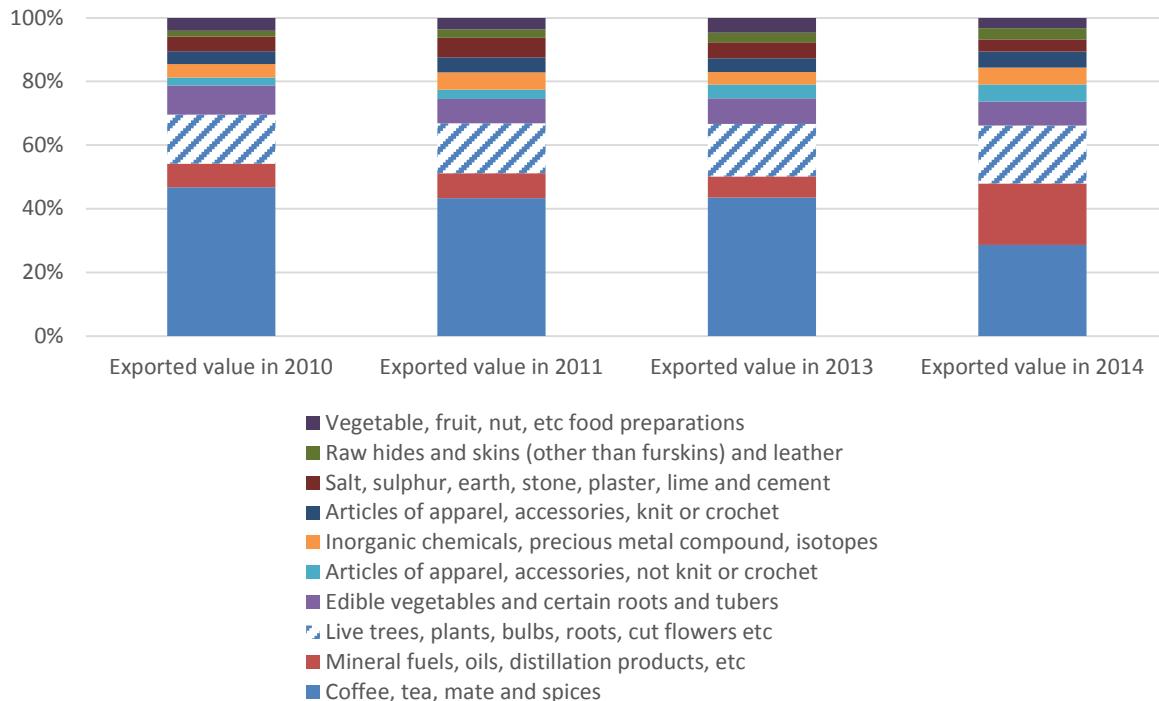
In view of the lacklustre picture painted by Jenkins (2005) it is perhaps surprising that over the period 1990 to 2002 Kenya managed to establish itself as a major supplier of horticultural products to the European market; by 2000 this sector was the country's third-largest source of foreign exchange (*Ibid*). Growth in cut flowers has continued in recent years which accounted for 12 percent of exports in 2014, up from 8 percent in 2010 (Figure 11).

Because of continued uncertainties during negotiations on the EPA with the EU during field work, many interviewees suggested trade policy uncertainty had motivated the relocation by some cut-flower growers to competitors such as Ethiopia.<sup>256</sup> The strategy adopted by some Dutch growers to begin production in Ethiopia was discussed by industry representatives interviewed during fieldwork as forming part of a diversification strategy: intended to increase the number of suppliers and to reduce risks (and the market power of producers in Kenya). However, this strategy may also have been driven by the need for cost competitiveness as well as adverse movements in exchange rates in relative terms.

**Figure 11: Top Ten Major Exports (US\$'000)**

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256 Which will continue to receive a trade preference in the EU market even if it does not sign and ratify an EPA because it is classified as a LDC.



Source: ITC TradeMap, accessed 25 June 2015; units in US\$ thousand; data not available for 2012

Since the GFC of 2008, with limited room for manoeuvre on the fiscal side, monetary policy became the central policy tool to mitigate the adverse impact of external market conditions. Concerns over dramatic exchange rate developments meant that a parliamentary select committee was established in November 2011 to conduct a comprehensive investigation and enquire into the causes of the drastic and steady decline of the Kenyan Shilling against foreign currencies that occurred in the final quarter of 2011. Despite these developments, the exchange rate continues to remain flexible, although interventions are made to dampen speculative activity. These interventions do not, however, equate to the use of capital controls. Instead they are limited to managing short-term capital inflows through, for example, increasing regulation of the market for foreign currency swaps.<sup>257</sup> The World Bank (2012a) suggests that going forward any reduction in interest rates needs to be gradual, so as to maintain macroeconomic stability and not endanger external financial inflows, which help to stabilise the exchange rate.

### 9.2.2 Investment Policy

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<sup>257</sup> Discussion within policy circles includes the potential use of an early warning mechanism which would put in place thresholds or trigger values which could better guide interventions by the central bank.

As discussed in some detail by the US Bureau of Economic and Business Affairs (2012), although there is no specific legislation preventing foreigners from owning land, the ability of foreigners to own or lease land classified as agricultural is restricted by the Land Control Act.

The constitution states that non-citizens can lease land for a maximum period of 99 years. There are foreign investment protection acts in place, and the Investment Promotion Act of 2004 sets a legal framework. Recently the minimum threshold for FDI was reduced from US\$500,000 to US\$100,000. The fact that exemptions from the Land Control Act can be acquired via a presidential waiver has led to complaints about excessive bureaucracy and patronage.

### ***Facilitative Approach***

Further to the adoption of a Science, Technology and Innovation (ST&I) strategy in 2008, the government has created fiscal incentives to promote investment in SEZs.<sup>258</sup> However, these measures have been criticised internally due to not being effectively targeted, in view of the absence of a “comprehensive Kenyan national innovation system” with low levels of trust in business dealings which hinders innovation activities.<sup>259</sup> Nevertheless, tax incentives are now directed towards increasing acquisition and improvement of technologies by firms. These measures, however, apply to the light manufacturing sector; incentives applicable to the high-value agricultural sector have been rather more limited.

Within Kenya’s most recent guiding policy document, *Kenya Vision 2030*, the agricultural sector is now placed as a central pillar. Although this sector accounted for 25 percent of GDP (in 2012), productivity remains low. Some of the flagship projects identified in the *Kenya Vision 2030* include developing an agricultural land-use master plan. Despite this, in view of limited policy to guide investment in the high-value agricultural sector to date, it is fair to classify the State’s role overall as more facilitative than directive.

### ***Public Policy Considerations***

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258 Republic of Kenya (2008).

259 Lacave and Vullings (2014).

There has been limited capacity to implement trade policy in Kenya effectively in recent years.<sup>260</sup> This capacity constraint is intended to be resolved through implementation of the *Kenya Vision 2030* strategy (GRK, 2007) which is anchored on the three key pillars of economic; social; and political governance.<sup>261</sup> This document present numerous policy proposals aimed at improving the productivity and performance of industry in Kenya. Some of the policy proposals address general concerns regarding governance and infrastructure; others address problems specific to industry (Bigsten et al., 2010).

The implementation of the highly ambitious *Vision 2030* strategy document is envisaged in tandem with on-going governance reforms. The results are meant to be two-fold. First, they entail devolution of power. Second, they require constitutional reform and the creation of an independent judiciary, etc. This is expected to result in the creation of a much more formidable civil service with the governance capabilities to both design and implement an effective trade strategy.

There were anecdotal reports regarding investigations being undertaken by the Kenya Revenue Authority with the country's top three flower exporters for tax evasion. As discussed by Wilshaw et al. (2013) with a growing number of businesses in the sector becoming vertically integrated, with import operations in end markets such as the UK as well as their Kenyan operations, they invariably have to deal with international transfer pricing; this can serve as a vehicle for reducing tax liabilities depending on where company Headquarters are based and transactions and transportation routes are recorded. The share of tax revenue which accrues from customs and other duties is summarised in Table 36.

**Table 36: Tax to GDP Indicators**

	2005	2006	2007	2008	2009	2010	2011	2012
Customs and other import duties (% of tax revenue)	8.9	7.3	8.4	8.4	8.1	8.3	7.8	7.6
Other taxes (% of revenue)	0.4	0.8	1.0	1.1	1.0	1.0	0.1	3.4
Tax revenue (% of GDP)	18.7	15.1	15.2	16.0	15.5	15.7	15.9	15.9

Source: World Development Indicators, accessed 25 June 2015

260 Were et al. (2010).

261 Three development blueprints capture the main thrusts of the policy reforms in Kenya since 2000: the Poverty Reduction Strategy Paper 2001–2004 (PRSP), the Economic Recovery Strategy for Wealth Creation and Employment 2003–2007 (ERS), and *Kenya Vision 2030*.

### **9.2.3 Elements of a National Innovation Strategy**

Kenya is in the process of implementing a NIS, known as the Kenya National Innovation Systems (KNIS), through the Ministry of Higher Education, Science and Technology (MoHEST). There is recognition of the need for strengthened interactions between public innovation support systems and the institutional and organizational support available from the private sector; it is simply too early to assess its effectiveness. Nevertheless, there is a commitment to allocate 2 percent of GDP to STI activities (STI Act, 2013). In view of budget constraints some have argued that this target may be overly ambitious.

#### ***Role of Business Associations***

There has been an increase in efforts to provide agricultural extension services to different regions across Kenya and includes the provision of services offered by Kenya's Horticultural Crops Development Authority (HCDA) across all provinces. This may be reflective of fears regarding a potential loss of competitiveness should the conditions of access to the EU market change. However, it also largely reflects broader policy objectives including the implementation of Vision 2030 and the ST&I strategy.

The HCDA was established in 1967 and grants licences to buyers and sellers of horticultural products. This organisation was established by the government to support the horticultural sector overall, including the cut-flower sub-sector. Its work includes supporting growers and traders so that they do not need to resort to arbitration. It does this through, for example, witnessing contract signing. It therefore tries to foster relationships between small-scale growers and medium-sized firms in terms of adhering to best practice.

Although all buyers and sellers in Kenya must be registered with the HCDA, not all growers are registered with other private sector and producer organisations such as the KFC or the Fresh Produce and Exporters Association of Kenya (FPEAK). Both of these organisations are private sector initiatives intended to increase the lobbying power of the industry as well as to improve coordination between firms in terms of learning about and sharing best practice, including on certification issues. Both are

self-regulating bodies.<sup>262</sup> Their members pay fees for industry representation, including on market access issues.

Government intervention in the sector is likely to increase in the future because of implementation of the horticultural bill. This is considered by most industry representatives to be long overdue, given the more than 20 years of the industry's development without an explicit development policy. As part of this bill a horticultural development fund will be created; the HCDA will manage part of this fund, in addition to other public and private partners. The objective of this fund is to extend the coverage of the HDCA and to bolster its capacity, so that it has a representative body in each province of Kenya.

The lack of an explicit policy for the development of the horticultural sector, despite its relative importance in generating formal employment opportunities and foreign exchange in the past, is considered to be a result of the hypersensitivity of the industry to government intervention. The new policy embodied in the horticulture bill is viewed positively by the KFC, and they have actively participated in its formulation, as a means to force the government to better support the sector. In the absence of an explicit government policy specifically designed for the cut-flower sector, the KFC has developed its own regulations and guidelines for the sector.<sup>263</sup> The KFC is also an accredited certifier of a number of private voluntary standards, which are demanded by retailers as well as auction houses.

### ***Political Economy Considerations***

Historically, the horticulture sector has always resided within a relatively tight-knit community of a select number of large-scale growers. In terms of the evolution of the industry, a number of the largest farms around Lake Naivasha were previously owned by the families of former Presidents of Kenya (Kenyatta and Moi), who took over the most productive land left by colonists. More recently, where large firms have left, other large firms in Kenya have typically taken over.

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262 The Chief Executive of the KFC is also the managing director of one of the largest cut flower firms in Kenya (Findlays).

263 The KFC was created in 1996.

According to Kinuthia (2012) close to 90 percent of flowers are controlled by foreign affiliates. However, based on analysis of the firm-level data obtained by Ksoll et al. (2009) of 104 firms accounting for 90 percent of total cut-flower exports, it is clear that ownership structures are mixed, comprising: foreign, Kenyan/African, Kenyan/Indian, Kenyan Indian and mixed foreign. The findings of Ksoll et al. (2009) also substantiate the different types of firm identified during fieldwork. The data obtained by Ksoll et al. (2009) are based on the names of the directors of the firms obtained from the Registrar of Companies at the Attorney General's Office. They then use this information to classify the owner's nationality (Kenyan indigenous person, Kenyan Indian or foreign).<sup>264</sup>

Given the importance of the sector in terms of the generation of foreign exchange, coupled with its control by those with established political connections, it is fair to say the sector has performed an integral role in terms of domestic accumulation processes. Its role, however, in relation to assimilation processes seems to have been rather more limited. This conclusion is drawn in view of the absence of an explicit policy to manage learning rents available under the CPA regime, which has now ended.

#### ***Sales on the Domestic Market***

The evidence obtained from the firm-level surveys undertaken by Ksoll et al., (2009) shows how some firms sell on the domestic market. The KFC has a strategy to target the domestic market and provides support to its growers (particularly smaller farms) to do so. However, the data are too limited and the available evidence available from secondary data sources too limited to analyse these processes in detail at the current time.

#### **9.2.3 Human Resources and Labour Market Policy**

Projections estimate Kenya's population will be about 66 million by the end of the horizon envisaged by *Kenya Vision 2030*. This policy document therefore advocates economic growth as the panacea to the problem of employment creation (Omolo, 2012). According to Escudero and Mourelo (2013) between 2011 and 2050, Kenya's

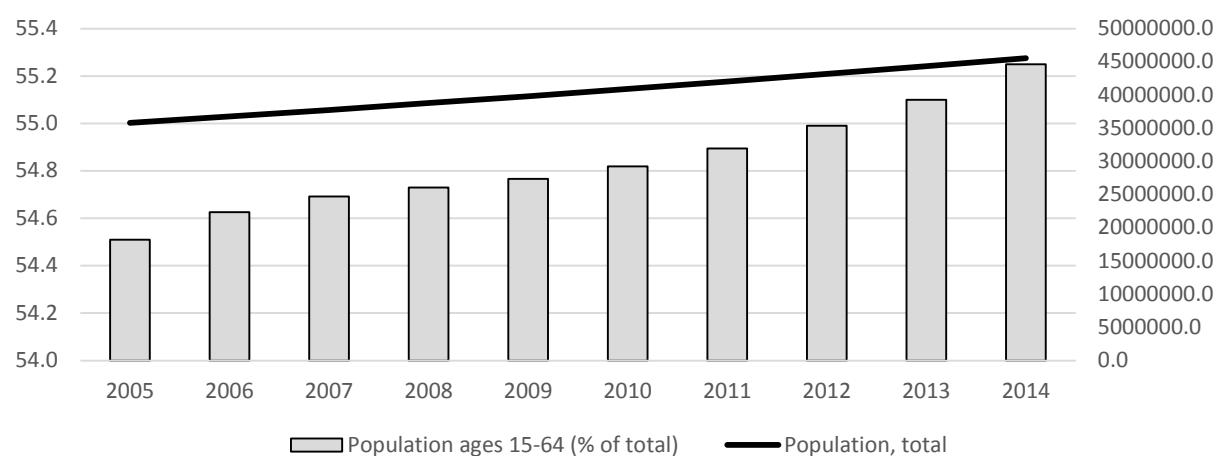
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<sup>264</sup> For the firms under the ownership of Kenyan indigenous persons and Kenyan Indians, they map out whether the owners are politically connected or not.

working-age population will increase, on average, by more than 950,000 per year. Figure 12 presents recent trends in population growth.

As discussed by Omolo (2012), the Kenyan government has over time identified and/or implemented numerous interventions to address the country's employment challenge. These measures have been implemented over three main periods, classified by Omolo (2012) as follows: Kenyanisation (1963–79), active labour market policies (1980–89) and macroeconomic management (1990–2011).

**Figure 12: Total Population and Working Age Population**



Source: World Bank, World Development Indicators, accessed 25 June 2015

Although Kenya's primary and secondary school enrolment rates have been increasing, tertiary school enrolment rate (which is the most direct substitute for youth employment) remained as low as 4 percent in 2009 (Table 37). This is 3 percentage points below the average observed for SSA as a whole (Escudero and Mourelo, 2013). It is further noted that although the employment elasticity of economic growth during the past 20 years has been around 0.9 in Kenya, the youth employment elasticity is only around 0.4.

**Table 37: Education Expenditure and Enrolment Indicators**

	2001	2003	2004	2006	2007	2008	2009	2012
School enrollment, primary (% gross)	97.2	106.9	106.9	104.7	111.6	111.1	111.9	114.4
School enrollment, primary (% net)	66.8	74.2	73.4	74.7	85.6	81.2	81.8	83.6

School enrollment, secondary (% gross)	40.4	43.1	47.2	50.0	52.5	59.2	60.1	67.0
School enrollment, secondary (% net)	34.2	36.3	39.2	42.2	44.3	49.5	50.0	56.0
School enrollment, tertiary (% gross)	2.8	..	2.9	..	..	..	4.0	..
Secondary education, vocational pupils	12754.0	14106.0	17160.0	22952.0	25017.0	29697.0	15672.0	..

Source: World Bank, World Development Indicators, accessed 25 June 2015

The effects of these policies, as discussed by Omolo (2012), are rather varied: the period 1990–2010 saw rapid growth in informal sector employment of 17.4 percent per annum, as compared to the formal sector's 1.97 percent. However, the growth/employment elasticity declined from 1.28 in 1992–96 to 0.5 in 2004–08. This creates a formidable employment challenge, given that Kenya's population is poised to reach 45 million by 2015 (Omolo, 2012).

### ***Vocational Skills and Training***

The horticulture bill will include a minimum level for wages in the sector. It will also create a wages council to review levels in the sector. This is expected to mitigate claims made in relation to unfair wages, particularly for entry-level workers, which are considered by some to be inadequate, relative to the cost of living. However, there is a need for a more explicit link to be made to vocational skills and training. Only recently has a Vocational Training Act been implemented (Government of Republic of Kenya, 2013). Although around 30 vocational training institutes are operational, linkages with the private sector have been criticised for being weak and currently rather more supply than demand driven.<sup>265</sup>

#### **9.2.4 Summary of External Governance**

Although prompted by structural changes within the sector, the introduction of new policy measures specifically directed at the high-value agricultural sector are also being spurred by changes in governance structures more generally within the current administration. Overall, the general approach towards integration with the cut flower GVC in Kenya has been more facilitative than directive. There have been important policy developments, including the creation of a NIS which seeks to create more of an

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265 Lacave and Vullings (2014).

explicit interface between business associations and the public sector. However, it is far too early to assess effects and subsequent influence on internal value chain governance structures.

### **9.3 Internal GVC governance**

Although two different major marketing strands exist – to Dutch auction houses or European retailers – the evidence obtained during fieldwork suggests tiers of suppliers in operation. According to their respective tier, firms have different relationships to buyers and to end markets. Hence, they face different upgrading challenges and trajectories. These are elaborated upon in the following sub-section section, after barriers to entry in the sector are described.

#### **9.3.1 Barriers to entry**

During the 1990's the GVC literature was primarily concerned about the potential exclusion of smaller producers from the horticulture GVC as a result of structural changes in its operation and relationships between firms. As a result of closer supply-chain relations being developed amongst and between European retailers, privately designed and enforced standards were harmonised across retailers in the UK and Dutch markets through introduction of the EurepGAP standard (now known as GlobalGAP).

The more stringent export requirements associated with the horticulture GVC are generally recognised as resulting in significant investments in efficiency and productivity in the sector. Kenya is often referred to as a country which has been able to transform the challenges associated with adhering to standards in production into opportunities (Henson and Jaffe, 2006). Most European buyers of agricultural produce now demand evidence of certification as a prerequisite for doing business.

The ability of Kenya to consistently meet these standards and embed adherence within a national compliance architecture was rated highly by key informants within the sector and an important source of competitive advantage.<sup>266</sup> In comparison, efforts to develop a compliance infrastructure in Ethiopia remain work in progress.

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266 The results of key informant interviews, including with buyers.

The most challenging aspects of adherence to private standards include the record-keeping requirements associated with demands for traceability of produce and chemical application. Because the non-recurrent costs of certification vary according to the size of farms and number of employees, it is easier for larger firms to cover these costs. For example, Henson and Jaffe (2006) estimated non-recurring costs to be in the region of US\$450–510 for outgrowers (with 15 to 20 acres) who supply exporters and from US\$75,000–100,000 for integrated producers/exporters (with 1,000–1,800 acres). These costs vary from less than 4 percent of annual sales for producers/exporters to 6–11 percent for smaller producers and outgrowers.

Upgrading challenges do vary according to marketing channel. One example of this is the fact that the certification processes undertaken by the KFC for quality standards by its members are still not mutually recognised as equivalent to the dominant private standard used in auction houses in the Netherlands. This means that producers in Kenya have to cover the costs of audits undertaken by Dutch certifiers, in addition to those undertaken by the KFC; the resultant effect is an increase in costs for exporters which reduces their relative competitiveness *vis-à-vis* Dutch producers.<sup>267</sup> Obtaining certification for the standards required in the Dutch market was noted as being easier for firms that benefit either from Dutch ownership or Dutch managerial experience. Anecdotal information suggests that certification for Dutch auction houses can be discretionary and more likely when domestic Dutch produce is unavailable.

More recently, across European marking channels, issues relating to labour rights and minimum wages within the sector have become important issues. European retailers are keen to demonstrate their adherence to corporate social responsibility. Adherence to social as well as environmental standards has only more recently been discussed in relation to the auction house sales route. The introduction or mutual recognition of related standards across these marketing channels may induce future consolidation processes within the sector, similar to those processes ongoing in the textiles and clothing sector.

### 9.3.2 Firm-level organisation

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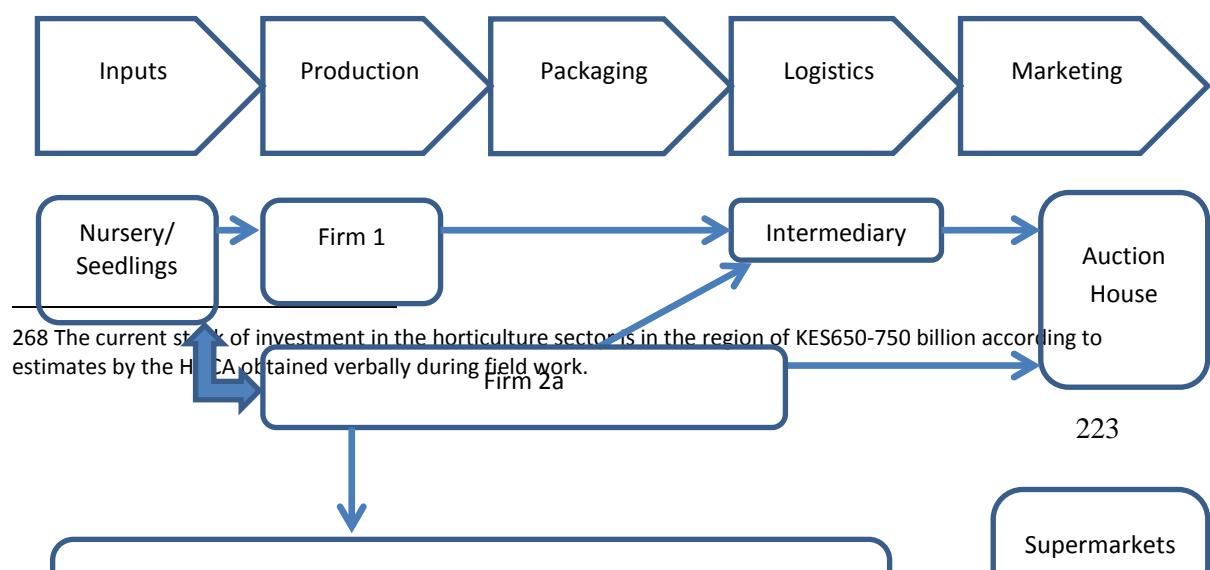
<sup>267</sup> This has been discussed at some length in Keane (2013b).

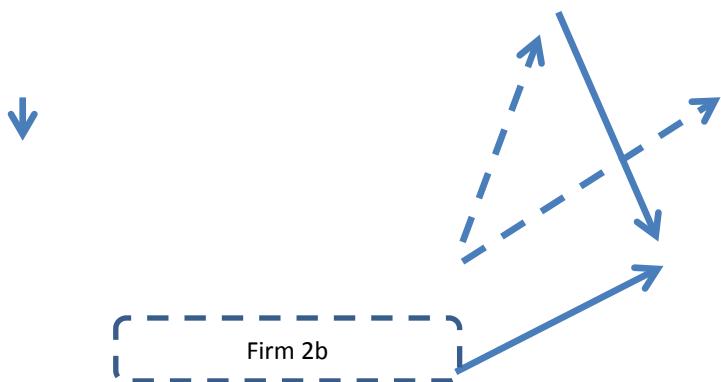
As discussed in Hortiwise (2012) small and medium-sized producers – not only smallholders but also producers with less than about 10 hectares – find it increasingly difficult to compete by themselves at the international level, which means they have to collaborate with larger firms in order to access export markets. According to Hortiwise (2012) smaller producers may be able to produce high-quality flowers, but a lack of post-harvest handling knowledge severely limits their ability to sell flowers.

For example, it is estimated that capital investment in flower production requires at least US\$50,000 per hectare, and this in addition to access to marketing networks (Bolo, 2008). Access to these networks requires contacts and tacit knowledge; it also requires trust, which in turn requires repeated transactions. These requirements necessarily confine most small-scale growers to summer flowers that can be grown outdoors and which do not require as heavy investment in greenhouses as roses, the major flower exported.<sup>268</sup>

Figure 13 presents a stylised overview of how firms are organised within the cut-flower value chain in Kenya. In order to present this graphically, the approach of Gereffi and Frederick (2010) which identifies tiers of suppliers in the garment GVC is adapted. Figure 13 therefore delineates the relative position of the three types of firms identified in the Kenyan cut-flower GVC. Table 38 then describes the functions undertaken by the different types of firms.

**Figure 13: Cut-Flower Value Chain in Kenya**





Source: Field work and key informant interviews.

**Table 38: Functional Capabilities of Kenyan Cut-Flower Firms**

Functional capabilities	Description of activities
Type 1: Sub-contractor/Assembler  Product: Foliage/ Summer Flowers/ Roses  Supplier tier: Marginal Supplier	Small Indian/African firms are integrated into the cut-flower GVC through acting as sub-contractors to larger firms (Type 2) or intermediaries. This is a form of subcontracting in which the Type 1 firm is responsible for the supply of the product up to its final destination, Type 2 firms or intermediaries.  In some cases, inputs may be supplied by Type 2 firms to Type 1 firms, depending on the sub-contracts and end-product specified. These farms tend to be relatively small-scale and specialise in a limited number of cut-flower types, including summer flowers.
Type 2: Package Contractor/Assembler  Product: Roses, and/or Foliage/ Summer Flowers (Bouquets)  Supplier tier: Preferred Supplier and may subcontract; or Niche Supplier	Type 2 firms tend to be medium-scale firms that have greater functional capabilities than Type 1 firms, both growing and packaging to specification. They may also have their own nurseries and use these to supply other firms with plant varieties.  These firms tend to have set annual contracts with their buyers for specific volumes and prices. They may however, also develop more informal linkages with Type 3 firms and supply them; similarly, they may in turn sub-contract Type 1 firms so as to fulfil their buyers' requirements. For example, Dutch auction houses typically require a steady supply of high-volume and high-quality roses. In comparison, retailers may require specific products, such as bouquets, which require both roses and other summer flowers/foliage.  Generally Type 2 firms are responsible for the supply of the product up to its final destination. Because of the differences in end-markets and product supplier, we distinguish between Type 2a firms which are preferred suppliers to their buyers, and Type 2b firms which tend to be niche suppliers to auction houses. Both types of firm may make use of an intermediary based in Kenya, but do not rely solely on them, as they have established their own direct links with end-markets.
Type 3: Package Contractors/Full Package Provider  Product: Roses  Supplier tier: Strategic Supplier; or Niche Supplier	Large multinational enterprises typically not only have their own nurseries integrated within their supply chains but also tend to be vertically integrated, taking care of production, packaging and logistics. This means that the price invoiced or quoted by Type 3 firms includes insurance and all other charges up to the named port of destination, or named place in the country of destination such as a warehouse.  A full package supplier carries out all steps involved in production; this includes the selection, purchasing, and production of materials; the completion of production; and delivery of the finished product to the buyer which are:  Dutch auction houses Supermarkets/Retailers.

	Type 3 firms may sub-contract Type 2 firms in order to fulfil their buyers' requirements. This has been indicated in Figure 1.
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Source: Field work and key informant interviews

Altogether five in-depth firm-level visits and a number of focus group interviews with workers and managers were undertaken.<sup>269</sup> As a result of these interviews and discussions with key informants, three main types of cut-flower firms were identified which vary in terms of size (land area and number of employees), output, ownership, functions undertaken and marketing channels supplied. Because it was not possible to obtain accurate figures on the size of firms where interviews were carried out, in terms both of number of employees and land area, firms have been categorised according to their functions, as follows:

- **Type 1:** subcontractor/assembler.
- **Type 2a:** package contractor/assembler.
- **Type 2b:** niche supplier.
- **Type 3:** package contractor/full package provider.

It was not possible to obtain any list of registered firms from the HCDA or its employees during fieldwork, nor from the KFC. The difficulties in obtaining this information are also referred to by Riisgaard (2009), who mentions an estimate of 150 growers made in 2003.<sup>270</sup> However, the more recent estimate made by the KFC of approximately 120 growers in the sector seems reliable, and is substantiated by Ksoll et al. (2009) who identified 104 established producers/exporters during their survey undertaken in 2008.<sup>271</sup> The 70 growers registered with the KFC were estimated to account for around 60–70 percent of the volume of exports in the sector and employ 90,000 individuals directly, 500,000 indirectly.

The identification of a population of 104 firms by Ksoll et al. (2009) was based on an analysis of daily export data on exports of flowers from customs records for the

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269 See Appendix 2.

270 The source for which is not noted.

271 They restricted their sample of cut-flower firms to established producers/exporters that exported throughout most of the season. They excluded traders, or intermediaries, from the sample, but these types of exporter may still be registered with the KFC.

period from September 2004 to June 2010. These records were then cross-referenced with company registers, including with the HCDA and the KFC, and their existence verified. In total these firms accounted for 90 percent of cut-flower exports from Kenya (we assume for the period 2004–10, or nearest year).<sup>272</sup> Because traders were excluded from the sample, we can say that these types of firm – intermediaries – must account for the remaining 10 percent of cut-flower exports not accounted for by the 104 firms identified by Ksoll et al. (2009). The estimate of 120 firms in total in the sector by the KFC probably includes the traders excluded in the sample undertaken by Ksoll et al. (2009).<sup>273</sup>

### 9.3.3 Changes in firm-level organisation

The number of firms in operation according to key informant interviews was reportedly stable since around 2006. However, there is some evidence of new accumulation processes underway. For example, a number of medium-sized suppliers (Type 2 firms) have been brought under new contractual arrangements as a result of a recent merger between two of the largest cut-flower farms in Kenya (Type 3 firms). For example, Homegrown – one of the largest horticultural producers in Kenya (which used to supply retailers, rather than Dutch auction houses) – was bought out by Findlays, one of the largest flower producers/exporters in Kenya. Overall, the results of stakeholder interviews suggest rather less evidence of smaller producers being squeezed out of the sector<sup>274</sup> than of being incorporated.<sup>275</sup>

This information is also reported in *The Economist* (2014) which argues that this trend is part of a new diversification strategy across product lines by horticultural producers. It results from increasing land and labour costs. Rising production costs are prompting a new wave of consolidation and vertical integration as economies of scale and close ties to retailers become ever more important. Products with higher margins than vegetables include flowers, as well as prepared meals.

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272 The authors do not specify for which year.

273 However, they do contradict those made by others who have analysed the sector in the past. For example, Bolo (2008) estimated that 97 percent of total flower exports come from the largest firms, most of which are owned by foreign investors. Based on the more recent firm-level survey undertaken by Ksoll et al. (2009), the estimates made by Bolo (2008) seem less reliable.

274 Since their participation has always been a challenge.

275 As mentioned as far back as Jaffee (1992) the pattern of employment creation within the different segments of horticulture production reflects Kenya's specific structure of production; since its early expansion phase in the 1980s, the sector has incorporated considerable numbers of smallholder horticulture farmers in the export of vegetables, fruits and, to a lesser extent, cut-flowers.

Farms that previously grew vegetables are moving into cut-flower production and export, e.g. Homegrown was previously a vegetable producer/exporter, but was brought into the cut-flower value chain through the buy-out by Findlays. Because of these consolidation processes, some Type 3 firms are entering into new contractual arrangements with Type 2 firms. This entails Type 2 firms agreeing to supply Type 3 firms on an annual basis with specific quantities of flowers. These contracts are verbally set annual arrangements on prices and volumes.

#### **9.3.4 Differences in contractual relations**

Contractual relationships with retailers are developed based on a specific flower product to be supplied – seasonally or throughout the year (to be supplied daily, weekly or monthly). Interviews with firm managers confirmed that contracts are set on an annual basis with retailers and these specify the volume to be supplied at a set price. This result is corroborated by Ksoll et al. (2009) who note that the relationship between the exporter and the foreign buyer is governed through a (non-written) relational contract. Contracts with retailers could be verbal or written, on an annual basis. In comparison, verbal contracts seemed to be more prevalent amongst firms operating within country.

Regarding the supply of cut-flowers, specifically roses, to auction houses, only the largest firms or those vertically integrated were considered to be able to maintain their position within the auction house. These are the Type 3 firms identified in Table 38, as well as some niche suppliers (Type 2b firms). This is because prices decline throughout the year, but in order to remain recognised and preferred suppliers, branded producers must maintain supply. This means that the risks for producers are greater, but so too may be the returns if prices are bid up.

Firms have no control over the price, nor contractual obligations for delivery. However, the results from key informant interviews do suggest very close relationships between firms supplying the Dutch auction houses: firms are in some cases vertically integrated or otherwise have close relationships between the manager of the firm and the supplier to the auction house (an intermediary based in the Netherlands). This has been described in Table 38. For firms which rely solely on intermediaries to provide them with orders to fulfil, verbal contracts are typically

utilised in view of close relationships between the intermediary and the production manager. These have been identified as Type 1 firms in Figure 13.

It became clear through discussions with industry representatives that firm ownership mattered less than the ability to retain managers with strong links in end-markets. There were instances of firm buy-outs where new owners had offered substantial remuneration packages in order to retain all staff previously employed by the former company. The reasons put forward for this included the need to maintain strong links with buyers and retailers.

### **9.3.5 Validation of Firm-Level Organisation**

In order to validate the findings from fieldwork, including regarding the three main types of firms identified, the secondary data obtained by Ksoll et al. (2009) was used. Their firm-level sample was selected based on the total number of cut-flower firms exporting regularly using customs data, which was then validated with the firms registered with the HCDA and other producer associations including the KFC. A subsequent survey was then undertaken during the summer of 2008, but not randomly because of non-response rates.

The producers/exporters they sampled accounted for 90 percent of all flower exports from Kenya. Because they excluded traders from their sample, the remaining 10 percent of exports must have come via traders, and hence the Type 1 firms identified in Figure 13. Only two firms surveyed in their sample exported 100 percent of their output via traders, and only one of these firms has reported values for the indicators of interest to the analysis carried out in this chapter. Although their research sought to analyse the effects of conflict on firm-level performance and the effect of post-election violence on exports from Kenyan cut-flower firms, their survey instrument includes a number of questions of interest to this thesis. The survey was undertaken by Ksoll et al. (2009) during the summer of 2008, with the most senior person at the firm (on most occasions, the owner).

Because of non-response rates, a representative sample of 74 firms, i.e. about three-quarters of the total sample, located in all the producing regions of the country, was surveyed. They describe how this sample is representative because of a comparison-

of-means test between the firms surveyed and those not, which have no significant differences (see Table 39). The only significant difference between the 74 firms sampled and those not, relates to location.<sup>276</sup>

**Table 39: Differences in Means for Kenyan Sample**

Surveyed vs. Non-Surveyed Firms, Administrative Records						
Variable	Observations	Mean in surveyed	SE surveyed	Mean in not surveyed	SE non surveyed	p-value
Violence (yes/no)	104 [=74+30]	0.62	0.06	0.38	0.08	0.00***
Export (yes/no)	104 [=74+30]	98.87	32.25	101.89	19.84	0.51
Foreign owner (yes/no)	104 [=74+30]	0.4	0.06	0.38	0.08	0.42
Indian owner (yes/no)	104 [=74+30]	0.23	0.05	0.23	0.07	0.54
Kenyan owner (yes/no)	104 [=74+30]	0.34	0.08	0.28	0.07	0.26
Politically connected (yes/no)	104 [=74+30]	0.24	0.05	0.21	0.06	0.37
Firms in Areas with and without Violence, Survey Data						
Variable	Observations	Mean in No. Violence	SE No Violence	Mean in Violence	SE Violence	p-value
Number of workers (2008)	74 [=32+42]	480.83	103.82	456.45	45.18	0.81
% workers with primary education	74 [=32+42]	36.73	5.43	49.31	5.54	0.11
% workers with secondary education	74 [=32+42]	52.08	4.99	41.08	4.89	0.12
Year firm created	74 [=32+42]	1997	1.03	1998	0.81	0.66

Note: Data obtained in 2008 by Ksoll et al. (2009).

Source: presented in Ksoll et al. (2013).

The full results across all of the variables they collected which are of interest to the analysis carried out in this chapter are available for only 64 firms. This leaves 10 firms for which data are missing. Because this is a small number and the firms have been excluded precisely because they do not have the indicators of interest to this thesis, they are unlikely to seriously bias the analysis undertaken. Nevertheless, we remain cautious regarding the generalisation of results to the total population of cut-flower firms.

#### *Analysis of secondary firm-level data*

Table 40 shows the average age of the firms is 16 years, the average size 107 hectares, the average number of employees 613<sup>277</sup> and output 373,571 (kgs) of cut-flowers per

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276 With the former more likely to be located in a region affected by violence. There are no significant differences across indicators for firms located in areas with or without violence.

annum. However, the data do not enable us to identify the type of cut-flower exported by each firm. There is considerable variance across firms in terms of size and output per annum. This is not necessarily problematic at this stage, since this analysis seeks to validate the findings of fieldwork regarding the types of firm involved. The large variance in farm size and output is caused by a few outliers and is to some extent to be expected given the history of the development of the cut-flower industry. Analysis of histograms for the data indicates a more normal distribution of firm age (length of time of operations).

**Table 40: Descriptive statistics for Kenya – overall firm sample**

Indicator	N	Range	Mean	Std. deviation
Firm age (years)	64	25	15.6	5.6
Land (hectares)	64	2498.8	107.1	378.6
Employees	64	4466	612.8	819.2
Output (kg)	64	13,399,942	385,546.48	1,673,785.7

Source: Ksoll et al. (2009).

Breaking down the sample by firm ownership<sup>278</sup> (Table 41) shows some interesting results. Foreign firms tend to be larger, in terms of both land area and number of employees. They also produce more. We can also test for significant differences in the mean result for firms differentiated by ownership, using an independent samples t-test. However, no value is below 0.05 which means there is no significant difference in means.<sup>279</sup>

**Table 41: Descriptive statistics differentiated by ownership**

Numerical indicator	Dummy ownership (1=foreign)	N	Mean	Std. deviation	t-value
Firm age (years)	1	33	16.0	6.1	0.526
	0	31	15.1	5.1	
Land (hectares)	1	33	160.9	521.6	0.243
	0	31	49.79	64.9	
Labour (employees)	1	33	765.1	1006.2	0.126
	0	31	450.7	526.1	
Output (kg)	1	33	613,177.1	2,320,957.1	0.265
	0	31	143,230.03	140,130.9	

Note: Equal variances assumed for all indicators except land.

Source: Ksoll et al. (2009).

277 Of which 80 percent are permanent and 20 percent seasonal; the differences across firms in terms of numbers of permanent/seasonal employees has not been explored further.

278 Dummy=1 if foreign. The data prepared by Ksoll et al. (2009) is broken down into the following categories and the number of firms included within each is bracketed: foreign (30); Kenyan/African (20); Kenyan/Indian (14); Kenyan Indian + foreign (2); mixed (2). We include mixed and + foreign within the overall foreign category (4 firms in total).

279 The Levene's Test for Equality of Variances is above 0.05 for all variables presented in Table 23 except land.

Given our awareness of how firm ownership may matter less as an explanatory variable in terms of accessing a particular market than, say, the availability of foreign managers – discussed in much more detail in the next sub-section – the sample was been differentiated by marketing structure in order to identify differences in numerical variables across marketing strands:

- Auction.
- Direct to buyers (retailers).
- Traders (via an intermediary).

Only two of the 74 firms surveyed by Ksoll et al. (2009) dealt solely with traders (Type 1 firms in Figure 13) and only one of these is included in the reduced sample of 64 firms. However, within the sample some firms did use traders as well as supplying either auction houses or retailers directly. These types of firm correspond to the Type 2 firms identified in Figure 13. Other firms dealt only with either the auction house or retailers – the Type 3 firms identified in Figure 13. Because of the results of fieldwork, we expect these Type 3 firms to be the largest and more productive exporters, with a higher probability of being foreign-owned.

The data collected by Ksoll et al. (2009) was analysed to see if this was indeed the case. Before doing so, some coding issues were addressed. For eight of the firms which reported the percentage of their exports going to auction house, these were less than 100 which suggests that flows have gone elsewhere, including via traders. In order to address this issue, we created and coded the data as follows using dummy variables:

- Direct to auction: if 100 percent of exports.
- Direct to retailer: if 100 percent of exports.
- Both, including traders: if less than 100 percent is exported to either auction or retailers, and if traders are used.

Table 42 presents numerical variables for firms differentiated by their marketing channel. Because this reduces the sample size for firms included within each

marketing channel, we are not able to test for significant differences across variables for firms that export via each channel. Nevertheless, we can see that the firms which supply retailers directly tend, on average, to have been established for a few years longer than those that supply other marketing channels. They also tend to be the largest firms, in terms of land, employees and output. In contrast, firms that export to auctions tend to be smaller in terms of land, employees and output. To some extent this corroborates the results of fieldwork, which identified niche suppliers of roses that supply auction houses directly (Type 2b firms). The largest firms (in terms of land and output) also tend to supply both channels. These results corroborate the Type 3 firms identified during fieldwork and presented in Figure 13.

**Table 42: Descriptive statistics differentiated by marketing channel**

Indicator	Marketing channel	N	Mean	Std. deviation
Firm age	Direct auction	14	16.4	3.9
	Direct retailer	13	18.2	6.0
	Both	37	14.3	5.8
Land	Direct auction	14	24.9	19.2
	Direct retailer	13	174.8	491.2
	Both	37	114.3	407.3
Labour (employees)	Direct auction	14	491	124.5
	Direct retailer	13	760.4	1152.4
	Both	37	707.9	806.5
Output (kg)	Direct auction	14	76,436.6	46,385.9
	Direct retailer	13	1,180,284.54	3,675,825.183
	Both	40	217,192.05	314,423.340

Source: Ksoll et al. (2009).

### 9.3.6 Summary of Internal Governance

The cut-flower GVC as a sub-set of the broader category of horticultural production is considered within the literature to be characterised by a quasi-hierarchical style of value chain governance. It is quasi-hierarchical because lead firms can exert this control including, but not necessarily confined to direct ownership, which would be more characteristic of a hierarchical value chain (Dolan et al., 1999; Dolan and Humphrey, 2000). The results of fieldwork confirm that this is indeed the case, in some cases, given the evolution of tiers of suppliers in the sector.

However, it is clear that different tiers of producers in the sector have different relationships to buyers in end-markets.

There is evidence to suggest a more relational type of governance exists between some Kenyan vertically integrated producer/exporters and UK retailers. Although it

could be assumed that sales to auction houses would be – in terms of a hierarchy of GVC governance (Gereffi et al., 2005) – a case of market governance, in practice the situation is rather more complex. This is in view of the fact that the auction house serves as an intermediary in order to match buyers and sellers. Moreover, in view of the direct sales arm of FloraHolland, there are overlapping ownership structures between important actors involved in Dutch auction houses and some of the Dutch-owned flower producers based in Kenya.

Exporting to both marketing channels is discussed by Ksoll et al. (2009) as an effective insurance strategy when operating in a risky environment. This could be particularly the case for new entrants. Furthermore, Ksoll et al. (2009) note that Kenyan horticulture development policy should encourage flower exporters to see these channels as complements rather than substitutes; revenue protection of using both outweighs any indirect costs they may incur.<sup>280</sup> What's missing is discussion on how exporting to these different marketing channels influences how production is organised and subsequently, learning by doing and firm-level upgrading processes. These aspects are explored in the sub-section below.

## 9.4 Levels of Learning by Doing

Because there is a clear division across firms in terms of the functions they undertake and therefore their functional capabilities, in this section we first test for learning by doing at the firm-level. We then proceed to analyse meso-level learning by doing processes; within this discussion, the conventional upgrading processes and outcomes referred to in the GVC literature are analysed. Finally, we conclude with regards to identifiable societal learning by doing processes.

### 9.4.1 Firm-Level Learning by Doing

The results of fieldwork undertaken in Kenya highlighted firm-level heterogeneity. Overall, three main types of cut-flower firm were identified. Exporting to different marketing channels places different demands on producers, in terms of the degree of

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280 See IIG (2009).

explicit coordination required. The ability to export to these marketing channels – auction, direct, or via a trader – is expected to be a function of: firm-level capabilities acquired through learning by doing, or firm-ownership structure, where capabilities are limited, according to the Gereffi et al. (2005) framework.

Within the literature, market entry via the auction house (intermediary) is considered less demanding compared to the retail chain (Ksoll et al., 2009; Gebreeyesus and Sonobe, 2011). However, auction house prices are not guaranteed or fixed in advance, as is the case in direct relationships with retailers. In the case of dealing with buyers, specific orders must be filled on time, with little room for manoeuvre. If producers cannot fulfil these requirements, they will be excluded from the supply chain.

Gebreeyesus and Sonobe (2011) tested the hypothesis that firms mainly engaged in direct sales in Ethiopia are more likely to produce more varieties, be larger, vertically integrated and have better human and logistical capabilities. Their results confirmed this hypothesis. However, they did not disentangle whether the marked difference in capabilities between the firms operating through the two marketing channels (direct sales or through an intermediary) were present upon entry (thus coming through FDI) or occurred as a deliberate result of efforts to upgrade. They did not explore the effect of firm age on the likelihood of exporting to one channel rather than another, nor did they control for the influence of foreign ownership. Nevertheless, the results of their analysis suggest that it is important to examine firm-level performance indicators, differentiated by marketing channel.

Modelling a binary outcome can be used to explore the extent to which firm-level characteristics differ between firms across marketing channels and the extent to which some variables matter in comparison to others according to the targeted marketing channel. Probit or logit analysis is useful for such cases where there is a dichotomous output, such as a specific marketing channel. Logistic regression will produce results similar to probit regression; both models are used in the case of exploring non-linear relationships using binary outcome indicators. This is because the usual regression assumption of normality of the independent variable  $\gamma$  is not satisfied, as the choice of marketing channel will take a value of 0 or 1. It means we use a commonly used

transformation, known as the log of odds of a success outcome, or the logit model (logit  $\pi$ ).<sup>281</sup>

The choice of probit versus logit largely depends on individual preferences. In this case a logit model is used because the interpretation of results regarding the influence of firm age, in terms of increasing the odds of selecting one marketing channel over another, is more intuitive. This type of analysis could help to highlight the extent to which exporting to different marketing channels is related to different firm-level characteristics, as well as pointing out the strength and relationships between variables.

In order to address the overarching research questions, sub-research questions and hypotheses were generated as follows.

Research Question 1: What are the identifiable Learning-by-Doing processes, and are these synonymous with the concept of upgrading?

- Sub-research Question 1a: How does the age of the firm influence the probability of exporting to one marketing channel compared to another?
- Because the age of a firm is used in the literature for accumulated knowledge and experience it is a proxy for Learning-by-Doing. We expect older firms to also be more productive. In view of the direct sales route being most demanding, we expect there to be differences in the extent to which these variables influence the choice of this marketing channel.
- The null hypothesis is that there are no differences in the significance of this variable across marketing channels.

Sub-research Question 1b: Do more labour-intensive firms tend to export to one marketing channel more than to another?

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281 Some of the assumptions of a logistic regression include: No linear relationship between the dependent and independent variables; the dependent variable must be a dichotomy (two variables); the independent variables need not be in intervals, nor be normally distributed, nor linearly related, nor of equal variance within each group; the categories (group) must however, be mutually exclusive and exhaustive; a case can only be in one group and every case must be a member of one of the groups.

- The earlier GVC literature emphasised how demands placed on producers by buyers would lead to smaller producers being unable to supply the direct sales route. Because the sample size is constrained by the availability of data on the number of educated workers, we use total number of employees/hectares as an indicator of the labour intensity of production. We expect there to be differences in the labour intensity of firms that export direct to retailers compared with those that export to the auction house, because of the greater demands placed on producers.
- The alternative hypothesis is that there are no differences.

Sub-research Question 1c: Do the most productive firms, proxied by output (kg)/hectare, tend to export to one marketing channel more than to another?

- If different marketing channels place different demands on producers and offer different opportunities for upgrading, we would expect some difference in the significance of this variable, as a proxy for productivity.
- The alternative hypothesis is that there are no differences.

Research Question 2: How are differences in Learning-by-Doing processes related to the internal GVC governance structures and to contractual relations between firms?

Sub-Research Question 2: Do foreign-owned firms tend to export to one marketing channel rather than another?

- The GVC literature suggests that ownership matters in relation to accessing markets when the capabilities of producers are low and the value chain has a hierarchical structure of governance. Hence, the null hypothesis is that there are no differences regarding the influence of firm ownership on the choice of marketing structure.
- The alternative hypothesis is that there are differences in terms of how the ownership structure of a firm influences its choice of marketing channel. This results from the length of time that the industry has been in operation in Kenya.

### **Model specification and results<sup>282</sup>**

The logistic regression model is defined below and is tested across the full sample of 64 firms with the following GVC-related indicators specified in the sub-research questions set out in the previous section: firm age, ownership, labour intensity, and productivity. We specify  $\gamma$  as a dichotomous outcome variable, coded as = 1 for the marketing channel of interest, and use  $\pi$  to denote the probability that the marketing channel is selected. The probability of an alternative marketing channel being selected is therefore  $(1 - \pi)$  and hence the model is specified as:

$$\begin{aligned} \text{logit } (\pi) = & \alpha + \beta_1 \text{age} + \beta_2 \text{ownership} + \beta_3 \text{labour intensity} \\ & + \beta_4 \text{productivity} + \varepsilon \end{aligned}$$

We discuss the results for each marketing channel sequentially below. This model was first explored through specifying  $\gamma = 1$  if the marketing channel chosen by firms was the direct sales route (with all other marketing channels specified as 0).<sup>283</sup> The results are presented in Table 43.<sup>284</sup>

**Table 43: Direct marketing channel**

Predictor	$\beta$	Wald $\chi^2$	P	Odds ratio Exp (B)
Constant	-2.967	7.576	0.07*	0.051
Firm age	0.099	2.691	0.101*	1.104
Ownership	0.008	0.000	0.990	1.008
Labour Intensity (land/labour)	-0.327	0.091	0.763	0.721
Productivity (output/land)	0.000	0.001	0.972	1.000

Note: \*denotes significance at the 10% level; \*\*denotes significance at the 5% level.

Source: Data obtained from Ksoll et al. (2009).

Results for the goodness-of-fit of the model are presented in Appendix 4. The Cox and Snells R-Square result suggest less than 5 percent of the variation in the dependent variables is caused by the model. The Nagelkerke R Square of 9 percent also suggests a relatively weak relationship between the predictors and the prediction. The case-wise list presented in Appendix 3 produces a list of cases that did not fit the data; there are only two such cases (one of which is a significant outlier, as its standardised residual is above 2.58), which also suggests the model is generally a good fit to the data.<sup>285</sup>

282 Appendix 4 presents the full results.

283 This means the sample size remains 64 firms.

284 See Appendix 4.

285 A classification plot is also presented.

Looking at the specific variables in Table 43 and interpreting the significance level of the Wald statistic, we can see that firm age is significant at the 10 percent level. Hence we reject the null hypothesis that this variable does not make a significant contribution at this level. No other variables are significant. The interpretation of the odds ratio, or exponent of the regression coefficient ( $\text{Exp}(\beta)$ ) tells us that with each additional year of activity a firm is more likely to choose to export via the direct-marketing channel; we accept the alternative hypothesis specified in Sub-Research Question 1.

However, although this indicator serves as a proxy for accumulated knowledge and experience, the other variables also identified as a proxy for learning by doing, such as productivity are not significant. It is therefore challenging to confirm that older and more productive firms are likely to export via this marketing channel; that learning by doing is reflected in all related indicators.

The results presented in Table 44 are those for predictors specifying  $\gamma = 1$  if the marketing channel is the auction house. None of the predictor variables are significant at the 5 percent or 10 percent level; although results for the goodness-of-fit of the model are presented in Appendix 4, they are not discussed here. Interpretation of these results mean we are unable to answer Sub-Research Question 2. However, we can answer Sub-Research Question 1. This is because the age of the firm does not exert a significant influence on the likelihood of exporting to the auction house. The result is indicative of differences in terms of how accumulated knowledge and experience - tacit knowledge - influences the subsequent choice of the auction house marketing channel for firms (and particularly compared to the direct sales route).

**Table 44: Auction marketing channel**

Predictor	$\beta$	Wald $\chi^2$	P	Odds ratio Exp (B)
Constant	-1.521	2.175	0.140	0.219
Firm age	0.064	1.148	0.284	1.006
Ownership	-0.436	0.481	0.488	0.647
Labour Intensity (land/labour)	-0.602	0.260	0.610	0.547
Productivity (output/land)	0.000	1.450	0.229	1.000

Note: \*denotes significance at the 10% level; \*\*denotes significance at the 5% level.

Source: Data obtained from Ksoll et al. (2009)

The fact that none of the other variables are significant for the auction house route is indicative of other variables beyond those considered within this analysis as being at play. This could include for example, geographical location and distance to transportation hubs in Nairobi. The nature of relationships with buyers in end markets, which may not necessarily be proxied by firm ownership structures, particularly in view of mobile managers within the sector, may be one reason for the insignificance of this variable; this reason may also apply to the insignificance of the firm age variable.

The results for predictors specifying  $\gamma = 1$  if the marketing channel selected was more than one of the following: retailers, auction house, and intermediaries) are presented in Table 45. In this case, the Wald statistic for firm age again becomes significant; this time at the 5 percent level (as compared to the 10 percent level for the direct-marketing route).

**Table 45: Results of quantitative analysis: all marketing channels**

Predictor	$\beta$	Wald $\chi^2$	P	Odds ratio Exp (B)
Constant	1.370	2.570	0.109	3.936
Firm age	-0.104	3.860	0.049**	0.902
Ownership	0.423	0.329	0.566	1.569
Labour Intensity	0.450	0.329	0.576	1.569
Productivity (output/land)	0.000	1.062	0.303	1.000

Note: \*denotes significance at the 10% level; \*\*denotes significance at the 5% level.

Source: Data obtained from Ksoll et al. (2009).

However, the odds ratio Exp ( $\beta$ ) is less than 1. This result tells us for each additional year of activity a firm is less likely to choose to export via all marketing channels. It corroborates the finding that older firms tend to specialise in the direct sales route; there may be some movement across marketing channels before specialisation begins. It means we have to accept the alternative hypothesis, specified in sub-Research Question 1.

There are differences in learning by doing processes as proxied by firm-age, across marketing channels. In this case, firms with more accumulated tacit knowledge and experience are less likely to supply all routes and hence more likely to specialise in one marketing channel. This movement is likely to be towards the direct sales route, given the result obtained for this marketing channel in relation to firm age.

With regard to the goodness-of-fit for the model, results are specified in Appendix 4. However, to summarise, the value of 0.083 for Cox and Snells R-Square suggests only 8 percent of variation in dependent variables is caused by the model; the Nagelkerke R Square result of 0.111 suggests that only around 10 percent of variation is explained. These shares, although low, are higher than in the case of the direct-sales route. As well as looking at goodness-of-fit statistics, we can also look at the proportion of cases classified correctly in the classification table presented in Appendix 4. Overall, 57.8 cases were classified correctly which is a low share, but there were no outliers. Hence, there are mixed results regarding how good a fit the model is to the data.

The test result of the full model against a constant-only model is not statistically significant in any of the models specified across the three marketing channels. Furthermore, in all cases, the results of the  $R^2$  for logistic regressions indicated a weak relationship between the dependent variables and the marketing channel subsequently selected.<sup>286</sup> Given these limitations, some of the outliers identified could be excluded from the analysis, similarly some of the non-significant variables. Excluded variables from the sample such as geographical location could be integrated, if the data permitted.

The fact that the ownership variable is not significant in any of the marketing channels analysed to some extent confirms the classification of a quasi-hierarchical governance being in operation: this is one not necessarily characterised by direct ownership (as in a hierarchical type of governance). Other indicators, including the role of qualified managers could prove to be insightful, but we are constrained by data limitation which limit our ability extend the analysis.

The inclusion of other firm-level data, including that of Ethiopia, could be used to increase the sample size and explore country-specific factors through the use of interaction effects. However, generally the results are intuitive enough in terms of the significance of the predictor variable identified for the direct sales route (firm age). Overall, the purpose of this quantitative analysis is not to draw definitive conclusions

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<sup>286</sup> See Chi-squared model of coefficients in Appendix 4.

regarding the population of cut-flower firms in Kenya. Instead it is intended to shed further light on the qualitative findings already obtained during fieldwork and to further substantiate them, to the extent possible.

The age of a firm is used as a proxy for learning by doing because it is an indicator of accumulated tacit knowledge and experience. The results of the quantitative analysis are intuitive and insightful since they suggest that older firms are more likely to supply retailers directly because they have the prerequisite knowledge and experience. That is, older firms are more likely to specialise in supplying one particular route than another because they have obtained the tacit knowledge necessary to do so. We cannot say, however, that these firms tend to be more productive, have a higher labour intensity of production, or are more likely to be foreign-owned.

#### **9.4.2 Learning by Doing – Sectoral Level**

Bernhardt and Milberg (2011) use unit values and market shares as a proxy for economic upgrading. Based on their analysis of the horticulture sector in Kenya, they find evidence of economic upgrading from the 1990s to date. They also identify social upgrading at the sectoral level. Although we agree there is evidence on economic upgrading, the available evidence on social upgrading seems far less convincing.

#### ***Product Upgrading***

It is estimated by the KFC that most of the cut-flowers produced in Kenya are destined for auction houses in the Netherlands (65 percent) while the remainder goes to retailers in other EU markets, notably the UK. This estimate is supported by analysis of cut-flower export data. The main destination markets for cut-flowers can be seen from Table 46 to be the Netherlands and the UK. These end markets not only have different drivers – predominantly retailers in the UK market and auction houses in the Netherlands – but also demand a different flower product. Auction houses require a steady and consistent flow of cut-flowers, but retailers demand not only cut-flowers, but also other ‘prepared’ flowers (dried, dyed, bleached, etc.).

**Table 46: Cut-Flowers – Kenyan exports and EU markets**

Year	Fresh cut-flowers (HS 060310)			Other cut-flowers (HS 060390)		
	Value (US\$000)	Volume (Kg 000)	Unit value (US\$/kg)	Value (US\$000)	Volume (Kg 000)	Unit value (US\$/kg)
2001	134,294	50,168	2.7	318	314	1.0
2002	99,386	36,084	2.8	165	121	1.4
2003	175,446	61,544	2.9	568	389	1.5
2004	231,370	81,520	2.8	519	274	1.9

2005	241,738	84,358	2.9	823	314	2.6
2006	273,822	96,663	2.8	1,123	401	2.8
2007	259,296	81,722	3.2	54,116	16,148	3.4
2008	253,691	76,475	3.3	192,304	33,531	5.7
2009	245,692	77,029	3.2	175,793	36,770	4.8
2010	276,779	79,388	3.5	119,460	29,191	4.1
Avg. ann. Change	8.4%	5.2%	3.0%	93.3%	65.5%	16.8%
Main markets (accounting for 5% or more of exports):						
2001	Netherlands (62%), UK (22%), Germany (8%)			Netherlands (49%), Germany (11%), Spain/USA (10%), Italy (6%)		
2010	Netherlands (68%), UK (14%)			UK (48%), Netherlands (30%), Germany (8%)		

Source: Adapted from Stevens et al. (2013).

As discussed by Stevens et al. (2013) not only does analysis of trade data suggest that Kenya's cut-flower exports have grown rapidly in value, but there has also been diversification into higher-value items in the last decade. This indicates not only process upgrading, in terms of increasing supply, but also product upgrading, through increasing the type of cut-flowers exported. As shown in Table 46, at the start of the decade Kenya mainly exported fresh cut-flowers: sales increased fairly steadily over the decade, rising by an annual average 8.1 percent in value and 5.2 percent in volume, resulting in an increase in unit values of 3 percent a year (Stevens et al., 2013).

However, the second part of this decade saw rapid growth from very low levels of 'dried, dyed, bleached, impregnated or otherwise prepared cut-flowers and buds, for bouquets or for ornamental purposes'. This category includes the prepared flowers, required to create bouquets and sprays. These products are demanded by retailers, and not auction houses. Exports of this category can be seen to have a slightly higher unit value compared to fresh cut flowers. The main destination for this product category (HS060390000) is the UK.<sup>287</sup> More recent unit value analysis, presented in Table 47,<sup>288</sup> confirms the relatively high unit value for this particular flower product. However, at this level of disaggregation ad period of time (2008-214), there appears to be a general decline in unit values.

**Table 47: Kenya Cut Flower Unit Value Analyses**

287 Based on more disaggregated trade data analysis.

288 This information is presented only for Kenya's major exports of cut flower products and therefore excludes the following products, where market share in the EU is less than 5 percent: HS06031300; HS06031400; HS06031500; HS16031990; HS06031910.

HSCode	Descrip.	Avg. ann. change earliest to latest year	Share of EU M from Extra-EU		Unit values (€/kg)					2012	2013	2014	
			in 2008 (or 2012)	in 2014	2008	2009	2010	2011	2012				
0603 CUT FLOWERS AND FLOWER BUDS OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES, FRESH, DRIED, DYED, BLEACHED, IMPREGNATED OR OTHERWISE PREPARED													
	Extra EU28	2.40%	100.00%	100.00%	4	3.9	4.1	4.1	4.4	3.3	3.4		
	Kenya	1.10%	40.60%	37.60%	3.9	3.7	3.8	3.7	3.9	2.7	2.8		
06031100 FRESH CUT ROSES AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES													
	Extra EU28	5.10%	100.00%	100.00%	3.9	3.8	4.1	4	4.3	2.9	3.1		
	Kenya	3.20%	52.70%	47.10%	3.7	3.5	3.7	3.6	3.8	2.5	2.6		
06031200 FRESH CUT CARNATIONS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES													
	Extra EU28	-1.30%	100.00%	100.00%	4	3.8	4.1	4	4.2	3.6	4.1		
	Kenya	-8.40%	24.50%	15.70%	4.3	4.4	4.5	3.9	4.1	3.2	4.1		
06031990 FRESH CUT FLOWERS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES (EXCL. ROSES, CARNATIONS, ORCHIDS, GLADIOLI AND CHRYSANTHEMUMS)													
	Extra EU28	-1.20%	100.00%	n/a	4	4.1	4.3	4.3	Code ceased 2012				
	Kenya	-8.80%	23.60%	n/a	3.9	3.7	3.7	3.7	Code ceased 2012				
06039000 DRIED, DYED, BLEACHED, IMPREGNATED OR OTHERWISE PREPARED CUT FLOWERS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES													
	Extra EU28	0.00%	100.00%	100.00%	5.9	5.5	4.7	5.7	6.1	5.9	6.1		
	Kenya	-14.80%	57.90%	22.10%	10.3	10.5	7	7.2	7.3	5.9	6		

Source: Eurostat, COMEXT database, dataset: DS-045409-EU Trade Since 1988 by HS2, 4, 6 and CN8, extracted 17 June 2015

In addition to the decline in unit values apparent from Table 47, it is clear that market share in the EU market has been lost rather than gained, since 2008. The decline in market share is coupled with a decline in unit values and this is apparent across all of the product categories presented in Table 47 and is summarised more clearly in Table 48. This evidence is more suggestive of economic downgrading, rather than upgrading.

**Table 48: Export Value and Market Share**

HSCode	Descrip.	Value (million Euros)			Share of EU M from Extra-EU		
		2008	2014	in 2008 (or 2012)	in 2014		

0603 CUT FLOWERS AND FLOWER BUDS OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES, FRESH, DRIED, DYED, BLEACHED, IMPREGNATED OR OTHERWISE PREPARED					
	Extra EU28	913.1	1,053.4	100.0%	100.0%
	Kenya	370.9	396.2	40.6%	37.6%
06031100 FRESH CUT ROSES AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES					
	Extra EU28	512.5	692.4	100.0%	100.0%
	Kenya	270.3	325.9	52.7%	47.1%
06031200 FRESH CUT CARNATIONS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES					
	Extra EU28	126.2	116.5	100.0%	100.0%
	Kenya	30.9	18.3	24.5%	15.7%
06031980 FRESH CUT FLOWERS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES (EXCL. ROSES, CARNATIONS, ORCHIDS, GLADIOLI, CHRYSANTHEMUMS AND LILIES)					
	Extra EU28	Code new in 2012	170.8	100.0%	100.0%
	Kenya	Code new in 2012	45.0	27.0%	26.4%
06039000 DRIED, DYED, BLEACHED, IMPREGNATED OR OTHERWISE PREPARED CUT FLOWERS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES					
	Extra EU28	31.1	31.1	100.0%	100.0%
	Kenya	18.0	6.9	57.9%	22.1%

Source: Eurostat, COMEXT database, dataset: DS-045409-EU Trade Since 1988 by HS2, 4, 6 and CN8, extracted 17 June 2015

### ***Process Upgrading***

Recent reorganisation of the sector as a result of mergers and acquisitions has led to new concerns being raised by workers regarding increases in workloads without commensurate pay rises. These issues were expected to be addressed given implementation of the Horticulture Development bill. In the following sub-section, the results of field-work are described in relation to the skill level of employees in the sector and changes overtime.

### ***Skills Development***

Entry-level positions in the cut-flower GVC include the harvesting of cut-flowers and their grading. Employers typically require a leaving certificate from high school, known as ‘Form 4 Certification’. However, this requirement did not seem to be absolute: often entry was reported to be a result of a personal recommendation, past experience or through successfully passing a probationary period. Generally, entry-level wages for these positions are similar across the types of firm interviewed (despite the cost savings that may have resulted from firm mergers and acquisitions). Table 49 presents the relative returns for labourers across firm types.

**Table 49: Relative Returns for Labourers across Firm Types**

No.	Firm Type	Size	Av. volume/value of production	Entry level remuneration
1	<b>Type 3 Firm:</b> 100% FDI, supplying Dutch auction houses directly.	150 hectares; 4,500 employees, of which 1,000 seasonal.	Approximately 200,000 rose stems per day.	KSh6,500–9,300 per month for harvesters and graders.
2	<b>Type 1 Firm:</b> 100% Kenya; Supplies intermediary which then supplies 50% Dutch auction houses; 50% UK retailers.	28 hectares; 1,700 employees.	N/A	KSh6,200 per month for harvesters and graders.
3	<b>Type 2a Firm:</b> 100% Kenyan; Supplies intermediary which then supplies Dutch auction houses/UK retailers.	120 hectares; 600 workers	10,000 stems per day	KSh8,500–13,000 per month for harvesters and graders.
4	<b>Type 2b Firm:</b> 100% FDI (Mixed); Supplying Dutch auction houses.	40 hectares; 950 employees	N/A	KSh6,000–12,000 per month for harvesters and graders.
5	<b>Type 3 Firm:</b> 100% FDI (Dutch); direct sales with auction house; verbal contracts.	450 employees	75 million stems p.a.	KSh12,000–15,000 per month for harvesters and graders.

Source: Key informant and focus group interviews.

Generally, cut-flower production is organised in a fairly generic way. The only major difference being the degree of labour intensity per hectare (employees/hectare). Plots of flowers are overseen by harvesters (approximately 8–11 employees/hectare). Other staff employed included sprayers of pesticides, scouts' who identify pests, and a supervisor or a production manager.

The onus is on the supervisor or production manager to ensure that the following take place: activities are undertaken for a fixed production unit cost, contractual demands are met; the unit remains within budget in terms of fertilisers, chemicals and use of labour. Table 50 summarises the skills required and obtained by workers across these positions, based on the results of focus group interviews.

**Table 50: Skills required across in the Cut-Flower GVC**

Type of labourer	Wage (per month)	Functions undertaken	Skills required	Skills obtained
Harvester	KSh6,000–12,000	Overseeing production units and ensuring that production meets buyers' specifications.	Form 4 Certification, or other experience.	Health and safety; integrated pest management; pesticide use; other social, organisational skills.
Grader	KSh6,000–12,000	Overseeing harvesting of cut-flowers, their grading and also potentially their packaging. Ensuring that these meet buyers' specifications.	Form 4 Certification, or other experience.	Health and safety; integrated pest management; pesticide use; other social, organisational skills.
Sprayer	KSh12,000+	Ensuring that production units are adequately sprayed with pesticide/fertiliser.	Technical training on pesticides/chemical use; in addition to Form 4	Health and safety; integrated pest management; pesticide use; other social,

			Certification.	organisational skills.
Scout	12,000Ksh+	Ensuring that production units are adequately sprayed/harvested; any emergent pest/disease incidences are addressed.	Technical training on pesticides/chemical use; in addition to Form 4 Cert.	Health and Safety; Integrated Pest Management; Pesticide use; other social, organisational skills.
Supervisor	KSh~20,000	Ensuring that individual production units meet buyers' specifications.		Managerial skills
Foreman	KSh35,000–100,000	Ensuring that collectively production units meet buyers' specifications.	Relevant experience, including technical and on-the-job training; Form 4 certification.	Managerial skills; may have some input regarding contracts
Production manager	Range reported for Type 1 and 2 firms: KSh~35,000–60,000 Range reported for Type 3 firms: KSh200,000+	Ensuring all production is able to meet buyers' specifications.		Managerial skills with staff internal to the organisation as well as externally with buyers; may negotiate contracts/undertake verbal contracts.

Source: Key informant and focus group interviews.

Data collected on the education level of workers for 48 out of the 64 firms surveyed by Ksoll et al. (2009) suggests most firms employ workers with educational levels up to secondary school (Table 51). This substantiates the results of fieldwork. However, because there is some variation, we disaggregate firms by their ownership structure (Table 52), then by marketing structure (Table 53).

**Table 51: Workers and education Level**

Indicator	Mean	Std. deviation
% of workers with no education	3.6	7.0
% workers with primary education	41.3	26.5
% workers with secondary education	46.2	25.8
% workers with higher than secondary education	9.0	7.5

Source: Data obtained from Ksoll et al. (2009).

Breaking down the sample by ownership (1=foreign), foreign firms tend on average to employ a lower share of workers with an educational level of secondary education or higher, and a rather higher share of workers with no education or primary education only (Table 52).<sup>289</sup> This may result from higher capital investments and warrants further attention.<sup>290</sup>

**Table 52: Workers and education Level, by firm ownership**

Indicator	Ownership	No.	Mean	Std. Deviation
% workers with higher than secondary education	1	24	7.52	6.374

289 A slightly lower number of foreign firms (23) provided this information than did domestic firms (25).

290 Unfortunately, however, we are not able to test for significant differences between firms because of the small sample size.

	0	24	10.36	8.266
% workers with secondary education Jan 08	1	24	42.83	27.838
	0	24	49.24	23.962
% workers with primary education Jan 08	1	24	45.57	27.889
	0	24	37.32	24.961
% of workers with no education Jan 08	1	24	4.09	7.798
	0	24	3.08	6.244

Source: Data obtained from Ksoll et al. (2009).

Differentiating firms by their marketing channel, the share of workers with higher than secondary education is highest, on average, for firms that directly supply retailers, as is the share of workers with education up to secondary level (Table 53). This may result from the post-harvesting care required when supplying retailers, as well as the use of higher-skilled labour involved in packaging and combining products like spray bouquets. The highest share of uneducated workers, or those with primary education only, is apparent for those firms that supply both marketing channels.<sup>291</sup>

**Table 53: Differentiated by Marketing Channel**

Indicator	Marketing channel	N	Mean	Std. deviation
Workers with higher than secondary education (%)	Direct auction	8	9.8	9.4
	Direct retailers	9	11.7	8.4
	Both	31	8.0	6.7
Workers with secondary education (%)	Direct auction	8	52.8	22.4
	Direct retailer	9	61.1	24.7
	Both	31	40.1	25.4
Workers with primary education (%)	Direct auction	8	37.1	24.0
	Direct retailers	9	24.4	22.9
	Both	31	47.2	26.4
Workers with no education (%)	Direct auction	8	0.4	1.6
	Direct retailers	9	2.8	5.8
	Both	31	4.6	8.0

Source: Data obtained from Ksoll et al. (2009).

Although Ksoll et al. (2009) did not obtain firm-level information on wages, they point out that wages in the cut-flower sector are set just above the minimum wage, which was (about) KSh200 (slightly more than €2) per day in 2008. This implies earnings of around KSh 1,200 per week and KSh 5,000 per month. These rates are lower than those reported by interviewees in 2012. According to media reports, the minimum wage was increased by 12.5 percent in 2011 in order to keep pace with soaring fuel and food prices estimated at the time to be in the region of KSh 8,364 to

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<sup>291</sup> Because of data limitations, we are unfortunately unable to test for the significance of this result, or link to ownership.

KSh 10,606 a month.<sup>292</sup> Workers interviewed during focus group discussions felt that a monthly wage of approximately KSh 12,500 was required in practice to adequately cover living costs.

It is difficult to clearly assess how pay rates in cut-flower production compare with those in other sources of employment. The last labour force survey in Kenya was undertaken in 1998-99 as part of the integrated labour force survey (ILFS), a nationally representative survey. Although, as discussed by Andalón and Pagés (2008), Kenya has minimum wage legislation in place, it is not enforced. Current categories of employment largely correspond to those in place during the colonial era and the system has not been substantially updated since then. This means it is very difficult to confirm, as others such as Bernhardt and Milberg (2011) conclude, that social upgrading has occurred in tandem with economic upgrading in the cut-flower sector.<sup>293</sup>

Although barriers to entry-level positions may be relatively low, movement into managerial roles is contingent on both prerequisite qualifications (at least Form 4 Certification) and on-the-job training. Wilshaw et al. (2013) conclude that Kenya's horticultural industry is characterised by powerful employers who set pay and working conditions for a largely unskilled labour force; staff turnover is rapid, conditions are tough, and for most workers the prospects of promotion into more influential positions are slim.

Concerns were raised during focus group interviews regarding inequality across wages. Most senior managers within firms frequently were foreign and had close links to buyers. Even when the ownership of firms changed, senior management was retained by the new firm owners because of the need to maintain stable links and personal relationships with buyers in auction houses, as well as with retailers. In such cases, it became apparent that the nationality of firms was less important than the

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292 According to Ombok (2011) before the increase was announced the Central Organization of Trade Unions (COTU), Kenya's main labour-union federation, had demanded a 60% increase, warning that it might call a nationwide strike if the minimum wage was not raised by a sufficient amount.

293 Despite this, the direct benefits of formal employment opportunities, which for workers on permanent contracts could include sickness pay, maternity leave, and subsidised accommodation, are not to be downplayed. It is also notable that entry-level positions such as harvesters and graders are filled by women as well as by men, either immediately following graduation from high school or after having obtained other relevant experience. The barriers to entry to such positions would therefore appear to be low.

nationality of more senior managers and their links to buyers in European end markets.

Overall, therefore it is challenging to conclude that process upgrading in the sector has occurred in terms of a more general upskilling of the labour force so as to achieve efficiency gains. Although the volume of exports from the sector has grown, for some major product lines this has been accompanied by a decline rather than increase in unit values.

### ***Functional Upgrading***

Overall, there is evidence of some Kenyan firms moving towards a position of a full-package supplier. Findings obtained during field work have been substantiated by trade data analysis: results suggest that a broader range of flower products are being supplied to end markets. Some of these products, such as those used in the preparation of bouquets, tend to have a higher unit than more general cut flowers. However, it is clear that unit values have been on the decline, rather than increase over time. There is limited evidence of movement either into the domestic or overseas sales and marketing of cut flowers.

### ***Inter-sectoral Upgrading***

Because of major data limitations, including the inability to obtain a list of registered firms, we are unable to detail inter-sectoral upgrading processes by lead Kenyan firms.<sup>294</sup> Recent policies have been introduced so as to facilitate the entry of SME exporters across the following sectors: horticultural, commercial crafts and textile/apparel. For example, the Export Business Accelerator (EBA) programme is an initiative to nurture SME exporters into medium/large exporting enterprises including through providing tax incentives and business development services; since, these initiatives began in 2009 it is too early to assess their effectiveness.

The evolution of the cut flower GVC described in the previous introductory chapter, suggests some Kenyan lead firms have extended the range of services undertaken within the sector, across countries including in Ethiopia. This is even if they have not

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294 The information on Kenyan registered firms was obtained by researchers based at the IGC through a Memorandum of Understanding with the Kenyan government.

been able to functionally upgrade in the conventional sense, within country. This result deserves further attention.

#### **9.4.3 Societal Learning by Doing**

In relation to the societal wide learning by doing induced by engagement with the cut flower GVC, it is fair to say these have been somewhat constrained by a lack of policy and failure to align external governance and public policy considerations with this objective in mind. The interface between intermediate institutions such as the KFC and public policy makers has only recently been conceptualised and formalised in the KNIS. Hence, although the KFC has been active in driving through innovations in the sector, interactions among enterprises, universities and public research institutes, including informal linkages and joint research remains in the early stages of development.

#### *Elements of National Innovation Strategy*

Generally, industry adoption of technology has been driven independently by firms with limited interest in sharing information. A clique of mobile managers was apparent through firm-level interviews. It was extremely challenging to access firms for interviews. Although elements of an NIS are in place, the degree of social embeddedness and interface with intermediate institutions remains somewhat limited in view of lingering political economy, as well as trust issues. Hence, the process of institutionalising tacit knowledge remains weak. How these linkages will be improved in the future depends on the full and effective implementation of the KNIS.

### **9.5 Conclusions**

The internal governance structures between firms in the sector have been described as rather complex in view of two major marking channels: UK retailers and the Dutch auction house. The available evidence suggests a new wave of consolidation is under way within the sector. This process is occurring amongst Type 3 firms. These firms are subsequently developing new relationships with Type 2 firms: those firms that deal with intermediaries in-country, as well as directly with retailers or auction houses.

It could be assumed that sales to auction houses would be – in terms of a hierarchy of GVC governance (Gereffi et al., 2005) – a case of market governance. However, in

practice given overlapping ownership structures between important actors involved in Dutch auction houses and some of the Dutch-owned flower producers based in Kenya, the situation is more complex. As new lead firms have emerged, some retailers have increased purchases direct from growers under long-term contracts. There is evidence to suggest a more relational type of governance exists between some Kenyan vertically integrated lead firms and UK retailers.

The identification of learning by doing processes at the firm-level has relied on secondary data obtained by Ksoll et al. (2009). The results from this analysis, which uses the age of the firm as a proxy for accumulated tacit knowledge and experience, suggests older firms tend to have more direct relations with retailers. This is an expected result, with reference to the Gereffi et al. (2005) framework.

However, it was not possible to identify a significant influence of other firm-level characteristics on this choice of marketing structure, including other learning by doing indicators for productivity and labour intensity. Nevertheless, this result is expected given the length of time the cut-flower sector has been in operation in Kenya. It corroborates the presence of a more relational type of governance in operation for some tiers of firms, in view of the consolidation processes which have occurred in the sector.

It is more challenging to identify product and process upgrading. Although there is evidence of functional upgrading, outcomes in terms of an improvement in producers' capabilities are less obvious. It has not been possible to confirm human capital upgrading processes as envisaged by Nelson and Pack (1999) in terms of higher wages and remuneration increasing demand for skilled labour. The ability to clearly identify inter-sectoral upgrading processes have been limited. Finally, societal learning by doing processes have been described as only recently being stimulated by policy interventions, the effective implementation of which remains to be seen.

Overall, results are suggestive of an inability to align internal and external value chain governance, and translate the tacit information obtained in the sector into knowledge stock, over time. The evidence presented in this chapter shows how the facilitative rather than directive approach to GVC integration has resulted in a limited ability to

influence internal GVC governance structures and hence generate and sustain learning by doing processes in line with the trajectory envisaged by Nelson and Pack (1999).

## **10. Learning-by-Doing in the Cut-Flower Sector: Ethiopia**

This chapter begins by outlining Ethiopia's integration process with the cut-flower GVC. As the comparator case-study to the Kenya, the external GVC governance structures which have shaped Ethiopia's integration with the cut flower GVC are described. Ethiopia's approach towards integration with the cut-flower GVC was more directive than facilitative, though some policy measures could be classified as the latter.

Drawing on the most recent firm-level data for cut-flower firms, an overview of the organisation of the cut-flower value chain is presented. In view of these structures, we then test for the influence of firm-level characteristics on the subsequent choice of marketing structure: direct sales to retailers, to auction houses or both. Results suggest that foreign ownership exerts a significant influence on the likelihood that firms export via the direct sales route. It remains challenging to identify the influence of selected learning by doing indicators on the likelihood that firms export via the auction house marketing channel, using the same research method.

Because Ethiopia is a new entrant to the cut-flower industry we expect foreign ownership, rather than firm age, to influence the likelihood that firms export via the direct sales route. In line with GVC theory, this arises because of low producer capabilities. In practice, the results suggests generally higher shares of educated labour involved in the sector, particularly compared to Kenya.

The approach adopted by the Ethiopian state towards development of the sector was much more directive than facilitative compared to Kenya. Moreover, elements of a NIS were enacted upon engagement with the cut flower GVC. Overall, the results presented in this chapter demonstrate how the more directive approach adopted by Ethiopia has influenced the level and type of learning by doing induced by engagement with the cut flower GVC.

This chapter is organised as follows. In Section 10.1 external governance structures are described and the role of the state positioned as more directive than facilitative.

Firm-level organisation and internal value chain governance is described in Section 10.2. The identifiable learning by doing processes are described in Section 10.3. Finally, we conclude with a summary of identifiable learning by doing processes, with reference to our overarching research question.

## **10.1 External GVC governance**

An FDI-led strategy was pursued in designated priority sectors. Hence integration into the cut-flower GVC was pursued strategically; the approach was more directive than facilitative. However, some aspects of the GVC integration process were facilitative, including the provision of finance to facilitate investment in the sector, described in the sub-sections below.

### **10.1.1 Strategic GVC Integration**

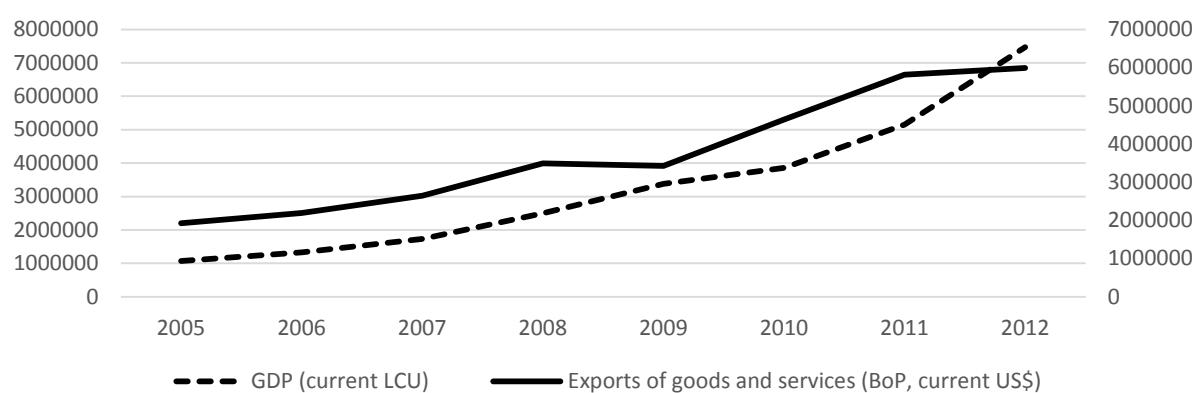
Ethiopia pursued an industrial policy that is private-sector driven but which includes strong state guidance and directives (Ohno, 2009). The state provided financial assistance to entrepreneurs within the sector – elaborated upon in the following sub-sections – as well as other means of support in response to lobbying by private sector organisations. Some authors suggest that subsidies and other fiscal incentives were the main contributory factors to the industry's development in Ethiopia (Rodrik, 2008b; Gebreeyesus and Iizuka, 2010). However, the tariff rent made available to Ethiopia under the EU's EBA regime, and perceived security of this regime relative to market access conveyed to competitors such as Kenya, also served as a form of locational advantage to attract efficiency-seeking FDI.

#### ***Management of Trade and Macroeconomic Context***

Ethiopia essentially operated as a socialist dictatorship until the early 1990s. In 1991, the Ethiopian People's Revolutionary Democratic Front (EPRDF) – a more liberal and progressive coalition – came to power; shortly afterwards, Ethiopia underwent a structural adjustment programme (SAP). The adoption of the SAP, as for many other countries in SSA, was a necessary prerequisite for obtaining resources from the IMF. However, Ethiopia's adoption of the SAP, as a result of a balance-of-payments crisis, occurred much later than other African countries, including Kenya. Moreover, implementation of the SAP was not as deep and wide-ranging as in other SSA countries.

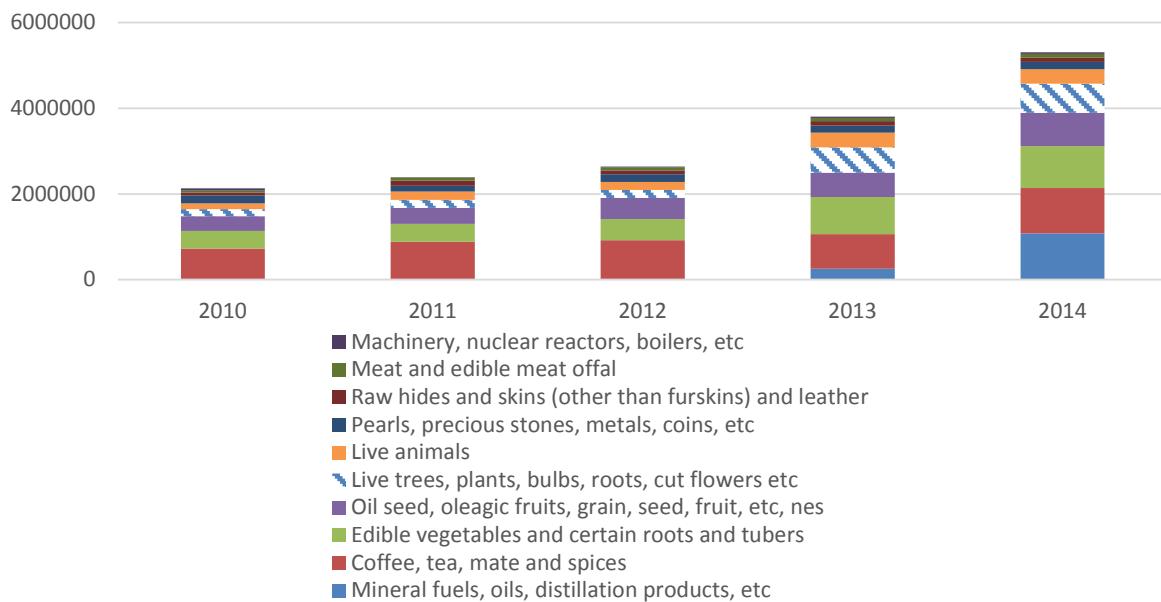
In an extensive review, Taylor (2011) describes how since 1991 Ethiopia maintained a constant budget of around 5 percent, contrary to IMF advice, in order to induce growth. Despite adopting a seemingly staunchly neoliberal agenda in the early 1990s, many authors consider Ethiopia as one of the few African states which in practice adopts a more developmental approach, including governing the market (Ohno, 2009). Figure 14 demonstrates Ethiopia's impressive growth performance, coupled with an increase in exports of goods and services. Exports of cut flowers have increased as a proportion of Ethiopia's total exports, up from 7 percent in 2010 to 12 percent in 2014 (Figure 15); this is now around the same share of Kenya.

**Figure 14: Gross Domestic Product (LCU 000's) and Exports (US\$'000)**



Source: World Development Indicators, accessed 27 June 2015; GDP expressed in local currency units (LCU), 000's.

**Figure 15: Top 10 Exports**



Source: ITC TradeMap, accessed 25 June 2015; units in US\$ thousand.

In order to create incentives for investors to relocate from Kenya, as well as attract new investors, import-tariffs and duties have been removed on the capital goods used in the sector. According to Emana et al., (2010), some of the processes expedited include the bypassing of regulations on the import of pesticides and fertilisers. The Ethiopian investment agency (EIA) serves as a one-stop shop to facilitate investments. Generally, Ethiopia's applied tariff rate across all products is low, on average of 18 percent in 2012.<sup>295</sup>

Because of the fixed exchange rate used by Ethiopia, it retains strict foreign exchange controls. As succinctly summarised by USTR (2011), the requirements and restrictions in place for payments and transfers of international transactions include:<sup>296</sup> a tax certification requirement for repatriation of dividend and other investment income; regulations covering the repayment of legal external loans and foreign partner credits; rules for issuance of import permits by commercial banks; a requirement to obtain a clearance certificate from the National Bank of Ethiopia (central bank) to obtain import permits.

Although in 1994 private banks were permitted, Ethiopia has resisted the entrance of private foreign banks and free capital mobility is not permitted (Taylor, 2011).

<sup>295</sup> 2015 World Development Indicators (accessed 30 July 2015).

<sup>296</sup> USTR (2011).

Foreign exchange controls are in place and the Birr is not freely convertible. Although the foreign-exchange regime has become progressively more liberal over time, most goods exported have foreign exchange repatriation requirements (*Ibid.*).

As discussed in USTR (2011), the foreign exchange regime allows exporters to open a retention account to hold a specified amount of their export earnings for a defined period and use their Forex holdings for their export business promotion. Permission must be granted by the National Bank of Ethiopia (NBE) to open a bank account abroad and companies permitted by a 'competent authority' to hold an account overseas. In Ethiopia both the Constitution and the investment Code protect private property. Ethiopia is also a member of MIGA, which issues guarantees against non-commercial risks to enterprises that invest in signatory Countries (Ethiopia Investment Agency, 2012).

#### **10.1.2 FDI-led Integration**

The perceived security of the tariff rent made available to Ethiopia relative to the major African player in the sector (Kenya) is the one reason explicitly cited by investors active in both Ethiopia and in Kenya as a major reason for their investment. For example, one of the largest and most established cut-flower firms in Kenya (Sher) relocated to Ethiopia in the mid-2000s because of the more secure trading environment and lower labour costs, up to 25 percent less than in Kenya (Taylor, 2011: 189). However, the expansion of operations by Sher to Ethiopia was managed carefully in order to stimulate the entry of domestic entrepreneurs into the sector.

The first foreign investor, Golden Rose, arrived in 1999 from the United Kingdom and its success attracted additional domestic and foreign investors such as ENYI Rose and Summit (domestic firms) and Ethio-Dream (joint venture).<sup>297</sup> A combination of limited room for domestic expansion and stricter environmental and land use planning regulations, prompted the search for new areas to expand in the case of Dutch growers (Melse and Helmsing, 2010). Similar cost-push factors prompted investors to move from Kenya. Sher Ethiopia is now the largest exporter by volume of roses from Ethiopia and is a subsidiary of Sher B.V., the world's largest exporter of roses (*Ibid.*).

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297 See Melse and Helmsing (2010) for more information.

A close relationship between Sher and the Ethiopian state was fostered which did not require the creation of joint ventures. Instead an agreement was reached whereby Sher, in return for the rental right to in excess of 1,000 hectares of land, would operate turn-key projects, granting smaller producers sub-lets of up to 12 hectares, complete with greenhouses and irrigation, on hire-purchase terms.

#### **10.1.3 Directive Approach**

The management of FDI into the sector has been scrutinised closely in the literature. This is because of the perceived generosity of incentives provided to investors in Ethiopia, particularly compared to Kenya (where there are none). Investors can rent land in Ethiopia under long and cheap licences (30 years or more). Land previously under the control of state-owned industries was leased to private investors, which in turn began their own sub-letting arrangements. State farms started to export cut flowers to Europe in 1980, but the scale of the cut flower industry expanded in the mid-2000s with the introduction of privately owned farms (Getu, 2009).

In addition to African investors seeking to relocate, including from Kenya, others have been drawn into the sector. This includes not only those growing and selling to the UK retail market, but also those selling to the Dutch auction house – the largest in Europe. With specific reference to Dutch investors, Melese and Helmsing (2010) describe how they have little direct relationship to domestic farms in the industry and hence little interest in sharing technologies. However, there is joint collective action on non-core activities, notably air and land transportation.

The government's role in helping firms to upgrade has been crucial, particularly in relation to air transport coordination between the exporters and the publicly owned carrier, Ethiopian Airlines (Gebreeyesus and Sonobe, 2011). This is in addition to its provision of land and long-term credit at generous terms. However, some of the essential infrastructure and services (for example cool chain and phytosanitary services) remain underdeveloped and the link between the industry and public research and development (R&D) is weak (*Ibid*).

#### **10.1.4 Public Policy Considerations**

The government has developed a pro-active policy to promote the industry, giving tax and excise duty rebates and allowing full profit repatriation. Although income tax was

yet to be introduced for firms in 2011, the rate (30 percent) is the same as in Kenya (Taylor, 2011). A five-year tax holiday is in place for new firms, accompanied by customs duty exemptions. As shown by Table 50, customs and other import duties comprise a large share of total tax revenue at 45 percent. This share is considerably larger than in the case of Kenya.

There is no explicit policy statement on the creation of joint-ventures. As discussed by Taylor (2011), a signed Memorandum of Understanding between the Dutch and Ethiopian state was relaxed so as to mention Ethiopian companies rather than Ethiopian nationals. This means that so long as firms are registered in Ethiopia they are able to obtain the financial support offered by the Dutch government, as well as through the Development Bank of Ethiopia. However, although the Ethiopian government has made development finance available, under favourable rates, it has not been able adequately to police and enforce its use.

**Table 54: Tax to GDP Indicators**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Customs and other import duties (% of tax revenue)	49.2	50.3	53.8	62.2	61.8	59.9	57.3	46.1	38.7	51.9	45.2
Other taxes (% of revenue)	0.5	0.5	0.4	0.4	0.5	..	..	..	..	..	..
Tax revenue (% of GDP)	8.1	9.7	9.1	9.7	8.7	8.3	7.8	7.8	6.6	8.2	9.2

Source: World Development Indicators, accessed 25 June 2015

Taylor (2011) discusses some examples of firms submitting business plans where proposed costs were higher than actual, hence resulting in a surplus which could be used for other interests. This practice is reported to be just as rife in applications for Dutch funding as in those to the development bank established by the Ethiopians. According to Haddush (2010) the spare capital was then remitted overseas and after a year or two in the industry the firm would declare bankruptcy, leaving the bank to repossess the farm which they could then sell for only a fraction of the amount owed on the loan.<sup>298</sup>

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298 There are other instances of over-invoicing, relating to the repatriation of profits and foreign exchange from overseas.

As discussed by Schaefer and Abebe (2015) government support for the sector became more systematic and aggressive after the adoption of the second five year national plan (Plan for Accelerated and Sustained Development to End Poverty II (PASDEP-II)), covering the years 2005 to 2010; within this, cut flowers were designated as one priority sector eligible for special support and additional incentives, including the ability to borrow from the Development Bank of Ethiopia.<sup>299</sup>

#### *Elements of National Innovation Strategy*

Taylor (2011) mentions how, in order to overcome weaknesses in financial governance capabilities, the Ethiopian state imported experienced personnel from Kenya, including those with a more realistic idea of costs involved in the industry. The weakness of human capital development warned about by Ohno (2009) had become apparent by 2011.

It is noted by Gebreeyesus and Sonobe (2011) that during the initial “seeding” process of the sector, there was an acute shortage of skilled manpower specialised in flower production and marketing in the domestic market. Most early entrant farms hired expatriates, particularly from neighbouring Kenya. The turnover of skilled workers became one of the main channels for the diffusion of knowledge. Poaching of experienced workers increased with the accumulation of some knowledge among the early movers and increased new entry. Hence, the training and turnover of skilled workers has been the main channel of knowledge diffusion in the sector (*Ibid*). However, local research/university linkages for knowledge creation and the translation of tacit forms into more codified form remains underdeveloped.

In view of these shortcomings, a science, technology and innovation (STI) policy was created in 2012 for Ethiopia.<sup>300</sup> This policy builds on the previous economic policy which focused on implementing the Agricultural Development Led Industrialisation (ADLI) strategy. It also features as a key element in the Growth and Transformation Plan (2010/11- 2014/15). Its mission is stated as “To create a technology transfer framework that enables the building of national capabilities in technological learning,

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299 By contrast, the 1998 export promotion strategy had made no mention of the cut flower industry in its listings of all priority sectors considered for promotion (Iizuka and Gebreeyesus, 2012).

300 The Federal Democratic Republic of Ethiopia (2012).

adaptation and utilization through searching, selecting and importing effective foreign technologies in manufacturing and service providing enterprises.”

One sub-element of the policy includes establishing and implementing a coordinated and general governance framework for building STI capacity. The main actors include: National Science, Technology and Innovation Council and the Ministry of Science and Technology. Supporting this structure includes manufacturing and service providing enterprises and “agencies of the national quality infrastructure” such as business associations.

#### ***Role of Business Associations***

The Ethiopian Horticulture Producers and Exporters (EHPEA) was initially established by a small number of investors in the sector. Since then, membership has grown. Overall the sector is better organised in Ethiopia compared to Kenya: Macchiavello and Morjaria (2013) find that almost all Ethiopian firms were members of the horticulture association (only two were not). A question was included in the survey undertaken by Macchiavello and Morjaria (2013) in relation to the usefulness of the horticulture association as regards services provided, such as standards accreditation. The majority of respondents (60.5 percent), rate the services provided, including in relation to standards accreditation, as of moderate to critical value to accessing the cut-flower market.

Since its establishment in July 2007, the Ethiopian Horticulture Development Agency (EHDA) has been the principal government institution charged with supporting flower growers in Ethiopia. The agency was set up to act as a one-stop-shop for government services required by investors. Prior to 2007 the sector was characterized by administrative dispersion, with investors having to deal with a number of different branches of government simultaneously to acquire the necessary licenses and other documents. The EHPEA had been pushing for the creation of a unified government body to serve the sector and eventually this desire was achieved.<sup>301</sup>

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301 Though regulatory functions for the sector remain in the hands of a variety of institutions, each of which is responsible for its own field of authority, e.g. the Ministry of Trade, the Ethiopian Customs and Revenue Authority and the National Bank of Ethiopia.

### ***Political Economy Considerations***

It is generally recognised that the industry's development was underpinned by political buy-in at the very highest levels in Ethiopia. Private sector representatives have benefitted from active intervention by the government in order to remove impediments to expansion within the sector. These interventions were initially regarding land rental agreements. These discussions began in 1997 and since 2001, the sector has enjoyed quarterly meetings the Prime Minister, which over time have become more organised via the EHPEA. However, although the sector has become more developed and organised with elements of a NIS are at play, the effective management of learning rents, could be strengthened.

### ***Domestic Market Sales***

There is virtually no domestic market for roses and other flowers in Ethiopia (Mano and Suzuki 2013).<sup>302</sup> Hence, unlike in the case of Kenya growers have not been encouraged by their representative business association to enter the domestic marketing channel, yet.

#### **10.1.5 Human Resources and Labour Market Policy**

Although Ethiopia's population growth has slowed, its share of working age population continues to grow (Figure 16). As discussed by Taylor (2011: 143) overcoming labour shortages in both the technical and managerial labour categories presented a huge challenge to the sustainability of the sector. In order to overcome some of these challenges the industry employed the following strategies:<sup>303</sup>

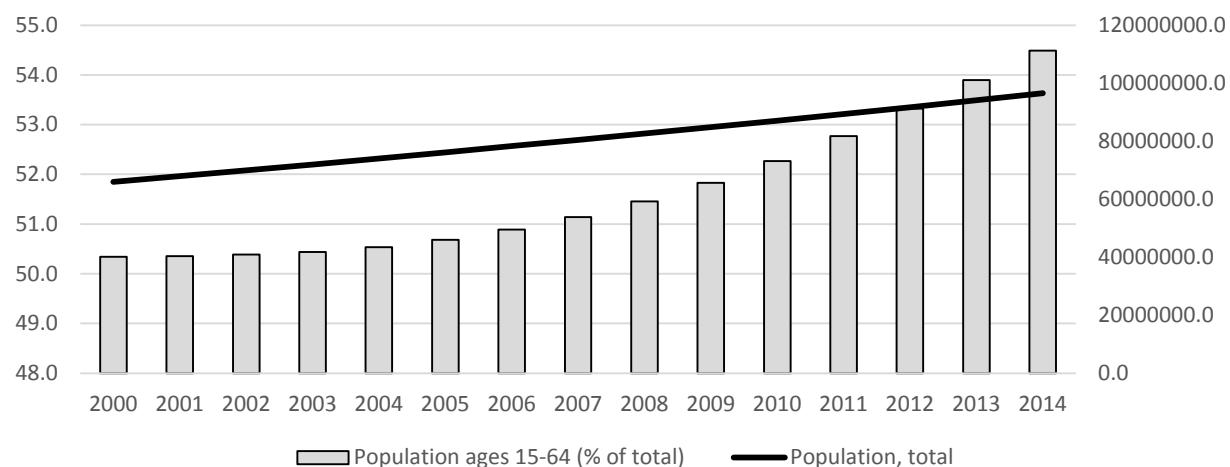
- Advertising for and facilitating the employment of foreign managers and technical staff. These employees were attracted from the floricultural industries in Kenya, Israel and the Netherlands; as part of a government incentive package such employees are exempt from paying income tax, which further assists in the recruitment process
- Drawing on expertise from other multinational production sites; this strategy was employed by firms operating within integrated production networks, mainly Dutch, Indian and Israeli companies

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302 <https://hermes-ir.lib.hit-u.ac.jp/rs/bitstream/10086/25583/1/070econDP13-04.pdf>

303 Adapted from Taylor (2011).

**Figure 16: Total Population and Working Age Population**



Source: World Bank, World Development Indicators, accessed 25 June 2015.

### Vocational Skills and Training

There has been collaboration between Dutch and Ethiopian universities to develop BA and MSc programmes which include internships within floricultural firms. The first graduates have yet to emerge from the programmes and an *ex-post* evaluation is likely to reveal areas for improvement, but several key actors within the industry see the programmes as having the potential to create competent farm managers within five years of graduation, giving graduates the opportunity to progress far more quickly than they would in a mature industry (Taylor, 2011: 148). Formal education indicators, are however, less impressive; they do not yet reflect these efforts and analysis is hampered by a lack of up to date information (Table 55). A major difference between Ethiopia and Kenya, is the substantial difference in the number of vocational pupils in Ethiopia compared to Kenya, and growth in these numbers.

**Table 55: Education Expenditure and Enrolment Indicators**

	2000	2001	2002	2003	2004	2005	2006
School enrollment, primary (% gross)	54.9	60.7	63.8	65.1	68.0	79.2	83.6
School enrollment, primary (% net)	40.3	44.0	46.1	46.8	49.6	60.5	65.3
School enrollment, secondary (% gross)	13.6	16.6	18.8	19.7	22.1	25.0	29.0
School enrollment, secondary (% net)	12.5	13.3	14.8	..	..	..	..
School enrollment, tertiary (% gross)	1.2	1.5	1.7	2.3	2.6	2.8	..
Secondary education, vocational pupils	7738.0	8639.0	38176.0	72162.0	87158.0	106336.0	123557.0

Source: World Bank, World Development Indicators, accessed 25 June 2015

#### 10.1.6 Summary of External Governance

The approach towards integration with the cut-flower GVC in Ethiopia was strategic and although led by FDI, was managed. Hence, a more directive approach was adopted by Ethiopia compared to Kenya. Nevertheless, the specific measures used by the Ethiopian state to incentivise investment in the sector, including the provision of finance, are clearly elements of a facilitative strategy.

Some of the limitations of the latter part of the strategy have been revealed in recent years and reflect limited governance capabilities; this includes inadequate human capital development within the state apparatus to effectively manage and direct these processes towards productive investments, in all cases. Although there are elements of an NIS in place, the effective management of learning rents, remains work in progress. The influence of these external governance structures on internal value chain governance are described in the following sub-sections.

## **10.2 Internal governance**

### **10.2.1 Barriers to Entry**

Firms in Ethiopia were able to emerge and successfully penetrate EU markets at time when the standards, delivery requirements and capabilities demanded from producers are high (Gebreeyesus and Sonobe, 2011). Similar barriers to entry exist for Ethiopia, compared to Kenya, but because capabilities are lower in Ethiopia in terms of tacit knowledge obtained from experience in the sector, were expected to be more challenging to overcome.

In order to achieve these impressive gains, we would expect the process of GVC integration to be very much FDI-led. As has already mentioned, some of the largest firms in operation in Ethiopia had relocated from Kenya, including Sher Ethiopia.<sup>304</sup> Other firms, including a number of subsidiaries or partners of the parent company Agriflora, also had a large influence on the development of the sector and its impressive gains in recent years (Taylor, 2011). Because these firms operate production units across multiple countries, under different ownership structures, a quasi-hierarchical structure of governance may remain more applicable in some cases, and hierarchical structures more relevant in others..

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<sup>304</sup> Sher was the largest producer in Kenya until 2005, when they began the wholesale relocation of operations to Ethiopia (Taylor, 2011).

In terms of barriers to entry at the node of production, with specific reference to smallholder producers, Taylor (2011: 108) finds no evidence of their integration into the floriculture GPN, as the knowledge and capital requirements are simply too high. However, describes a precedent for smallholders being incorporated based on the experience of Kenya, with smaller farms growing low-input open-field summer flowers.<sup>305</sup>

The Dutch auction house route for cut flower sales from Ethiopia is the most prominent marketing channel. This route is posited as being easier to access for new entrants with lower barriers to entry in the form of retailer standards. Ethiopian growers can either choose to become members of the auction – which incurs membership fees and obligations – and qualify for discounted rates, or sell on an occasional basis through the auction and pay higher rates (*Ibid.*). However, because one of the conditions of auction membership is that all produce is sold through the system, penalty fees may be incurred if this condition is violated.

#### **10.2.3 Firm-level Organisation**

There is some variation in estimates of the total number of firms in operation in the sector. For example, Taylor (2011) suggests there were around 80 currently producing flower farms and 68 exporting flower firms in 2009. In comparison, the total number of firms surveyed by Macchiavello and Morjaria (2013) was 86. This number broadly tallies with Taylor's (2011) who also estimates that one third of all growers are Ethiopian, domestic entrepreneurs.

The survey of Ethiopian firms reported in Macchiavello and Morjaria (2013) was undertaken in 2008 (at approximately the same time as the survey carried out in Kenya). Much more information was collected by Macchiavello and Morjaria (2013) for the Ethiopian sample than in the case of the Kenyan survey. This includes information on the area of land under glasshouses. Data was also collected on the total land area of each firm, as well as the total area which is covered by flowers.

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305 Generally it is noted by Taylor (2011) that fruit and vegetables offer greater opportunities for smallholders than cut flowers. Moreover the EHPEA has, with assistance from the CFC, designed a project to integrate smallholders into the network by assisting them in growing vegetables to contribute to the total supply of a large exporter.

Because of data limitations we are only able to make use of the data for 84 firms, which all engaged in export activities.<sup>306</sup> Information is recorded in terms of firms' production of a range of flowers including roses, as well as summer flowers. In relation to firm ownership, questions were asked on legal status and whether or not the firm is a subsidiary of another company. In order to ensure comparability between our analysis of this sample and the Kenyan one, however, we use just two classifications to differentiate firms by their ownership structure: 1 = domestic; 0 = foreign or joint venture.

In order to maintain consistency and ensure comparability with the Kenyan data, the indicator on total land area owned was used, but we also make use of the data on the area covered by greenhouses. Firms were also asked to break down their marketing channels by percentage, including sales to the domestic market, Holland auction, Japan auction, other auction, direct sales, and domestic sales. Only a handful of firms used auction houses outside the Netherlands. None of the firms supplied only the domestic market. Therefore, as in the case of the Kenyan case-study, marketing channels were recoded as direct, auction, or both; when we refer to the auction marketing channel, we mean Dutch auction houses.

#### *Descriptive analysis*

In this section we explore the secondary firm-level data so as to present a static picture across some of the variables of interest. We look at similar indicators to those analysed for Kenya. These include firm age (based on number of years in operation), total owned land, land area covered by flowers, land area covered by greenhouse flowers, total number of employees<sup>307</sup> and total output (stems).

The average age of a firm in Ethiopia is just over eight years (Table 56). This is less than half the age of Kenyan cut-flower firms, analysed in the previous chapter. We can also see that Ethiopian flower firms tend to be much smaller – around 30 hectares, which is almost three times smaller than the average cut-flower firm in Kenya. There is far less variance in firm size in Ethiopia than in Kenya. Looking at the values of skewness and kurtosis across the indicators listed in Table 56, we can see that

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306 One firm was removed because of no data for the number of years it had been in operation and one firm was removed because no information was available on end markets. This means that missing data issues are far less of a concern than in the case of the data analysis undertaken for Kenya.

307 We use data for total number of employees and do not distinguish between full-time and seasonal staff.

generally the values are normally distributed with the exceptions of land covered by flowers and output. Graphing scatterplots for firms by total owned land and number of stems exported, it is clear that there are two firms which are outliers.<sup>308</sup>

**Table 56: Descriptive statistics for Ethiopian firms – overall firm sample**

Indicator	N	Range	Mean	Std. deviation	Kurtosis
Firm age (years)	84	7	8.5	1.4	4.4
Land (hectares)	84	90	29.4	18.8	3.9
Land covered by flowers (hectares)	84	27	11.1	7.2	0.45
Land covered by greenhouses (hectares)	84	30	9.6	7.4	2.5
Employees	84	1247	359.6	229.5	3.3
Output (stems)	84	142,880,000	14,229,504.6	22,140,125.7	20.2

Source: data obtained by Macchiavello and Morjaria (2013).

We then broke down the data by firm ownership and coded firms as domestic if 100 percent domestic owned, and foreign if categorised by Macchiavello and Morjaria (2013) as either a joint venture or foreign. Breaking the sample down in this way presents some interesting results (Table 57). We used an independent sample t-test to explore differences in firm-level characteristics; the Levene's test for equality of variances is above 0.05 for all variables except output (0.026) which means that equal variances cannot be assumed in this case. This is the only result in Table 57 that is significantly different between foreign and domestic ownership.

**Table 57: Firms differentiated by ownership**

Numerical indicator	Dummy ownership (1=foreign)	N	Mean	Std. deviation	t-value
Firm age (years)	0	29	8.7	1.2	1.065
	1	55	8.4	1.5	
Land (hectares)	0	29	29.4	20.1	0.012
	1	55	29.3	18.3	
Land covered by flowers (hectares)	0	29	10.0	6.8	-9.47
	1	55	11.6	7.4	
Land covered by greenhouses (hectares)	0	29	9.8	7.0	0.157
	1	55	9.5	7.6	
Labour (employees)	0	29	326.4	204.4	-0.962
	1	55	377.1	241.6	
Output (stems)	0	29	9,799,239.0	7,827,987.8	-1.750*
	1	55	16,565,462.8	26,562,397.8	

Note: \*\* significant at the 5% level; \*significant at the 10% level.

Source: data obtained by Macchiavello and Morjaria (2013).

We then analysed some additional variables including a proxy for productivity (output/land) and the labour intensity of production (land/labour) as well as skill of

308 This is not necessarily problematic at this stage.

labour (percent of high school graduates). In relation to the skill of labour, the following indicators were collected by Macchiavello and Morjaria (2013):

- Percent of high school graduates;
- Information on marketing officers, including their level of education (high school, vocational/training, college or university); and
- Number of managers and supervisors from Ethiopia.

Only the indicator on the percent of high school graduates is directly comparable with the Kenya sample and hence relevant for the purposes of comparative analysis. The results of these productivity indicators are presented in Table 58. There are no significant difference between firms differentiated by ownership across these variables. However, the percentage of high school graduates employed in the sector by domestic firms (16.2 percent) is substantially higher than Kenya (10.4 percent).<sup>309</sup>

**Table 58: Firms and productivity indicators**

Numerical indicator	Dummy ownership (1=foreign)	N	Mean	Std. deviation	t-value
Productivity (output/land)	0	29	960,002.0	554,273.2	-1.027
	1	55	1,496,388.9	2,774,866.3	
Labour Intensity (labour/land)	0	29	79,409.1	131,158.5	-0.808
	1	55	143,790.2	417,342.9	
% of high school graduates	0	29	16.2	14.2	0.564
	1	55	14.2	14.0	

Note: \*\* significant at the 5% level; \*significant at the 10% level

Source: data obtained by Macchiavello and Morjaria (2013).

The results of this analysis mean that we cannot say that foreign firms tend to be more productive or employ a higher share of skilled workers. We therefore split firms by their marketing channels in order to see if there are any differences between ownership and choice of end market. In order to explore differences in the numerical data differentiated by marketing channel we coded the data as follows:

- Direct to auction: if 100 percent of sales or above.<sup>310</sup>
- Direct to retailer: if 100 percent of sales.

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309 In Kenya, this share is the percentage of workers with more than secondary education.

310 Out of the 84 firms with data, ten had exported to other auctions as well as the Dutch market in 2007 (other, Japan).

- Both, including traders: if less than 100 percent of sales are exported to either auction or retailers, and if traders are used.

We used a chi-squared test to explore the relationship between the ownership of the firm and marketing channel. The results presented in Table 59 suggest a significant association (5 percent level) in the case of firms that export via the direct sales route.

**Table 59: Association between marketing channel and ownership**

Ownership	Marketing channel	Value ( $\chi^2$ )	Significance
Foreign (=1)	Direct	5.2	0.02*
	Auction	0.531	0.47
	Both	2.78	0.95

Note: \* significant at the 5% level.

Source: data obtained by Macchiavello and Morjaria (2013).

There is no association however, between firms' ownership and their choice of the auction house route. This result is to some extent surprising.<sup>311</sup> We then proceeded to explore other firm-level characteristics by marketing channel. As shown in Table 60, on average, firms that export via the direct marketing channel tend to have more land covered by greenhouses. As we have also mentioned, the results for output are not normally distributed, with a couple of firms featuring as outliers. Overall, across the output, productivity and labour intensity measures, firms that export via the auction house route tend to produce less, be less labour intensive and have a lower land/output (productivity) ratio compared to those that supply the direct marketing channel.

**Table 60: Firms Differentiated by Ownership**

Indicator	Marketing channel	N	Mean	Std. deviation
Firm age (years)	Direct auction	36	8.2	1.1
	Direct retailer	28	8.7	1.8
	Both	20	8.8	1.2
Land (hectares)	Direct auction	36	27.7	17.3
	Direct retailer	28	35.0	22.8
	Both	20	24.4	13.4
Land covered by flowers (hectares)	Direct auction	36	8.4	5.3
	Direct retailer	28	12.0	8.3
	Both	20	14.6	7.0
Land covered by greenhouse (hectares)	Direct auction	36	7.3	4.9
	Direct retailer	28	10.4	9.2
	Both	20	12.8	7.1
Labour (employees)	Direct auction	36	273.6	149.3
	Direct retailer	28	416.1	284.4

<sup>311</sup> However, it is similar to the case in Kenya where it was also not possible to identify an association.

	Both	20	435.3	221.9
% high school graduates	Direct auction	36	16.1	14.0
	Direct retailer	28	10.6	14.9
	Both	20	19.3	11.4
Output	Direct auction	36	7,504,788.6	9,698,482.6
	Direct retailer	28	22,047,365.9	34,239,612.7
	Both	20	15,388,987.6	11,176,964.4
Productivity	Direct auction	36	829,445.8	521,423.5
	Direct retailer	28	2,124,368.7	3,776,799.2
	Both	20	1,039,953.7	601,205.2
Labour intensity	Direct auction	36	34,927.8	31,168.1
	Direct retailer	28	247,717.7	569,912.7
	Both	20	100,891.5	151,804.0

Source: data obtained by Macchiavello and Moraria (2013).

It has not been possible to clearly identify tiers of suppliers within Ethiopia engaged with the cut-flower GVC. Nor has it been possible to group firms according to the functions they undertake. Nevertheless, we can see some differences between the firms that supply auction houses compared to the retail sales route. This includes the tendency of larger farms to supply the direct sales route and smaller firms, the auction house route.

Foreign ownership exerts a significant influence on the likelihood that firms export via this channel. This result is suggestive of a hierarchical governance structure in operation. It stands in contrast to the results obtained for Kenya. With reference to the Gereffi et al., (2005) it is an expected result in view of the Ethiopia being a new entrant to the sector, with lower capabilities and tacit knowledge gained through experience of engagement with the sector. It has not been possible to identify the influence of other significant variables on the choice of the auction house marketing channel, which may require different research methods. In the following sub-section we describe what the available evidence suggests in terms of identifiable learning by doing processes.

### 10.3 Levels of Learning by Doing

Micro-level processes are identified using the same quantitative research method as applied in the previous case-study of Kenya. Upgrading processes are then described. Finally, societal wide learning by doing processes induced by GVC integration are described.

#### 10.3.1 Firm-Level Learning by Doing

The results of firm-level analysis undertaken by others in the cut-flower sector have proven the hypothesis that firms mainly engaged in direct sales are likely to produce more varieties, have farms larger in size, be more vertically integrated, and have better human and logistical capabilities (Gebreeyesus and Sonobe, 2011). A major limitation however, particularly relevant within the GVC context is the exclusion of any discussion related to the ownership of firms and subsequent choice of marketing channel. This matters particularly for new entrants such as Ethiopia: because domestic capabilities are low we would expect lead firms to exert a high degree of control on production, including through direct ownership.

Gebreeyesus and Sonobe (2011) do not disentangle whether marked differences in the capabilities between the firms operating through the two marketing channels (direct sales, or those through an intermediary) were present upon entry (coming through FDI) or occurred as a deliberate result of efforts to upgrade (possibly involving local firms). We try to address this shortcoming in the quantitative analysis described below.

#### ***Model specification***

Essentially, we replicate for Ethiopia the analysis undertaken for Kenya in the previous Chapter. The logistic regression model, defined below, was tested across the full sample of 84 firms and the following GVC-related indicators: firm age, ownership, labour intensity, and productivity. We specify  $\gamma$  as a dichotomous outcome variable, coded as = 1 for the marketing channel of interest, and use  $\pi$  to denote the probability that a particular marketing channel is selected.

The probability of an alternative marketing channel being selected is therefore  $(1 - \pi)$  and hence the model is specified as:

$$\begin{aligned} \text{logit } (\pi) = & \alpha + \beta_1 \text{age} + \beta_2 \text{ownership} + \beta_3 \text{labour intensity} \\ & + \beta_4 \text{productivity} + \beta_5 \text{greenhouse} + \varepsilon \end{aligned}$$

In order to address the overarching research questions, sub-research questions and hypotheses have been generated. These specify the GVC-related variables used to answer these questions. Because of the availability of more indicators in the case of

Ethiopia than, say, for Kenya, we have developed additional sub-research questions under Research Question 1.

Research Question 1: What are the identifiable Learning-by-Doing processes, and are these synonymous with the concept of upgrading?

Sub-research Question 1a: How does the age of the firm influence the probability of exporting to one marketing channel rather than another?

- Because the age of a firm is used in the literature as a proxy for accumulated tacit knowledge and experience and is hence a proxy for learning by doing, the null hypothesis is that there are no differences in the significance of this variable across marketing channels.
- The alternative hypothesis is that there are differences in learning-by-doing processes and the influence of firm age and accumulated knowledge and experience across marketing channels.

Sub-research Question 1b: Do more labour-intensive firms tend to export to one marketing channel rather than another?

- The GVC literature emphasises how the direct sales route places greater demands on producers. We use total number of employees/hectare as an indicator of the labour intensity of production.
- The null hypothesis is that there are differences in the labour intensity of firms that export directly to retailers compared to those that export to the auction house.
- The alternative hypothesis is that there are no differences between firms.

Sub-research Question 1c: Do firms with a higher share of skilled workers tend to export to one marketing channel rather than another?

- Because the GVC literature emphasises how exporting to the direct sales route places greater demands on producers, we expect the skill of the labour force to influence the choice of this marketing route more than others.

- The alternative hypothesis is that there are differences in the role of skilled labour influencing the choice of the marketing sales route for firms.
- The null hypothesis is that there are no differences.

Sub-research Question 1d: Do the most productive firms, as proxied by output, tend to export to one marketing channel rather than another?

- If different marketing channels place varying demands on producers and offer different opportunities for upgrading, we would expect differences in the significance of this variable, as a proxy for productivity, across these.
- The alternative hypothesis is that there are no differences.

Sub-research Question 1e: Do firms with more capital tend to export to one marketing channel rather than another?

- We use the proportion of land covered by greenhouses as a proxy for capital investments.
- The alternative hypothesis is that there are differences in terms of the influence this indicator of capital investments has on the subsequent choice of marketing structure.
- The null hypothesis is that there are no differences across marketing channels.

Research Question 2: How are differences in learning by doing processes related to the internal GVC governance structures and contractual relations between firms?

Sub-Research Question 2: Do foreign-owned firms tend to export to one marketing channel rather than another?

- The GVC literature suggests that foreign ownership matters in relation to accessing markets when the capabilities of producers are low. Heightened value chain governance may be required, including a more hierarchical structure.
- The alternative hypothesis is that there are differences in terms of how firm ownership influences the choice of marketing structure.
- The null hypothesis is that there are no differences in how firm ownership influences the choice of one marketing structure compared to another.

## **Results**

The model was first explored through specifying  $\gamma = 1$  if the marketing channel chosen by firms was the direct sales route (with all other marketing channels specified as 0). The results are presented in Table 61.

**Table 61: Results of quantitative analysis: direct sales route**

Predictor	$\beta$	Wald $\chi^2$	P	Odds ratio Exp (B)
Constant	-2.18	1.53	0.22	0.11
Firm age	0.13	0.40	0.53	1.13
Ownership	1.08	3.34	0.07*	2.93
Labour Intensity (output/labour)	0.00	1.93	0.16	1.00
Productivity (output/land)	0.00	2.07	0.15	1.00
Greenhouses (hectares covered)	-0.05	0.96	0.95	0.95
Share of high school graduates (%)	-0.04	2.24	0.97	0.14

Note: \* significant at the 10% level; \*\* significant at the 5% level.

Source: Data obtained from Macchiavello and Morjaria (2013).

The results indicate that only the Wald statistic for firm ownership is significant at the 10 percent level. The interpretation of the odds ratio in this case tells us that foreign firms (coded as 1 and domestic as 0) are almost three times more likely to export via the direct marketing channel compared to the auction house route.

In terms of the goodness-of-fit of the model, the Cox and Snell result of 0.201 indicates that around 20 percent of the variation in the independent variable is caused by the dependent variables; the Nagelkerke R-square result of 0.279 suggests that almost 30 percent of the variation is related. Hence, the model overall provides a relatively good fit. Looking at the proportion of cases classified correctly, as presented in Appendix 5, we can see there are some cases which do not fit the data and which are outliers. Despite this, given the high odds ratio for firm ownership, we do not explore the data further in order to deal with the outliers. Instead based on these results we accept the alternative hypothesis specified in sub-research question 2 that firm ownership influences the choice of marketing structure.

This is an expected result in view of the expectation that producers capabilities are likely to be lower in terms of the tacit knowledge obtained through engagement with the direct sales route, given the limited time the industry has been in operation. This result is therefore expected in view of the Gereffi et al. (2005) framework and particularly in comparison to the results for Kenya, presented in the previous chapter.

However, the insignificance of the other results, including the share of high level graduates, labour intensity, productivity and share of hectares covered by greenhouses also deserves some discussion. We cannot say that firms which are foreign owned are more likely to export via the direct sales route in addition to those with higher shares of high school graduates, labour intensity and capital investments as proxied by the hectares covered by greenhouses.

The results for predators specifying  $\gamma = 1$  if the marketing channel is the auction house are presented in Table 62. In this case we can see, contrary to expectations, that none of the predictor (dependent) variables are significant at the 5 percent or 10 percent level.

**Table 62: Results of quantitative analysis: auction house route**

Predictor	$\beta$	Wald $\chi^2$	P	Odds ratio Exp (B)
Constant	2.61	2.03	0.15	13.61
Firm age	-0.20	0.95	0.33	0.82
Ownership	-0.53	1.03	0.31	0.59
Labour Intensity (output/labour)	0.00	1.30	0.25	1.00
Productivity (output/land)	0.00	0.71	0.40	1.00
Greenhouses (hectares covered)	-0.05	1.24	0.27	0.95
Share of high school graduates (%)	0.01	0.08	0.78	1.01

Source: Data obtained from Macchiavello and Morjaria (2013).

Results for the goodness-of-fit of the model are presented in Appendix 5. The Cox and Snells R-square result suggests that around 15 percent of the variation in the dependent variables is caused by the model. The Nagelkerke R-square value also suggests a somewhat weak relationship between the predictors and the prediction with only 21 percent of variation explained. The casewise list presented in Appendix 5 produces a list of cases that did not fit the data; there are no such cases.<sup>312</sup>

Similar to the results for Kenya, these results suggest other variables beyond those included in this analysis influence the choice of this marketing channel. A different type of capability architecture may be required above and beyond tacit knowledge and experience gained from the sector. Speed to market may matter and hence,

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<sup>312</sup> A classification plot is also presented.

geographical location. Other important variables may include the role of mobile managers. Finally, foreign ownership may not necessarily be a good predictor of the likelihood of exporting to this marketing channel depending on the nature of investment and modalities within country.

Table 63 presents the results when specifying  $\gamma = \text{both}$  marketing channels if firms exported via either the direct sales or the auction house route. We can see that the Wald statistic for our proxy for skilled labour now becomes significant, but this time at the 5 percent level. The interpretation of the odds ratio in this case suggests that firms with a higher share of skilled labour are more likely to export via both marketing channels. This means we must accept the null hypothesis that there are differences across firms in terms of the influence of skilled labour on their subsequent choice of marketing channel.

Firms that have a higher proportion of their land covered by a greenhouse are more likely to export via both channels. The Wald statistic is significant at the 10 percent level. We have used this indicator as a proxy for the capital intensity of production. This result means that we have to accept the alternative hypothesis that there are differences across firms given their capital investments and subsequent choice of marketing structure.

These results are rather intuitive. Firms that supply both marketing channels may have a greater need for skills and capital than other firms because of their need to be able to respond to two different types of buyer; this includes their ability to respond to retailers' demands as well as to consistently supply auction houses. This result also confirms the results from key informant interviews which described increased efforts by domestic entrepreneurs to supply both channels. These efforts have included active collaboration between the CBI – the Dutch business association and the EHPEA in order to train workers. At this point, however, we are unable to explore whether firms that initially began exporting via the direct sales route subsequently diversified towards the auction house route, or vice-versa.

**Table 63: Results of quantitative analysis: both marketing channels**

Predictor	$\beta$	Wald $\chi^2$	P	Odds ratio Exp (B)
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Constant	-2.77	2.23	0.14	0.06
Firm age	0.06	0.10	0.75	1.07
Ownership	-0.75	1.72	0.19	0.47
Labour Intensity (output/labour)	0.00	1.70	0.19	1.00
Productivity (output/land)	0.00	0.28	0.60	1.00
Greenhouses (hectares covered)	0.13	5.83	0.10*	1.13
Share of high school graduates (%)	0.03	2.75	0.02**	1.03

Note: \* significant at the 10% level; \*\* significant at the 5% level.

Source: Data obtained from Ksoll et al. (2009; 2013.)

Although not significant, firms that export via both marketing channels are considerably less likely to have a share of foreign ownership. Though this result is only significant at the 20 percent level, again it is rather intuitive. Overall, the results may be interpreted in terms of an increased likelihood of domestic entrepreneurs and firms moving towards diversification in terms of marketing channels supplied.

In terms of the goodness of fit of this model, the results for the Cox and Snells R-square value is 0.148, the Nagelkerke R-square value is 0.222; this means around 14 percent and 22 percent of the variation in the independent variable is related to the dependent variables. It is therefore important to interpret the strength of these results cautiously since overall the model is not such a great fit. There are also some outlier cases which arise from classification plots. These results are all presented in Appendix 5.

### ***The Value of Alternative Marketing Channels***

The influence of Ethiopia's policy measures on the reporting of export earnings, and hence foreign exchange, is discussed at quite some length by Taylor (2011). Foreign firms are singled out in particular for their repatriation evasion techniques, including the virtual sale and resale of flowers to fictional offshore companies. However, something which is not given adequate attention in the analysis is in relation to concerns over adverse exchange rate movements. Cut-flowers are sold for Euros in the Dutch market.

There may be an incentive to over report export earnings in Birr because of concerns regarding adverse exchange rate movements, and particularly so when trading under the fixed-exchange rate system with a need to remit profits within a limited time period. In order to further explore why firms might choose one marketing channel over another, we looked at the difference between the mean export revenue received

on average for firms, differentiated by their choice of marketing channel. In order to do this, we calculated a unit value (ETB/stem) for the export value of stems sold. The results are presented in Table 64.<sup>313</sup>

**Table 64: Value of Marketing Channels**

Variable	Marketing channel	Mean	t-value	Significance
Export revenue/stems	Auction	2.95	2.49	0.015*
	Direct	1.92	-2.38	0.020*
	Both	2.6	-0.41	0.69

Note: The Levene's test for equality of variances between the marketing channels for the unit value measure is less than 0.05 in all cases, which means that equal variance can be assumed.

\* = significance at the 5 percent level; \*\* = significance at the 10 percent level.

To the best of the authors' knowledge, the only study available which discusses the implications of these potentially perverse financial incentives on the subsequent choice of marketing route by cut-flower producers in Ethiopia, and reported export earnings, is Taylor (2011). Others with knowledge of the sector have also revealed similar concerns during key informant interviews in Ethiopia. Interestingly, no related literature seems to be available in the case of Kenya which operates within a highly liberal trade and investment context, without capital controls.

The points raised by Taylor (2011) with relevance to our analysis can be distilled to a few areas of consideration. Overall, the over reporting of export earnings from the sale of cut-flowers to the auction house marketing channel may arise because of concerns over variable fees in end-markets. The government maintains close monitoring between customs and the central bank (where exchange earnings must be remitted) and controls the sector through issuing export permits; these permits must specify the value of consignments, a percentage of which is then expected to be remitted. Some firms may incur costs if they decide to export via other channels besides the auction house route and hence may factor these more variables costs into the overall value of their consignment.

### 10.3.2 Summary of results

The age of a firm is not significant across any of the marketing channels. Only firm ownership is significant for the direct sales marketing route. This result is intuitive in the sense that, compared to Kenya, the industry in Ethiopia has been established only

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<sup>313</sup> Although we are aware that the output variable of number of stems produced has some outliers which serve to skew the data. Generally the indicator calculated for flowers unit value suffers less from these problems, with a skewness of 0.5 and kurtosis of -1.13.

for around half the length of time. Hence, we would expect producer capabilities to be lower in terms of the tacit knowledge obtained from engagement with the sector. Hence, according to the Gereffi et al. (2005) framework, lead firms therefore exert greater control over production, including through direct ownership.

Foreign-owned firms are considerably less likely to export via both marketing channels; although this result is only significant at the 20 percent level, we can interpret the odds ratio alternatively, in terms of domestic firms being more likely to export via this channel. The auction house route is found to be significantly more valuable in terms of average export revenue received by firms/flower stem, at the 5 percent level. The export revenue received for firms that export via the direct sales route/flower stem can also be seen to be significantly lower than the other marketing channels.

Overall, this suggests that the auction house route is the most profitable option for firms. The results from key informant interviews described this marketing channel as an “easy way to get money.” Exporting to both market channels may be motivated by the need to reduce the risks associated with exporting to one or the other. Alternatively, the finding may be resulted to a broader shift from one marketing channel to another and deserves further attention.

#### **10.4 Learning by Doing Sectoral Level**

Ethiopia is found to have experienced much more impressive economic upgrading than Kenya between 1990 and 2006 – in terms of growth in market share and increase in unit values – in the horticulture sector, of which cut-flowers is a sub-sector, by Bernhardt and Milberg (2011).<sup>314</sup> However, they acknowledge the extreme difficulties in obtaining reliable employment data within the modern agricultural export sector, which applies to Ethiopia and Kenya.

Because of a lack of available information on the horticulture sector they were not able to present the results of social upgrading within the sector in tandem with economic upgrading. In this sub-section, the more conventional GVC upgrading

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<sup>314</sup> Growth in world market share of 656.11 percent and in unit values of 176.28 percent, compared to Kenya's 228.39 percent and 113.44 percent respectively (Bernhardt and Milberg, 2011).

indicators are analysed. This includes in relation to product, process, functional and inter-sectoral upgrading.

### ***Product Upgrading***

As can be seen from Table 65, exports of fresh cut-flowers really took off in Ethiopia after 2003 and since then have risen steadily each year in both value and volume. However, growth in the unit value of cut-flower exports, a key indicator of economic upgrading, seems to be less impressive and rather erratic.

**Table 65: Ethiopian cut-flowers and markets**

Year	Fresh cut-flowers (HS 060310)			Other cut-flowers (HS 060390)		
	Value (US\$ 000)	Volume (Kg 000)	Unit value (US\$/kg)	Value (US\$ 000)	Volume (Kg 000)	Unit value (US\$/kg)
2001	137	1	212.7	8	4	2.3
2002	15	7	2.3	4	3	1.5
2003	305	3	106.1	-	-	
2004	1,907	800	2.4	1	1	0.6
2005	12,082	4,279	2.8	46	16	3.0
2006	25,039	8,632	2.9	98	20	4.9
2007	68,816	17,293	4.0	11	3	4.1
2008	104,733	24,540	4.3	7	1	6.6
2009	131,440	31,559	4.2	78	13	5.9
2010	143,743	37,344	3.8	75	1	74.6
2011	168,945	43,699	3.9	0	0	3.2
Avg. ann. Change	103.8%	204.2%	-33.0%	-24.7%	-27.1%	3.3%
Main markets (accounting for 5% or more of exports)						
2001	UK (100%)		Italy (100%)			
2011	Netherlands (90%)		Saudi Arabia (100%)			

Note: Derived from data from UN COMTRADE database (downloaded 5 June 2013).

Source: Stevens et al. (2013).

Ethiopia's exports of other cut flowers (HS060390) are still modest. There has been a major shift in the destination market for fresh cut-flower (HS060310) exports which are now exported almost exclusively to the Netherlands. Upgrading for fresh cut flowers has taken place mainly in terms of volumes supplied rather than in terms of product upgrading, as proxied by unit values. However, because data are too erratic to draw any conclusions, product specific unit value analyses are presented in Table 66.<sup>315</sup> This more disaggregated unit value analysis suggests a steady to increasing unit value across the flower products included in Table 66. In addition, across all product

<sup>315</sup> This information is presented only for Kenya's major exports of cut flower products and therefore excludes the following products, where market share in the EU is less than 5 percent: HS06031300; HS06031400; HS06031500; HS16031990; HS06031910.

categories, market share has increased rather than decreased. These results stand in stark contrast to those of Kenya, analysed in the previous chapter.

**Table 66: Unit Vale Analysis of Ethiopia's Cut Flower Exports**

HS Cod e	Descrip.	Share of EU Imports		Unit values (€/kg)						
		in 2008 (or 2012)	in 2014	2008	2009	2010	2011	2012	2013	2014
0603 CUT FLOWERS AND FLOWER BUDS OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES, FRESH, DRIED, DYED, BLEACHED, IMPREGNATED OR OTHERWISE PREPARED										
	Extra EU28	100.0%	100.0%	4.0	3.9	4.1	4.1	4.4	3.3	3.4
	Ethiopia	7.4%	15.7%	3.1	3.1	3.3	3.4	3.8	3.1	3.1
06031100 FRESH CUT ROSES AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES										
	Extra EU28	100.0%	100.0%	3.9	3.8	4.1	4.0	4.3	2.9	3.1
	Ethiopia	12.1%	21.7%	3.1	3.1	3.3	3.4	3.8	3.1	3.1
06031200 FRESH CUT CARNATIONS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES										
	Extra EU28	100.0%	100.0%	4.0	3.8	4.1	4.0	4.2	3.6	4.1
	Ethiopia	0.5%	5.4%	3.0	2.9	2.7	2.9	3.4	3.9	3.8
06031500 FRESH CUT LILIES "LILUM SPP." AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES										
	Extra EU28	100.0%	100.0%	Code new in 2012				4.5	5.3	4.8
	Ethiopia	8.2%	8.8%	Code new in 2012				5.0	5.9	6.2
06031980 FRESH CUT FLOWERS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES (EXCL. ROSES, CARNATIONS, ORCHIDS, GLADIOLI, CHRYSANTHEMUMS AND LILIES)										
	Extra EU28	100.0%	100.0%	Code new in 2012				4.7	4.4	4.5
	Ethiopia	4.5%	4.7%	Code new in 2012				3.8	3.9	3.9
06031990 FRESH CUT FLOWERS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES (EXCL. ROSES, CARNATIONS, ORCHIDS, GLADIOLI AND CHRYSANTHEMUMS)										
	Extra EU28	100.0%	n/a	4.0	4.1	4.3	4.3	Code ceased in 2012		
	Ethiopia	2.1%	n/a	3.4	3.3	3.5	3.6	Code ceased in 2012		

Source: Eurostat, COMEXT database, dataset: DS-045409-EU Trade Since 1988 by HS2, 4, 6 and CN8, extracted 17 June 2015

Note; Products with less than 5 percent market share have been excluded from the analysis.

Clearly there are differences in the type of flowers exported from Ethiopia compared to Kenya. For example, Ethiopia is a major export of lilies whilst Kenya is not. Kenya is an exporter of dried, dyed and bleached cut flowers for ornamental purposes, while Ethiopia is not. However, overall, the available evidence does suggest Ethiopia has achieved product upgrading with increases in market shares coupled with an increase

in unit value for most of its main cut flower exports to the EU. Values have increased across all product categories analysed along with market shares (Table 67).

**Table 67: Export Value and Market Share**

HS Code	Descrip.	Value (million Euros)		Share of EU M from Extra-EU	
		2008	2014	in 2008 (or 2012)	in 2014
0603 CUT FLOWERS AND FLOWER BUDS OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES, FRESH, DRIED, DYED, BLEACHED, IMPREGNATED OR OTHERWISE PREPARED					
	Extra EU28	913.1	1,053.4	100.0%	100.0%
	Ethiopia	67.5	165.1	7.4%	15.7%
06031100 FRESH CUT ROSES AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES					
	Extra EU28	512.5	692.4	100.0%	100.0%
	Ethiopia	62.1	150.5	12.1%	21.7%
06031200 FRESH CUT CARNATIONS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES					
	Extra EU28	126.2	116.5	100.0%	100.0%
	Ethiopia	0.7	6.3	0.5%	5.4%
06031500 FRESH CUT LILIES "LILIUM SPP." AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES					
	Extra EU28	Code new in 2012	3.0	100.0%	100.0%
	Ethiopia	Code new in 2012	0.3	8.2%	8.8%
06031980 FRESH CUT FLOWERS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES (EXCL. ROSES, CARNATIONS, ORCHIDS, GLADIOLI, CHRYSANTHEMUMS AND LILIES)					
	Extra EU28	Code new in 2012	170.8	100.0%	100.0%
	Ethiopia	Code new in 2012	8.0	4.5%	4.7%
06031990 FRESH CUT FLOWERS AND BUDS, OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES (EXCL. ROSES, CARNATIONS, ORCHIDS, GLADIOLI AND CHRYSANTHEMUMS)					
	Extra EU28	201.7		100.0%	n/a
	Ethiopia	4.3		2.1%	n/a

Source: Eurostat, COMEXT database, dataset: DS-045409-EU Trade Since 1988 by HS2, 4, 6 and CN8, extracted 17 June 2015

Note; Products with less than 5 percent market share have been excluded from the analysis.

### **Process Upgrading**

Most firms in the cut-flower sector were found by Taylor (2011) to be paying at least the recommended minimum wage required in the industrial sector (there is no legal minimum wage). The recommended minimum industrial wage in Ethiopia equates to approximately US\$0.75 per day for a shift of up to 12 hours dependent on workload. The employment categories identified by Taylor (2011) are broadly similar to those described for Kenyan firms. These include the manual labour tasks of harvesting, cutting, and packaging. It is noted that whilst the wage for manual labour is evidently low, it represents a significant increase in household income for many rural families.

Of total employment in the sector, which is estimated to be in the region of 50,000 people, around 80 percent is estimated to be female (Splinter et al., 2011).<sup>316</sup>

Wages in the sector are reported to have increased rather dramatically, which may be related to the need to attract labour into the sector. For example, with reference to Sher, entry level positions are reported to have paid ETB 7/worker/day (~US\$0.8) when the firm began operations in 2005. These are now at over ETB22/day (~US\$1.3), significantly above the average for the industry and the country, having increased by 20% annually in recent years compared with only 8 percent in the public sector (Taylor, 2011: 148). Since Ethiopia has abundant supply of unskilled labour at Birr 20-30 (US\$1.17- 1.76) per day. The salaries of fresh university graduates normally range from Birr 496-1768 (US\$88-104) per month.

### ***Skills Development***

The inequality of wages between manual and more skilled positions in the sector is not mentioned by Taylor (2011) despite the predominant role of imported skilled labour. This may simply be because of the short history of the industry. It may also be because active steps are being taken to ensure movement of labour into more skilled positions. Despite this rather optimistic outlook, there is recognition that formal training programmes will be unable to address the different levels of network embeddedness amongst Ethiopian and foreign growers.

Reference is made by Taylor (2011) to a study undertaken by Morris (2006) which identified two groups of flower producers in Ethiopia: those owned by foreigners with experience in the industry and those owned by Ethiopians, who are new to the industry. The conclusion derived from these structures and tiers of firms apparent, is that information flows between the two groups of producers is insufficient. Moreover, that it would be naive to think that, in a competitive market, growers would simply give information and ‘trade secrets’ away. Because of this, movement of managers (if they can incentivised to do so) can help to address information deficits.

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316 The land rights system in Ethiopia is singled out as being particularly problematic and potentially stifling to employment growth in the sector, because families which are perceived not to be using land allocated to them may thus lose this land. This means families and the surplus labour that exists within the household can be reluctant to take up formal employment opportunities elsewhere. Women are more likely to be able to take up the opportunities for formal employment in cut-flower firms for these reasons

Given this, similar barriers to entry, including the tacit and intangible nature of knowledge within the sector regarding marketing channels, are emphasised by Taylor (2011) for Ethiopia, as we have already described in the case of Kenya. Hence, although it is possible to identify process upgrading in terms of volumes supplied it is more challenging to identify commensurate skills upgrading. Overall therefore, process upgrading beyond increasing volumes, seems to be rather more limited.

### ***Functional Upgrading***

The available evidence suggests limited movement into processed cut flower exports in terms of production towards processing and marketing. This is because of the movement of firms from Kenya which specialise precisely in these functions. However, although it has not been possible to demonstrate causality and movement from the auction house route towards the direct sales route, or vice-versa, the fact that there is a group of firms which tend to specialise in the production of cut flowers for both marketing channels is suggestive of multi-chain upgrading. It has not however, been possible to describe the ownership structures of these firms.

### ***Inter-sectoral Upgrading***

Sectoral plans to encourage export diversification include direct government support including economic incentives, capacity building, cluster development, and direct public investment. These include 100 per cent exemption from the payment of duties on import of all investment capital goods and raw materials necessary for the production of export goods, and tax holidays on profit for five years. Credit made available for investors in the cut flower sector – one priority sector – has also been made available to investors in other priority sectors. One sector selected because of its backward linkages includes the leather sector (Grebreeyesus, 2014). Textiles and clothing in addition to the construction and cement sectors also feature. Finally, diversification into fruit and vegetables from cut flowers is mentioned as future objective.

The available evidence suggests these efforts have paid off for example, as described by Grebreeyesus (2014) the US\$40.3 million export value of textile and garment by the end of the PASDEP period (2010) was four-fold in comparison to the base year (2004/05). Another example is demonstrated by the following: Huajian, a Chinese shoemaker that has gone from employing 600 locals to 3,500 in a few years

(Economist, 2015). Despite these impressive statistics, however, it has not been possible to identify Ethiopian lead firms driving these processes, which deserves further attention.

## **10.5 Societal Learning by Doing**

Elements of a NIS have been identified and these were enacted upon GVC integration. The results from key informant interviews, suggest strong interactions between the CBI – Dutch industry association for cut flowers and the EPHEA. However, there are also some weaknesses apparent within the strategy. For example, as discussed by Gebreeyesus and Iizuka (2010) so far, there are no links with the national agricultural research organization (EARO).

### **10.5.1 Elements of National Innovation System**

There are aspects of a learning rent management system in place with the provision of finance to enable the entrance of actors into the sector. However, shortcomings in the approach have also been described. These aspects have also been noted by others. For example, as discussed by Gebreeyesus (2014) generous incentives and support programmes to build the private sector capacity has been introduced along with public-private consultation forums.

However, these have not always been disciplined. Where measures have been introduced to ‘discipline’ the ‘rouge’ private sector, they have resulted in tensions and uncertainty and concerns that the state has begun to patronise the private sector instead of encouraging competition and innovation. There are concerns that public investment expansion is increasingly dwarfing the private sector, for example in relation to credit and foreign exchange availability (Gebreeyesus, 2014).

## **10.6 Conclusions**

This chapter has described how Ethiopia has integrated with the cut-flower GVC and engaged with the lead firms that drive it. It positioned the role of the state as directive rather than facilitative, although there are certainly elements of the latter strategy. The strategy of integration has been FDI-led and governance capabilities have at times struggled to keep pace with the management of this process.

Although it is not possible to clearly identify tiers of suppliers in Ethiopia (as it was in Kenya), it is clear that a few large producers exist in terms of land area (and one of these was a lead firm which relocated from Kenya, with multiple operations across countries). The limited development of more medium-sized firms may be reflective of the relatively short period during which the industry has been in operation. Although the influence of foreign ownership exerts a significant influence on the likelihood that a firm exports via the direct sales route, given the identity of firms involved in the sector the governance typology most applicable would seem to be hierarchical and quasi-hierarchical, depending on the tiers analysed.

Following this logic and given the history of integration of the cut-flower GVC in Ethiopia, we expect the age of a firm – which serves as a proxy for learning by doing and tacit knowledge accumulated, as well as other reputation effects – to matter less than foreign ownership. We expect foreign ownership to exert a major influence on the ability to export via the direct sales route, because of low supplier capabilities in the face of relatively complex transactions, according to the Gereffi et al. (2005) framework. However, although firm age may serve as a proxy for tacit knowledge we have described a higher level of formal education levels for workers in the sector compared to Kenya. Moreover, whilst product and process upgrading has been identified for Ethiopia, this has not been the case in Kenya, where there is evidence of downgrading.

Although functional upgrading processes within the sector have been described as limited as well as challenging to identify, in comparison, inter-sectoral upgrading processes have been so far impressive and deserve further attention. Although elements of a NIS are present and there are attempts to institutionalise the knowledge gained from experience in the sector, including at the tertiary level, it remains work in progress.

## **10.7 Comparison of Kenya and Ethiopia**

Ethiopia has been inserted into the cut-flower GVC through a strong FDI-led process, with a specific focus on the supply of cut-flowers to Dutch auction houses. It has exhibited an impressive performance to date in relation to the volume of cut-flowers

exported. The case-study analysis of Kenya and Ethiopia suggests there is evidence of a type of East African 'flying geese' in action as investors move to the lower cost producer of Ethiopia, backed by strong state support.

Given some of the identified upgrading processes for Kenya in terms moving towards being a full package supplier - we would expect firms to employ a higher share of skilled workers. However, based on the available evidence it appears firms in Ethiopia employ a higher share of skilled workers (higher than secondary education) than firms in Kenya. These result suggests not only did Ethiopia need to attract FDI into the sector, it had to also ensure the supply of educated workers so as to engage with the GVC at a time when technical requirements were considered by industry representatives to be high.

Of course, this proxy only captures the role of formal education in the sector, not the tacit information obtained from repeated transactions. However, in the case of Kenya, results suggest an inability to align internal and external value chain governance, and translate the tacit knowledge obtained in the sector into more codified and public forms, over time. Challenges in terms of sustaining product and process upgrading are clearly becoming apparent.

### ***Main Results***

In relation to firm-level learning by doing processes, firm age exerts a significant influence on the likelihood that Kenyan firms supply the direct sales route to retailers. This suggests acquired capabilities, tacit knowledge and experience becomes necessary in order to access this marketing channel, in the absence of a more hands-on role by buyers (including through direct ownership). In the comparator case-study, Ethiopia, it is found that firm ownership exerts a significant influence on the likelihood a firm supplies the direct sales route. In view of the fact that Ethiopia is a new entrant into the sector, this is an expected result; it has also been corroborated through key informant interviews.

The challenge comes in referring to the Gereffi et al. (2005) framework and producer capabilities. There are important differences in the share of skilled workers employed in the sector between the two countries. In terms of meso-level processes, the main

difference apparent between the two comparator countries seems to be in relation to the processes of institutionalising knowledge obtained from engagement with the sector. Strong product and process upgrading has been identified for Ethiopia in addition to impressive inter-sectoral upgrading. In Kenya, whilst there is some evidence of functional upgrading, the available evidence on inter-sectoral upgrading as well as product and process upgrading is less convincing. The results from the country comparisons are summarised in Table 68.

**Table 68: Main Findings – Kenya and Ethiopia**

	Indicators	Kenya	Ethiopia
External Governance	Past and present trade and investment policies, aspects of industrial policy and elements of national innovation systems	Facilitative	Directive, though some elements of facilitative
Internal Governance	Firm-level organisation, ownership structures and descriptive analysis of relations with buyers in end markets	Relational; Quasi-hierarchical	Hierarchical and quasi—hierarchical
<b>Firm-level:</b> Accumulated knowledge and experience; assimilation of technologies	Domestic firm age	No of years in operation exerts a significant influence on likelihood of exporting to direct sales route	Foreign ownership exerts significant influence on likelihood of exporting to direct sales route
	Firm productivity, output/capital and output/labour ratios	N/A	N/A
<b>Sectoral:</b> Movement towards higher value (and skilled) activities	Product upgrading: increase in unit values and market share	Downgrading	Upgrading
	Process upgrading: improving the efficiency of production and unit costs	Volumes have increased	Volumes have increased
	Employees skill level, years of education, vocational training	Limited evidence	Workers higher skilled
	Employees years of experience, movement of labourers towards higher skilled positions; remuneration	Limited evidence	Limited evidence
	Functional upgrading: Movement into a higher value-added activity, including sales on the domestic market	Evidence for direct sales route (bouquets)  Limited sales on the domestic	Limited evidence

		market	
	Inter-sectoral upgrading	Limited evidence	Impressive
<b>Societal:</b> Tacit knowledge made non-tacit and explicit	Degree of social embeddedness of firms and interface with national innovation systems	Strong degree of social embeddedness; interface with NIS beginning	Strong degree of social embeddedness; interface with NIS at point of GVC entry
	Role of intermediate institutions in obtaining and tacit information regarding production and marketing	Strong lobbying role of KFC and HCDA, weak interface	Strong role of EHPEA and EHDA
	Process of institutionalising tacit knowledge obtained	Interface with formal institutions beginning	Linkages with tertiary education providers however, challenges arising

The sub-research questions are answered as follows:

How do learning by doing processes differ countries?

- Micro: firm age exerts a significant influence that firms select the direct sales route in Kenya. In comparison firm ownership influences the likelihood the direct sales route is selected for Ethiopian firms.
- Meso: In Kenya there is some evidence of functional upgrading, the available evidence on inter-sectoral upgrading as well as product and process upgrading is less convincing. Strong product and process upgrading has been identified for Ethiopia in addition to impressive inter-sectoral upgrading.
- Macro: Societal wide learning by doing processes have been constrained in the case of Kenya in view of an inability to effectively implement a NIS. Ethiopia's integration was underpinned by elements of an NIS but more recent challenges have emerged.

How are these differences related to the internal governance between firms and nature of contractual relations?

- A more hierarchical structure of governance has been identified for Ethiopia.
- A more quasi-hierarchical and potentially relational structure exists for Kenya.

How are these differences related to external governance structures and public policy considerations?

- A more facilitative approach is apparent in Kenya.
- A more directive approach in Ethiopia.

## 11 Conclusions

### 11.1 Introduction

This thesis set out to explore what the ascendency of GVCs implies for new trade/new growth theory and contemporary understandings of learning by doing processes. The conceptualisation of learning by doing developed by Nelson and Pack (1999), an extension to Arrow (1962), was used as the basis for this analysis. Within this model two types of learning by doing, related to the accumulation of capital and assimilation of new technologies, must work together. As a result, the learning by doing process ascribed proceeds in a vertical way: moving from lower to higher value activities. However, while challenging some of the assumptions underpinning neoclassical growth theory, the Nelson and Pack (1999) model assumes automatic and non-rivalrous knowledge spillovers and does not distinguish between types. Hence, the process of learning by doing process is left ambiguous.

In comparison, the classification of GVC governance developed by Gereffi et al. (2005) is based on the extent to which dimensions of technology can be codified, made explicit, as well as controlled by the lead firms which drive GVCs. The GVC governance typology developed by Gereffi et al. (2005) has therefore been used as an organising concept in order to explore the implications of the ascendency of GVCs for contemporary learning by doing processes. Through comparative GVC analyses, this thesis has made more explicit the causal chain of relations and mechanisms which enable types, and levels, of learning by doing to occur.

The overarching research hypothesis is that new trade/ new growth models such as Nelson and Pack (1999) are contingent on the governance structures which surround trade. This hypothesis is based on the rejection of automatic knowledge spillovers assumed within neoclassical growth theory, with the premise being their rivalrous nature. In view of this starting point, the literature review demonstrated how the role of external governance and its subsequent influence on the internal relationships between firms conceptualised within the GVC literature has been underplayed to date.

The application of the mixed research methodology devised, which included a structured approach to country case-study analysis, demonstrated how differences in external governance structures have exerted a direct influence on the process of GVC integration and internal governance structures between firms; these in turn have influenced the types and levels of learning by doing processes apparent and as a consequence, upgrading trajectories.

More directive approaches towards governing GVCs, including managing the interaction between internal structures between firms (internal governance) and external structures negotiated by governments for the private sector in view of public policy considerations, has been shown to be a necessary prerequisite in order to achieve the learning by doing process ascribed in Nelson and Pack (1999). Actively changing GVC governance has been shown to be necessary to effectively stimulate types and levels of learning by doing and subsequently upgrading processes, in view of the rivalrous nature of knowledge spillovers and different types, tacit and codified forms.

In conclusion, the results from each Chapter are summarised. The theoretical and policy implications which arise from the research findings are discussed. Finally, this thesis concludes with discussion as to possible future avenues of research.

## **11.2 Summary of Empirical Findings**

Further to the introduction of this thesis in Chapter 1, the research problem was defined in Chapter 2 related to the relevance of new trade/new growth theory for late industrialisers, and ability to achieve learning by doing, in view of challenges in engaging with the modern export sector. In Chapter 3, the GVC literature was introduced and the concept of value chain governance and upgrading explained. Although operating in different sectors, the logic of the comparative analysis undertaken between the two sets of GVC case-studies in Asia (textiles and clothing) and Africa (cut-flowers) was argued to be a valid one. This is because both are conventionally understood to trade within similarly buyer-driven GVCs.

In Chapter 4 the research methodology used to explore the influence of external GVC governance structures on internal governance structures, and subsequently learning by doing and upgrading processes, was introduced. The concepts to be explored and the choice of indicators to explore these was explained and the mixed research methodology described. Each empirical Chapter was preceded by an overview Chapter which described the global organisation of each respective GVC and the relative position of each of the country case-studies within this overarching structure.

### **11.2.1 Textiles and Clothing**

Chapter 6 introduced the Cambodia case-study. In view of its integration process with the textiles and clothing GVC, the role of the state was classified as facilitative in terms of external value chain governance. Internal value chain governance was described through firm-level analysis as exhibiting both hierarchical and quasi-hierarchical structures, through remained buyer-driven. Some of the methodological challenges associated with the identification of learning by doing at the firm-level were discussed; a quantitative research method was applied to analyse the influence of indicators associated with learning by doing between firms operating across two periods of time. No significant differences were found.

The evidence presented demonstrated how the facilitative approach towards GVC integration has resulted in a limited ability to influence internal GVC governance structures and hence generate and sustain learning by doing processes in line with the trajectory envisaged by Nelson and Pack (1999). These findings run contrary to those anticipated in view of the automaticity of knowledge spillovers as alluded to in new trade/ new growth theory. They result from narrow task specialisation within the CMT node of production, with an absence of effective coordination mechanisms and more directive external governance structures.

Bangladesh, was introduced as the comparator case-study to Cambodia in Chapter 7. The role of the state was positioned as more directive than facilitative. The role of intermediate institutions and the enactment of elements of a NIS upon entry into the GVC were described. Because of data limitations, it was not possible to apply a quantitative research method to explore micro-level processes of learning by doing. In addition to this methodological challenge, the Bangladesh case-study also served to highlight the importance of differentiating between firm ownership, functions undertaken and marketing channels. These lessons were heeded in the cut-flower case-studies which followed.

The evidence presented in the Bangladesh case-study suggests certain learning by doing and subsequently upgrading processes were achieved because of a more directive approach adopted towards GVC integration. This more directive approach enabled tacit knowledge spillovers, including close interaction between lead firms and suppliers, to occur. Because of the increase in producers' capabilities which resulted from this knowledge acquisition, supported by a more directive approach by the State, internal value chain governances were changed so as to reduce reliance on intermediaries.

The end result includes direct links with buyers; in turn, this process has enabled functional upgrading processes to occur including movement from a CMT producer to an FOB supplier. The important role of domestic producers and traders' means Bangladesh now serves multiple value chains, including the domestic market (through a process of strategic recoupling by formerly export-oriented firms). The effective management of learning rents to enable these processes was critical at the time of

GVC integration; the strategy entailed elements of a NIS. The more directive approach adopted, in view of the rivalrous nature of knowledge spillovers, and resultant learning by doing and upgrading processes identified run contrary to those apparent in the case of Cambodia, and by consequence to those envisaged by Nelson and Pack (1999).

### **11.2.2 Cut Flowers**

Analysis of integration with the cut-flower GVC in Kenya was introduced in Chapter 9. In this case, the role of the state was classified as more facilitative than directive. However, the initial seeding process of the direct-retail supply chain in Kenya is not a straightforward story of FDI-led integration. Instead it is one with a history deeply rooted within Kenya's political economy. The qualitative assessment of changes in internal value chain governance, at least for the direct sales route is suggestive of relational types of governance in operation, in addition to quasi-hierarchical structures, depending on the firm-level tier of analysis.

The application of the quantitative research method devised found that firm age, which typically serves as a proxy for learning by doing and accumulated knowledge and experience within the new trade literature, exerts a significant influence on the likelihood that firms' export via the direct sales route. This result suggestive a more relational type of governance may be in operation between some tiers of tiers. However, no significant results were found for the influence of any of the other learning by doing indicators. Older firms are more likely to specialise in the direct sales route. No significant results were found for the influence of any of the selected learning by doing indicators (including firm age) for firms that export via the auction house route, a surprising result.

The available evidence suggests a change in internal value chain governance, which has been driven less by aspects relating to external governance but rather results from internal consolidation processes between firms. Outcomes in terms of an improvement in producers' capabilities are less obvious. The evidence presented in this chapter shows how the facilitative rather than directive approach to GVC integration has resulted in a limited ability to influence internal GVC governance structures and hence generate and sustain learning by doing processes in line with the

trajectory envisaged by Nelson and Pack (1999). The results are suggestive of an inability to align internal and external value chain governance, and translate tacit knowledge obtained in the sector into more explicit forms and therefore public knowledge stock, over time.

Ethiopia, the comparator case-study to Kenya, was introduced in Chapter 10. In this case, the role of the state was classified as more directive than facilitative. The management of investment within the sector included negotiation with lead firms investing and relocating in Ethiopia including from Kenya, to ensure inclusion of domestic firms within the sector. However, some elements of facilitative approach were apparent, given that new entrants in the sector received state financial assistance. Internal value chain governance was described as being characterised by hierarchical and quasi-hierarchical forms, depending on the tier of analysis.

Applying the same quantitative research method as in the case of Kenya, it is found that foreign ownership (not age) exerts a significant influence on the likelihood that firms export via the direct sales route. This result is expected using the Gereffi et al. (2005) governance typology, given that Ethiopia is a new entrant to the cut-flower sector compared to Kenya. The result confirms the classification of a hierarchical structure of governance in operation for firms that supply the direct sales route to retailers.

However, we acknowledged the need to delve deeper into firm-level ownership structures in view of the range of investors and actors involved in the sector; this includes those acting as intermediaries within country. No other indicators associated with the achievement with learning by doing were found to exert a significant influence on this marketing channel. In comparison, firms with a higher share of skilled workers are more likely to supply both marketing channels rather than specialise in one or the other. Similar to the case of Kenya, it was not possible to identify any significant influence of the other learning by doing indicators on the likelihood that Ethiopian firms export via the auction house route.

Contrary to expectations, based on secondary firm-level data, the skill of workers employed in firms supplying the cut-flower GVC the sector is higher in Ethiopia than

Kenya. This suggests FDI was utilised with a relatively high skilled labour force by Ethiopia in order to access this value chain, rather than FDI being used as a substitute for lower producer capabilities. There is evidence to suggest elements of a NIS were enacted upon GVC entry, a major difference to Kenya. The evidence demonstrates how the more directive approach adopted by Ethiopia has influenced the level and type of learning by doing induced by engagement with the cut flower GVC, and subsequently upgrading processes.

### 11.3 Summary of Results

The results obtained from each set of the country case-studies are summarised in Table 69 overleaf. This approach to summarising the results of comparative GVC studies and analysis of upgrading processes is similar to that of Ponte et al. (2014). However, external value chain governance structures are summarised first, then internal. Because the starting point of this thesis was that all country case-studies trade within buyer-driven GVCs, typically characterised by hierarchical or quasi-hierarchical structures of GVC governance, the research methods have sought to either confirm or reject this proposition.

**Table 69: Evidence on Learning by Doing**

	Indicators	Cambodia	Bangladesh	Kenya	Ethiopia
External Governance	Past and present trade and investment policies	Facilitative	Directive	Facilitative	Directive, though some elements of facilitative
Internal Governance	Firm-level organisation, analysis of relations with buyers in end markets	Quasi-hierarchical; Hierarchical	Relational; Quasi-hierarchical	Relational; Quasi-hierarchical	Hierarchical; Quasi-hierarchical
<b>Firm-level:</b> Accumulated knowledge and experience; assimilation of technologies	Domestic firm age	No significant influence on LBD indicators	N/A	Exerts a significant influence on likelihood of exporting to direct sales route	Foreign ownership (not age) exerts significant influence on likelihood of exporting to direct sales route
	Firm productivity, output/capital and output/labour ratios	Increase in value added, number of workers and labour productivity over time	N/A	N/A	N/A
	Product upgrading: increase in unit values and market share	Decline in UVs apparent	Overall increase (woven products)	Decline	Increase
	Process upgrading:	Increased	Increased	Volumes have	Volumes have

<b>Sectoral:</b> Movement towards higher value (and skilled) activities	improving the efficiency of production and unit costs	employment; Increase in TFP; limited capital investments over time	employment; evidence of capital investments	increased	increased
	Increasing employees skill level, years of education, vocational training	Weak evidence of skill premium; limited vocational training	Limited; skills shortages apparent	Limited evidence	Limited evidence, though increase in vocational training
	Employees years of experience, movement of labourers towards higher skilled positions; remuneration	Limited; wage increases driven by political motivations	Limited; wage increases driven by political motivations	Limited evidence	Limited evidence; recruitment of foreign professionals
	Functional upgrading: Movement into a higher value-added activity, including sales on the domestic market	Not apparent	Movement towards 2 <sup>nd</sup> tier FOB supplier; Sales on domestic market	Evidence for direct sales route (bouquets); limited evidence of sales on domestic market	Limited evidence; no sales on domestic market
	Inter-sectoral upgrading	Limited	Large domestic conglomerates	Limited evidence	Impressive, though drivers unclear
<b>Societal:</b> Tacit knowledge made explicit	Degree of social embeddedness of firms and interface with national innovation systems	Weak; reduced shares of domestic firms	Strong; domestic ownership	Interface with NIS beginning	Strong degree of social embeddedness; interface with NIS enacted on GVC entry
	Role of intermediate institutions in obtaining and tacit information (e.g. regarding production and marketing)	GMAC no link to learning rents	BGMA crucial role with regards to managing learning rents	Strong role of KFC and HCDA; private sector driven	Strong role of EHPEA and EHDA
	Process of institutionalising tacit knowledge obtained and conversion into explicit forms	Beginning	Requires public investments	Interface with formal institutions beginning	Linkages with tertiary education providers however, challenges arising

The identification of alternative structures of GVC governance, such as relational governance, would require different research methods. Each indicator of learning by doing has been selected to identify the process and then to measure it, to the extent possible, using both quantitative and qualitative assessments. The results from the sets of case-studies clearly demonstrate a varied experience. However, there are some commonalities, which are related to the management of the GVC integration process, and influence of external governance on internal structures between firms. Each of the sub-research questions are addressed sequentially in the sub-sections below.

### 11.3.1 What are the identifiable learning by doing processes?

Functional upgrading is most similar to the type of learning by doing process envisaged by Nelson and Pack (1999). In order to achieve this, however, both tacit and explicit knowledge spillovers must be actualised. Hence an interface between

micro and macro level learning by doing process – private and public processes – must be operationalised.

Firm age is typically used within the literature to refer to the accumulation of knowledge and experience. However, use of this indicator suffers from a certain degree of automaticity assumed. Even if tacit knowledge is obtained from the process of exporting and engaging with lead firms, outcomes require translation and an interface with elements of a NIS in order to become institutionalised through the conversion of tacit knowledge into explicit and codified forms.

Therefore in order to identify learning by doing processes and distinguish between types, analysis began at the firm level in order to identify changes in firm-level capabilities and indicators typically associated with learning by doing, such as firm age. The precise mechanism through which types of knowledge spillover occur, were subsequently described. Tacit and codified or explicit forms were described, as mediated through value chain governance structures and interactions between firms (domestic and foreign) and agents within these.

In the case of Kenya, although firm age and length of time of operations may have served as a vehicle through which to accumulate tacit knowledge and experience for some firms, so as to enable functional upgrading, weaknesses in view of the absence of institutional links and elements of a NIS were identified. These shortcomings were described as constraining knowledge spillovers, including those operating within and between sectors. Active conversion of tacit knowledge obtained through engagement with actors and lead firms in the GVC is required so as to contribute to broader upgrading processes, including the upskilling of labour over time.

It has been most challenging to identify any learning by doing in the case of Cambodia, except perhaps societal processes further to the beginnings of the enactment of a NIS. Important changes in the policy framework induced at the highest political levels suggest a process of learning from mistakes. This may relate to realisation that Cambodian producers have been excluded rather than included from the textiles and clothing GVC overtime.

Although there is evidence of a wage premium paid, this relates more to political economy considerations rather than in response to an increase in demand for skills. These findings run contrary to those anticipated in view of the automaticity of knowledge spillovers in view of engagement with the modern export sector. If Nelson and Pack (1999) were correct, the origin of the entrepreneurs involved in seeding the modern export sector is a moot point. In practice, it is clear the degree of social embeddedness of firms, in view of their ownership structures and in relation to the accumulation and assimilation of new technologies, matters.

Though the firm-level evidence is more limited, Bangladesh has achieved a form of functional upgrading. The more directive approach adopted by the State at the time of the GVC integration process recognised the need to obtain tacit knowledge through close interaction between employees employed engaged with the sector. Therefore a proactive learning rent management system was operationalised, with elements of a NIS apparent, in order to convert and institutionalise tacit knowledge obtained through the process of engagement with lead firms; the important role of business associations – intermediate institutions - was described.

In contrast, If Nelson and Pack (199) were correct, domestic firms would automatically benefit through engagement with the modern export sector, e.g. through the cost reductions which would result, including from knowledge spillovers socialised. In practice, the more directive approach adopted by the State in Bangladesh, in view of developmental objectives, used the quota management system as a means through which to advance learning rents and support domestic entrepreneurs and their inclusion within the value chain over time. This approach effectively changed value chain governance structures between firms. This process stands in contrast to the more facilitative approach adopted by Cambodia, which assumed knowledge spillovers, but which has led to the exclusion rather than inclusion of domestic producers within the sector over time.

Proactive steps were taken by the Ethiopian state working with intermediate institutions and business associations in order to recruit highly skilled professionals with experience in the cut flower sector; therefore incentivising and enabling the transfer of accumulated tacit knowledge and experience within the sector. This

process involved industry representatives and was enacted with a strong institutional interface, including in relation to the provision of vocational skills and training. Support for domestic entrepreneurs within the sector included the development of turn-key operations and provision of finance. Effectively internal value chain governance structures were mediated and matched with a highly skilled labour force and absorptive capacity.

It was not been possible to find any significant influence of firm-level characteristics on firms that export via the auction house route for the cut-flower GVC in either Kenya or Ethiopia. This aspect of research deserves further attention. It may be suggestive of differences in the role of tacit and non-tacit knowledge within the sector, and interaction with producers' capabilities. These are all aspects omitted from the Nelson and Pack (1999) model which assumes automatic knowledge spillovers and does not distinguish between types nor their actualisation process.

### **11.3.2 How these related to internal GVC governance structures and contractual relations between firms?**

No influence on the internal value chain governance structures between firms is apparent in the case of Cambodia, except the exclusion rather than inclusion of domestic producers over time. In comparison, upon GVC entry internal value chain governance structures were influenced by the Bangladeshi state, working with the domestic private sector. This process avoided complete reliance on intermediaries within the sector; the careful management of learning rents within the sector enabled both tacit and non-tacit knowledge spillovers to occur. The subsequent increase in producers' capabilities enabled the development of more relational types of governance, and movement of producers from basic CMT producers towards FOB-2 suppliers, with direct links with buyers. The effective management of learning rents to enable these processes was critical at the time of GVC integration.

In comparison, internal value chain governance structures have changed in the case of Kenya, though without a direct influence on behalf of the state. Instead, this process has occurred as a result of firm-level consolidation processes; this includes the incorporation of domestic firms into foreign firms' production networks. Although internal value chain governance structures have changed towards a more relational

type for some tiers of firms, it remains challenging to demonstrate a clear increase in producer capabilities in line with the Gereffi et al. (2005) framework. It also remains challenging to clearly identify an increase in the skill and wage levels of employees in line with Nelson and Pack (1999).

Utilising preferential market access conferred in addition to investment incentives, GVC entry was pursued in the case of Ethiopia through attracting firms seeking to relocate for cost considerations. However, the management of investment within the sector included negotiation with lead firms investing and relocating in Ethiopia including from Kenya within a view to including domestic firms within the sector. Hence producers were incorporated within the GVC though not necessarily through ownership, but through the facilitation of turn-key operations.

### **11.3.3 How are these related to external governance structures determined by governments?**

The absence of effective external governance, notably the alignment of trade and investment policy so as to achieve specific development objectives and stimulate of types and levels of learning by doing is clearest in the case of Cambodia. In comparison, the presence is most obvious in the case of Bangladesh, in view of the alignment of trade and investment policy in order to achieve developmental objectives.

Certain learning by doing and subsequently upgrading processes were achieved because of a more directive approach adopted towards GVC integration. This more directive approach enabled tacit knowledge spillovers, including close interaction between lead firms and suppliers, to occur. Because of the increase in producers' capabilities which resulted from this knowledge acquisition, supported by a more directive approach by the State and strong role of intermediate institutions, internal value chain governances were changed so as to reduce reliance on intermediaries. Hence, elements of an NIS were present upon GVC entry and to some extent aligned with trade and investment policy.

Rather than FDI being used as a substitute for low producer capabilities, in Ethiopia the evidence suggests producer capabilities were high in terms of formal education

levels. There is evidence to suggest elements of a NIS were enacted upon GVC entry, a major difference to Kenya. The more directive approach adopted by Ethiopia has influenced the level and type of learning by doing induced by engagement with the cut flower GVC, and subsequently upgrading processes.

Although operating in different sectors, the more recent comparison between Kenya and Bangladesh is insightful in the sense that for both countries there is a failure to advance broader societal learning by doing. These results are suggestive of an inability to effectively align internal and external value chain governance, as domestic firms are incorporated within networks of global tiers of suppliers.

## **11.4 Theoretical Implications**

The main theoretical implications which arise from the empirical results relate to GVC theory and the interface between internal and external value chain governance structures: the interaction between firms and the broader institutional interface determined by governments, in view of public policy considerations. In relation to new trade new growth theory, the theoretical implications which arise are in view of the more rivalrous nature of knowledge spillovers and types of knowledge (tacit and codified). Together, these results have implications for theorising contemporary of learning by doing processes in the context of the ascendency of GVCs.

### **11.4.1 Internal GVC Governance**

The GVC governance typology developed by Gereffi et al. (2005) was derived from case-study analyses, using an inductive approach. The case-studies used at that time to derive their governance typologies include the sectors analysed in this thesis. A mixed research methodology was devised in this thesis so as to integrate firm-level analysis into the analytical framework and reveal tiers of suppliers within each set of the GVC case-studies; these are incorporated into a broader network of global suppliers, specialising in different particular functions.

The identification of tiers of suppliers complicates the ability to classify overall value chain governance, compared to that which exists between firms operating at different levels. This poses a challenge to the use of the conceptual framework developed by

Gereffi et al. (2005). Although this framework moved beyond a binary view of how global production is organised (arms-length or within transnational firms through FDI) it has not been adapted to take account of the subsequent evolution of tiers of suppliers which exhibit particular forms of governance, but may be encompassed within an overarching structure.

The implicit assumption in the Gereffi et al. (2005) governance framework of value chain governance structures changing as producers capabilities develop has been questioned. In practice, this process is likely to be fraught with tensions. The development of producers' capabilities has been challenging to identify in almost all of the case-studies. Internal value chain governance may change from hierarchical towards more relational type, however, without necessarily an improvement in producers' capabilities, as posited by Gereffi et al. (2015).

The interaction between different types of knowledge, including codified forms, with producers' capabilities is somewhat problematic with reference to the Gereffi et al. (2005) framework. For example, both hierarchical and relational governance structures are characterised by a high complexity of transactions, with a low ability to codify transactions. Within relational structures, producers' capabilities are high in view of tacit knowledge acquisition whilst within the hierarchical structure the opposite is supposed. However, whose capabilities improve in the supply base (or firm) and how in relation to the acquisition of both tacit and codified forms of knowledge acquisition is an aspect which requires further elaboration.

#### **11.4.2 External GVC Governance**

External governance has been described in this thesis as related to the broader institutional framework within which GVCs operate. It encompasses trade and investment policy and the presence or absence of elements of a NIS as a mediating factor in terms of facilitating knowledge spillovers. In relation to trade and investment policy, two opposite sides of a continuum were described, ranging from facilitative (positive functional) to directive (positive selective).<sup>317</sup> Facilitative policies correspond to the role of the State as ascribed in the post-Washington consensus; in comparison, more directive policies were described as more developmental. The latter

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317 With reference to Lall (1997).

approach as opposed to assuming knowledge spillovers recognises their more rivalrous nature and the need for more proactive measures to stimulate as well actualise and socialise these processes.

Even if an explicit policy is absent, elements of a NIS were described for each case-study in terms of the set of institutions which facilitate technological chance and help to diffuse innovations. The NIS therefore serves as an interface between internal and external value chain governance and facilitates interactions between private and public agents, as to enable certain types of upgrading processes, related to the achievement of broader societal learning by doing processes, including through sectoral spillovers. This includes the conversion of tacit knowledge into more codified forms. Consideration of any change in GVC governance structures in view of improvements in producers' capabilities must therefore integrate these aspects of external governance.

Changes in the nature of inter- and intra-firm relations across borders has implications for inducing and sustaining conventional learning by doing and upgrading processes, not all aspects of which have been fully developed in this thesis. This includes the distinction between tacit and non-tacit forms of knowledge; the specific transmission mechanisms within GVCs as influenced by governance structures; and finally, the subsequent contribution to the development of producers capabilities at the firm level and distinguishing between agents (e.g. employees, managers) within the firm.

#### **11.4.3 New trade/new growth theory**

Only functional upgrading encapsulates movement across nodes of production, which is most similar to the learning by doing process envisaged by Nelson and Pack (1999). This upgrading process was defined as movement from control over one node of production to another high value node. As this term is derived from case-study and sectoral analysis, it accepted that different sectors may experience some variances. The key point to note though, is that the upgrading trajectory is a vertical one from lower to higher value-added activities.

The ability of indigenous firms to achieve this trajectory, without being incorporated within tiers and networks of global suppliers, has been documented most notably in

the Kenyan case-study. Conventional learning by doing processes were underpinned by a model of not being constrained by the domestic market and the quest for economies of scale and scope, so as to drive the innovation process. The effects of these endeavours and the ascendancy of global tiers of firms' means that contemporary learning by doing processes for late industrialisers, must adapt to the internal value chain governance structures described in this thesis.

Distinguishing between different types and levels of learning by doing, in view of the distinction between tacit and codified forms of knowledge spillovers and the specific governance structures which can release as well as impede these flows has implications for conventional new trade/new growth theory. The ascendancy of trade in tasks demands a need to move beyond the ambiguity of learning by doing and conventional indicators such as firm age. New trade/ new growth models must therefore be supplemented by information on the modalities through which producers have engaged with the modern export sector and incorporation of both internal and external value chain governance.

## **11.5 Policy Implications**

The main policy implications which arise from the analysis relate to the need to understand value chain governance and potential leverage points. The need to effectively govern value chains through more directive approaches has been demonstrated in view of the rivalrous nature of knowledge spillovers. However, there are some major challenges in terms of doing so within the current fragmented global trade, investment and finance regime.

### **Infant Industries**

On the one hand, the implications of the ascendancy of GVCs are described as making the process of export orientated growth easier as countries, and firms, can specialise in a single task rather than compete to supply a final product. This discourse posits that within the context of GVCs the costs of infant industry protection are even higher than in the past. This is precisely because of the degree of fragmentation of global production which has taken place.

Alternatively, in view of the depth and breadth of GVCs others argue that the need for industrial policy is actually heightened within the current context. This is because new

estimates on the degree of intra-firm trade and shares of global trade coordinated by Trans-National Corporations (TNCs) translate into more hierarchical and quasi-hierarchical governance structures driven by Foreign Direct Investment (FDI) and other non-equity modes according to the GVC governance typology (Gereffi et al., 2005; UNCTAD, 2013).

Invariably the international knowledge spillovers associated with trade in tasks (as opposed to trade in final products) will be more limited. In turn, this may limit the potential for domestic and sectoral knowledge spillovers. This is even without taking into account the nature of how such trade takes place, including between integrated companies not necessarily united through the same ownership structure; nor, the specific form of the knowledge spillover (tacit or non-tacit) and the actualisation process.

Multi-chain upgrading processes, in addition to strategic recoupling with the domestic market has been described as some of the specific forms through which the advancement of learning and upgrading processes are being pursued by domestic firms and indigenous entrepreneurs within the current context. This includes the inability to functionally upgrade in line with the Nelson and Pack (1999) trajectory, given barriers to entry as well as declining shares of value added. The multi-chain upgrading approach could be pursued strategically in view of the emergence of tiers of global suppliers, specialising in particular functions serving multiple markets. However, major implications arise for conventional policy measures in support of infant industries in view of resultant industrialisation trajectories.

### **Governance**

The opportunities for tacit knowledge flows, which require close interaction, and the opportunities for translating into non-tacit forms are becoming seemingly more limited within the current global trading landscape. In such a context governance capabilities including in relation to inducing domestic firms engagement with GVCs are obviously heightened. In addition to trade and investment policy considerations, the rationale for competition policy is heightened.

More fundamentally, however, there is a need to more explicitly define what type of knowledge spillover may occur through engagement with particular types of GVCs. Then, the specific leverage points and scope to influence so as to achieve specific developmental outcomes, including increasing domestic producers' capabilities. This entails understanding the specific technologies, organisational form and precise interactions with human capital formation processes which might best realise desirable spillovers in view of developmental objectives.

In this context, the role of intermediate institutions such as business association assume a particular importance. The identification of types and levels of learning by doing in turn requires an understanding of the institutional ties and incentive mechanisms, embodied within elements of an NIS, which can bind these together so to produce sectoral and societal wide learning outcomes. It also requires a good understanding of potential political economy constraints.

### **Public Policy Considerations**

The financing of learning processes has become more challenging. Systems including the quota management which enabled effective learning rent management systems to be established in the Asian NICs and some of the case-studies analysed in this thesis are no longer viable or possible within the current global trading landscape and international architecture.

All governments are struggling with regards to taxation issues, including transfer pricing issues and base profit shifting. The challenges in terms of aligning internal and external value chain governance structures in view of these processes, have been described in each of the country case-studies (though could be made much more explicit and this is an avenue for future research). These challenges have to be considered within a global context and a highly fragmented regulatory context, with essentially no globally agreed rules on finance and investment.

### **11.6 Methodological Considerations**

It has not been possible to consistently apply the same research methodology across all of the case-studies analysed in this thesis. This means that not all of the thesis objectives have been met. This includes the comparison of learning by doing processes between the two sectors analysed in this paper. These are not as complete as

anticipated in view of data limitations, particularly given the absence of detailed firm-level data which clearly distinguishes between marketing structures. Despite these limitations, the original contributions of this thesis are both theoretical as well as empirical.

A mixed research methodology has been devised to demonstrate how external governance influences internal value chain governance so as to enable levels and types of learning by doing to occur, and subsequently upgrading processes. The empirical findings build on the existing knowledge base regarding GVC participation and to the extent possible, analyse types and levels of learning by doing, and subsequently upgrading processes, in a systematic way.

### **Incomplete Research Methods**

We have only been able to paint a static picture of what the most recent firm-level evidence suggests and in the most detail for the cut-flower sectors for Kenya and Ethiopia (and for which there are less available recent GVC studies). A comparison with the performance of the sector and firms within it, over time, would strengthen the analysis.

The important role of managers within the cut-flower sector, as in that of the other sectors including garments in Bangladesh, to some extent reduces the explanatory power of firm age as a proxy for learning by doing and accumulated knowledge and experience. This is because firms may change ownership but retain the same staff and managers. Although we have been unable to control for these effects, tensions between the firm-level literature on reputation effects compared to the technological capabilities literature, which continues to use firm-age as a proxy for learning by doing, have been discussed. More detailed firm-level analysis could help to address some of these challenges.

Although an attempt was made to survey buyers in the textiles and clothing and cut flower sectors, response rates were extremely limited and it was not possible to collect this information in a systematic way. The complications in terms of differentiating between firm ownership structures were described in each of the case-studies. More

detailed firm and company information is required in order to delve deeper into these structures and how they have evolved over time.

It has been difficult to identify the significance of learning by doing variables influencing the likelihood that forms export via the auction house route. This suggests that alternative research methods are necessary, the application of which are beyond the scope of this analysis. These results are also suggestive of the need to devise a research methodology that distinguishes between tacit and non-tacit knowledge flows between tiers or stages of production and their productive actualisation in view of producers' capabilities and organisation. This is an important research endeavour in view of the ascendency of GVCs, trade in tasks and emergence of tiers of suppliers specialising in narrow functions.

### **Comparable Research Methods**

The use of case-study analysis typically results in a more limited ability to compare results in a completely replicable way. However, data limitations have meant the same quantitative research methods have only been applied in the case of the cut-flower case-studies. The results for the cut-flower case-studies are therefore the most complete overall. Analysis in the textiles and clothing sector has been limited. This means the conclusions and ability to compare results between sectors are rather more limited than hoped.

## **11.7 Avenues for Further Research**

Avenues for further research include deepening the methodological approach as well as extending the research framework. Some of the more immediate next steps which could be pursued are summarised below.

### **11.7.1 Developing the Methodological Approach**

For Kenya and Ethiopia it has not been possible to control for reputation effects. For example, we have only been able to analyse information on formal employment levels of workers and not, for example, on the length of managers' experience with the firm, and nationality. Generally, the results in all cases could be improved and strengthened

through the use of more detailed panel data for firms. This includes in terms of information on wage and employment levels for firms' over time.

It has not been possible to provide information on the relative profitability of all marketing channels in all cases, or the incentives to move from one marketing channel to another. This is an area that deserves further attention, particularly regarding causality: whether domestic firms move from the supply of auctions towards the direct sales route, in the case of the cut-flower case-studies.

The importance of differentiating between firms and their respective marketing channels has been highlighted in the case of Cambodia and Bangladesh. An alternative research method which relies both on more detailed firm level and company specific information could therefore be used so as to make this distinction and enable the same research method to be applied as in the cut-flower GVC case-studies.

### **11.7.2 Expanding the Research Framework**

Given that firm ownership exerts a significant influence of supplying one marketing channel compared to another, further analysis on how profits remitted through this type of intra-firm trade deserves attention. This requires extremely detailed information at the firm level and then overtime; it includes tracking changes in firm ownership structures across sectors as well as borders. Policy-related discussion on external governance could be extended to include these aspects. These aspects include more detailed analyses of corporate taxation rates, taxation agreements between countries (which may be included within FTAs) and careful analysis of existing bilateral investment treaties, and their utilisation.

More detailed information on the regulatory and policy environment could be insightful and could generally extend the analytical framework developed. This includes in relation to public policy aspects such as taxation and government expenditure; education and vocational training; and the conversion of tacit knowledge into explicit forms through a more detailed qualitative assessment of NIS and political economy considerations.

Just as there is evidence of Kenyan investors active in Ethiopia, so too is there evidence of Bangladeshi investors in Cambodia. However, it has not been possible to confirm these trends and they deserve further attention. Researching these trends would require lead firm surveys. Although an attempt to survey buyers within the sector was undertaken, a more comprehensive survey of buyers operating across different levels and tiers of the value chain could be insightful.

Generally, aspects related to horizontal spillovers and inter-sectoral upgrading have not been explored in detail and deserve further attention. The research approach has identified elements of an NIS with reference to the specific sectors of interest, but has not considered the broader framework within which these objectives are situated. The identification of a NIS has relied upon a qualitative assessment, though more detailed analysis regarding the precise mechanisms of the interface between formal and intermediate institutions, in view of the process of translating tacit knowledge into non-tacit forms, would be insightful.

Although the causal mechanisms between external governance and internal, notably firm-level organisation and structure have been described it has not been possible to elaborate upon saving and investment patterns at any level: micro or macro. This is an important research gap in view of the implications for new growth theory.

### **Concluding Remarks**

The learning by doing process envisaged by Nelson and Pack (1999) – firms, and workers, progressively moving towards higher-value-added activities with higher wages – was developed in the absence of GVC considerations. There is an implicit assumption within the Nelson and Pack (1999) model of almost automatic movement up the value chain, with a facilitative approach by the state supporting this process. In practice, this movement may be fraught with tensions in view of the more rivalrous nature of knowledge spillovers, as recognised by the GVC literature within the concept of value chain governance.

The results from the sets of case-studies presented in this thesis suggests that far from resulting from automatic knowledge spillovers as in the neoclassical world, the specific structures which help to both release and reward the learning by doing

process require active stimulation as well as negotiation. Changing internal value chain governance may be a necessary prerequisite to stimulating particular types of learning by doing and subsequently upgrading processes.

The opportunities for doing so, at least within certain sectors and markets in view of certain actors are increasingly constrained for late industrializers. The new trade-new growth nexus for late industrialisers is therefore one in which engagement which GVCs requires heightened governance capabilities, in order to negotiate and actively stimulate specific types and levels of learning by doing processes, not all of which are easily accessible for actors operating within and across borders.

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## **Appendix 1: Field Work in Cambodia**

### **1.1 Questions to guide semi-structured firm-level interviews**

#### **1. Product Information**

- Product characteristics
- What garments are produced and exported? HS/SITC code
- What markets are goods produced for and which multinational/ local company?

## **2. Firm Characteristics**

- Type of company: FOB; CMT or sub-contract?
- Firm ownership, contractual relations
- Position in the global value chain
- Production costs: materials, utilities, labour cost, profit margin, non-official administrative cost, official administrative cost

## **3. Labour Characteristics**

- Labour and workforce development related policies
- Managers/ management issues?
- Capacity issues and constraints?
- Wages across skill levels of staff
- Labour productivity
- Incentive structure for labours (overtime payments, incentive payments, out-put dependent.
- Payment for piece rates, or fixed salary?

## **4. Competitiveness Concerns**

- Strategy to adapt to removal of safeguards on Chinese exports, and since Vietnam's entry into the WTO
- Investment plans; capital and labour; hard investments; soft investments?
- Strategy to increase productivity or to reduce costs?

## 1.2 Firms Interviewed

	<b>Manager Interviewed</b>	<b>Location</b>	<b>Length of time of operation</b>	<b>Ownership &amp; type of business</b>	<b>Size (number of employees)</b>	<b>Product</b>	<b>Market</b>	<b>Output/ Production costs</b>	<b>Productivity/ value added</b>
1	English	Phnom Penh (city)	12	HK F.O.B.	2,400 (600 when first opened; moved laundry business in 2006 previously employed 1,700) 2 unions Staff turnover p.a. 3%	Bottoms, denim	95% US, 5% EU, Canada	Pays minimum wage (+ living cost increase, over-time). (500 riel per hour)  Costs of import/export 6.5% FOB value	40% lower than China, 15% lower than Vietnam
2	Cambodian	Phnom Penh (city)	11	Singapore F.O.B.	875 (400 in 1997) 1 union (FTU – opposition party) Staff turnover p.a. 10-15%	Ladies wearing apparel	85-90% US, 10-15% EU (Netherlands)	200,000 – 300,000 pieces per month (output per worker)  Pays minimum wage CMT price \$0.35-40	-
3	Cambodian	Phnom Penh airport (cluster)	2	Singapore/German	1,200 (600 in 2006, 900 in 2007) 4 unions	Women sportswear	60% US, 40% EU	60,000 pieces per month  Minimum wage + \$8 attendance incentive; wages range from 1,500; 2,500; 3,500;	Needs to increase

								7,000 riels per month	
4	Bangladesh	Phnom Penh (cluster)	8	Bangladeshi	2,700 1 union in the factory	Cargo pants (Old Navy, GAP)	100% USA	Everything is more expensive in Cambodia compared to Bangladesh, but lead times are less.	5% lower productivity than Bangladesh, 5% quality less; 10% lower than Madagascar; 10% lower than Mauritius
5	Chinese	Phnom Penh Industrial Park	10	Chinese	700 2 unions in the factory	Women blouse	90% US, 10% Canada	6,000 pieces per day  Minimum wage +\$2 per day for over-time (1,500 riel for all other factories)  Everything is more expensive in Cambodia except labour	Low productivity

## **1.3 Questions to guide semi-structured interviews with Government Officials**

### **Trade Policy**

- Trade Act 2005 securing market access for LDCs in the US: how much is at stake for Cambodia?
- How much of a threat do you consider exports from China?
- Has the effect of Vietnam's entry into the WTO been felt yet?
- Besides labour standards are any other initiatives being taken to ensure Cambodia competes on other aspects of quality such as protection of the environment and intellectual property?
- What other aspects of trade policy are you currently lobbying for?
- (Rules of origin?)
- Rules of origin and 51% utilisation in EU market. The products certified by certificate of origin form A can access EU markets duty-free.
- Don't the European Union's rules of origin already enable textiles to be used from within the ASEAN region? (regional fabric or EU fabric); How will the ASEAN customs union change this?
- 'Buyers nomination': explain?
- How will ASEAN customs union help reduce costs of imports?
- Plans for market diversification?

### **Industrial development**

- Information sought: Number of garment registered firms and ownership (by firm size).
- Visible exports; how much of a problem is smuggling? Is this a problem for imports too?
- What are current export visa and fees?
- Define relevant HS/SITC codes.
- Information sought: All trade data by HS2-6 and to which market. Country level analysis: all HS codes. UN Comtrade reports only 2004.

### **Labour and Vocational Skills**

- Information sought: labour statistics; strikes and number of days lost.
- How can business better establish the link between costs of compliance and the benefits of compliance to labour standards?
- What work does the government do with unions to try to address this?
- Will the threat of revoking licences be used as an incentive in the future? What about other incentives? (designed to increase the skill of labour so as to enable the ability to move into more higher value added products and improve time to market).
- Employment generation policies.
- Information on labour training: vocational and higher education programmes.

### **Investment**

- What is the policy?
- New investment flows; types and over time; historical flows.
- FDI rules/ targeting of sectors?

## **1.4 Government Officials Interviewed**

<b>Ministries/ Ministers</b>	<b>Information required</b>
Dr Cham Prasidh, Minister and negotiator, Ministry of Commerce: Trade Facilitation and Working Group on Export Processing and Trade Facilitation Customs and excise dept.	Statistics Trade policy: Internal and External Industrial policy
Senior Minister, H.E. Keat Chhon, Ministry of Economy and Finance  Non-tax revenue department Economic analysis and forecasting depart Investment and Coop depart Economic Integration and ASEAN depart Financial Industry depart	Investment policy Macro/ monetary policy Fiscal policy ASEAN trade policy
Ministry of Planning: National Institute of Statistics (NIS); General Directorate of planning (GDP)	GDP: Sector Programmes (Swaps, PBAs, PPR); Industrial policy; Human Development Report NIS: Growth (GDP); Labour force survey; Industrial establishment survey; is there any more up to date information than 2000?
Huy Han Song, Undersecretary of State, Ministry of Labour and Vocational Training	Enrolment/ completion rates Vocational training (skills, standards, health and safety) Relative wages paid to those working in the T&C industry; terms and conditions; reasons for strikes and number of days lost Profile of labour force: age, skills, gender Labour laws Skills development
Ma Vanny, Ministry of Womens Affairs, Director of Ministry of Labour and Vocational Training	Gender issues in employment; reproductive economy
Ministry of Education Youth and Sport	Enrolment/ completion rates Curriculum development/ business needs/ human development policy
Ministry of Industry Mine and Energy	Industrial policy Energy policy Investment and tax policy: ownership Performance of utilities (costs and coverage)

## **Appendix 2: Field Work in Kenya**

### **2.1 Summary of field work undertaken in Kenya – Sept/Oct 2012**

This brief summarises the activities carried out between the three weeks of 19<sup>th</sup> Sept – 9<sup>th</sup> Oct in Kenya. The workplan was divided into three phases, as follows:

#### **Phase One – Shockwatch Week One**

ODI is currently managing a number of country case studies on which will feed into a ‘Shockwatch’ bulletin to be produced for DfID, this includes in Kenya. The purpose of the visit to Kenya, which is funded under this program of works will be first to meet with the author of the country report in addition to other relevant stakeholders, at the University of Nairobi, government ministries and research institutes to: a) discuss the results of the analysis; b) incorporate into the final report discussion on governance capabilities related to the concept of resilience (exposure and vulnerability). The opportunity will then be utilised to liaise with Kenyan research institutes and think-tanks to both publicise the results of the forthcoming study and obtain further feedback on the results of the study.

#### **Phase Two – AfT GVCs and Food Security - Week Two**

ODI is currently undertaking a number of studies on AfT. As the sole author for the study on AfT GVCs and Food Security, the opportunity to travel to Kenya under the shockwatch program (Phase One) also provides the means to engage with relevant stakeholders in the horticultural sector. The research questions that the paper seeks to answer include the following: How has AfT been used to assist developing countries tap into high value GVCs and global production networks?; Has it been successful in achieving its objectives?; What are the relative merits of this approach compared to other / traditional types of aid?; and, How could the potential benefits of the above approach be enhanced, and disadvantages be mitigated?

The stakeholders to be interviewed include private sector representatives, relevant government ministries in addition to donors. For this research I will draw on the assistance of the agriculture futures network based in Nairobi (recommendation obtained from Dr Steve Wiggins, ODI). The objective of the research is to understand how the horticultural GVC operates within Kenya, the constraints that it faces and how AfT has been used to overcome these. Based on the outcomes from key-informant interviews, the effectiveness of these interventions will be qualitatively assessed and incorporated into the final report.

#### **Phase Three –Firm-level interviews - Week Three**

This Phase of work will build on the results of Phase Two, the objective being to understand how the horticultural GVC functions in Kenya and the constraints it faces, and undertake a set of firm-level key informant interviews (with managers) in addition to focus-group interviews with employees. This part of the assignment relates to ongoing PhD research.

## 2.2 Stakeholders to be interviewed

### Government

Organisation
Ministry of Agriculture
Ministry of Trade/Finance
Ministry of Education
Ministry of State and Planning
Population Council
Kenya Industrial Research and Development Institute (KIRDI)
Export Promotion Council (EPC)
Kenya Agricultural Research Institute
Other Universities/Researchers

### Private sector representatives/ Other NGOs/ Research Institutes

Organisation
University of Nairobi, Economics Department
IDS, University of Nairobi
KIPPRA
Fresh Produce Exporters Association of Kenya (FPEAK)
Kenya National Federation of Agricultural producers (KENFAP)
Kenya Flower Council
Small Scale Farmers Association of Kenya
Agricultural Finance Corporation
Export Promotion Council
Futures Agriculture

### Stakeholders Interviewed

Else Kangai, CABE  
 Leonard Oduiri, CABE  
 Prof Francis Mwega, Uni of Nairobi  
 Prof Peter Kimuyu, Uni of Nairobi  
 Radha, IDS Uni of Nairobi  
 David Ongolu – Dutch Embassy  
 Isayaah Maana, Monetary Policy Committee, Nairobi, Kenya.  
 Prof Eric Aguila, KIPPRA  
 Jane Ngigi – KFC  
 Ministry of Agriculture – Local office, Lake Naivasha  
 Clive Muluku – Monetary Policy Committee, Nairobi, Kenya.  
 John Rada – World Bank (editor of *Economic Update*)  
 Rod Evans – formerly of *HomeGrown* vegetable producer/exporters

## 2.3 Firm-Level Interviews

Firm-level interviews to be undertaken with broadly representative firms across the node of production, differentiated in terms of:

- ownership structures (foreign/domestic);

- type of production undertaken (own-estate exporter/producer, own-estate producer, outgrowers, smallholders);
- size (no. of employees and initial capital investments); and
- end market, e.g. direct to UK supermarkets, or Dutch auction houses.

Within the firms/farms we would like to interview, to the extent possible:

- General Manager - who liaises with buyers (exporter, supermarkets or auction houses) and understands contractual relations etc.
- Production Manager – who manages production and understands the demands of contractual obligations, e.g. quality, nature of production, e.g organisation of production and processes etc.
- HR Manager – who deals with employment relations, training etc.
- Workers - on farm or in pack-house (preferably both, depending on the firm interviewed).

## **Employees**

Objective to organise a focus group with employees (in firms differentiated by ownership or contractual relations with buyers).

### **2.3.1           Information Sought from Firms**

<b>General Manager</b>	<p><b>General characteristics of the firm:</b> Age, size (no. of employees), capital investment, land area, membership of private sector organisations etc., functions., changes overtime</p> <p><b>Ownership structure of the firm:</b> Domestic/foreign, joint venture?</p> <p><b>Contractual relations:</b> with buyers and end-market type (supermarket/Dutch auction house), quality/price demands/ just-in-time.</p> <p><b>Provision of inputs:</b> technology (seeds, capital, training – type, who), finance.</p> <p><b>Outputs:</b> total production (volume and value), margin/profit, relative returns, unit cost/value.</p> <p><b>Upgrading processes over time:</b> different functional position obtained within the VC (more functions?) quality improvements?</p> <p><b>Barriers to upgrading processes – internal to the GVC:</b> product/process/functional/inter-sectoral, e.g. Lack of training, investment by lead firms.</p> <p><b>Main policy barriers to upgrading – external to the GVC:</b> e.g. lack of extension services, poor infrastructure, limited links to education provision?</p>
<b>Production Manager</b>	<p><b>General characteristics of production:</b> how is production organised, major processes and their management.</p> <p><b>Capital investments:</b> technology (e.g. irrigation, post-harvest technology), division of labour/capital across stages of production.</p> <p><b>Upgrading processes over time:</b> different functional position obtained within the VC (more functions?) quality improvements?</p> <p><b>Barriers to upgrading processes – internal to the GVC:</b> product/process/functional/inter-sectoral, e.g. Lack of training, investment by lead firms.</p> <p><b>Main policy barriers to upgrading – external to the GVC:</b> e.g. lack of extension services, poor infrastructure, limited links to education provision.</p>
<b>HR Manager</b>	<p><b>Labour force characteristics:</b> skilled/unskilled, education levels, wages</p>

	<b>Training:</b> provided by firm/gov; distinction between on the job-training and skills demanded prior to employment; tacit/non-tacit knowledge
	<b>Barriers to upgrading processes:</b> internal to the GVC: e.g. upskilling of the workforce
	<b>Barriers to upgrading processes:</b> external to the GVC: limited links to education provision?
<b>Employees</b>	Packhouse/ Farm
	No. of years with firm
	Previous employment
	Relative returns: wages
	Training: provided by firm/gov – tacit/non-tacit
	Transferrable skills
	Skill/level education: at entry, over time – qualifications gained

## 2.4 Questionnaire used for Semi-Structured Interviews

### Questions for General Managers

- For how many years has the firm been operating?
- What's the total size (no. of employees, acres of land)?
- What is the ownership structure of the firm (100% FDI etc.)?
- What functions does the firm undertake, e.g. production and export, production only?
- Has the number of functions that the firm undertakes increased/decreased in recent years?
- What is the end market (e.g. Auction house, supermarket)?
- What is the nature of contractual relations with buyers/exporters/lead firms?
- Do buyers/exporters/lead firms provide any inputs?
- What are the main areas in which interaction with lead firms/buyers has resulted in improvements in products and or processes (e.g. certification)?
- What are the perceived main barriers to upgrading products and processes within the cut-flower value chain?

### Questions for Production Managers

- How is production organised?
- What are the major processes and how are they managed/audited?
- How is labour/capital divided across different stages of production? E.g. what is the most labour intensive stage of production?
- What are the main areas in which interaction with lead firms/buyers has resulted in improvements in products and or processes/improvements in skills?
- What are the perceived main barriers to upgrading products and processes within the value chain?

### Questions for HR Managers

- What is the proportion of skilled/unskilled labour within the organisation?
- What skills are required for the most basic entry position in the organisation?
- What training is required?
- What are the main areas in which interaction with lead firms/buyers has resulted in improvements in products and or processes/skills?
- What are the perceived main barriers to upgrading products and processes, and therefore skills, within the cut-flower value chain?

### Questions for Employees

- How many years have you been with the firm?

- What on the job-training and skills have you learnt since joining the firm compared to those demanded prior to employment?
- What was your previous source of employment?
- What does your job entail on a typical day/week?
- What transferrable skills do you think you have you learnt?
- What prevents you from moving into a higher paid position within your current firm?
- How are you remunerated?
- What are the main benefits of working with this company?

## 2.5 Firms Interviewed

Example Questions	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5
For how many years has the firm been operating?	23 yrs - former owner; 10yrs current owner	25 yrs	10 + yrs	20 + yrs	20yrs +
What functions does the firm undertake, e.g. production and export, production only?	Production	Production	Production and export	Production and export	Production
Export markets	70% Dutch Auction Houses; 30% UK Supermarkets (M&S - last 4 yrs)	Dutch wholesalers	100% Dutch Auction Houses - 3 main buyers; stable relation overlast 10yrs; supplies throughout the year with varying quantities	Dutch Auction (33%); Retailers M&S (33%); Tesco (33%)	50% Dutch auction houses; 50% other inc. direct sales
Has the number of functions that the firm undertakes increased/decreased in recent years?	Dutch Auction House: consistent; pre-pay advance. Began to supply larger exporter/grower within last 4yrs - Findlays which supplies UK supermarkets directly	Contracts	Stable		
What is the end market? (e.g. Auction house, supermarket)	Both	Retailers	Auction House		

What is the nature of contractual relations with buyers/exporters /lead firms?	Contracts are held with suppliers into Dutch market; same customer for the last five years; I-t relationships. With the supply chain to UK retailers, orders are placed on a daily basis	Contractual relationship with wholesalers. Firm is responsible for logistics and supply within Kenya	Contractual, prices are fixed in advance, annual contracts	Annual contracts with retailers	
Do buyers/exporters /lead firms provide any inputs?	Quality remarks, customer specifications, market reports, info. Other regulations.	Information on certification, MPS (Dutch), Fair Trade			
What are the main areas in which interaction with lead firms/buyers has resulted in improvements in products and or processes? (e.g. certification?)	On certification such as GlobalGAP, FT, membership of KFC, KEPHIS etc.	On certification, information on regulations, market developments	Reported to be government training by KPHIS		
How is production organised?	Rose production is organised through plots of around 30ha overseen by 11 harvesters, 1 supervisor and other staff including sprayers.	Similar set-up to Firm 1	Plots managed by harvesters, scouts and managers	Works within a budget for a fixed production unit; must meet contractual demands and remain within budget in terms of fertilisers, chemicals and use of labour.	

Other Key Informant Interviews undertaken with representatives from the following firms:

- Wildfire
- Wanenburgh
- Likiriver Farm
- VegPro
- Bigot Flowers
- Other anonymous

## 2.6. Focus Group Interviews

	<b>Local Large-Scale Exporter/Producer: Retailers</b>	<b>Medium sized firm Producer/Exporter: Indirect Retailers</b>	<b>Large firm Producer/Exporter: Auction/Retailers</b>
<b>Firm Type</b>	<b>Group 1</b>	<b>Group 2</b>	<b>Group 3</b>
How many years have you been with the firm?	All more than five years (six members of staff)	Five production managers interviewed. Range of 10-1 years experience	Six members of staff (harvesters). Range of 8 to 14 yrs experience
What on the job-training and skills have you learnt since joining the firm compared to those demanded prior to employment?	Social skills, team work, inspecting and auditing	Field scouting; drip irrigation; experiments and trials; collecting data; testing on field; application of new chemicals; logistics; record keeping; identifying diseases	First aid; pesticide awareness and pest management; record keeping
What transferrable skills do you think you have you learnt?	Social skills including team work; Inspecting and auditing units of production; Pest and disease identification; Chemical application; Record keeping		
What is the proportion of skilled/unskilled labour within the organisation?	All labour is relatively skilled		
What skills are required for the most basic entry position in the organisation?	General requirement of form 4 - entry, but also depends on work experience, class 8, O'level equivalent; managers must have a degree or diploma	Past experience	Form 4 required for harvesting; o levels or diploma for managerial role, however, form 4 certification also accepted if relevant experience; Integrated Pest Management (IPM) certification required
Nature of contractual relations	All staff are on fixed salaries and are permanent; often start as casual/seasonal labourers	Permanent contracts; bonus system is also in operation	All on permanent contracts; some seasonal employment of labour
What are the perceived main barriers to upgrading products and processes, and therefore skills, within the cut flower value chain?			Although areas managed by harvesters has increased, there has been no increase in wages: 10ha pp up from 8ha pp
Wages	N/A	N/A	Daily 250 Tsh - 7,500 a month for harvesters. Below the estimated 12,500 per month required to meet standards of living. General managers paid as much as 60,000 - high inequality.

## **Appendix 3: The Buyers Perspective**

In order to identify the main buyers driving the value chains for each of the two sets of country case-studies, industry sources were consulted. This was so as to identify the main buyers. For example, Garments Tech provides information on UK based Buyer/importer/retailers (<http://garmentstech.com/>); Just-in-Style magazine which provides sector specific information. Recent analyses undertaken by the UK Department for Environment, Food and Rural Affairs were also consulted ([https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69193/pb13206-clothing-action-plan-100216.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69193/pb13206-clothing-action-plan-100216.pdf)).

### **Identifying Buyers**

Because of the major challenges envisaged, key informants within the industry were sought. This process began with the advisers managing the UK Trade in GVC Initiative and the project manager Cardno. The Project manager within Cardno, Steve Homer, was consulted and a number of key informant identified. These were subsequently contacted, with a 1 page summary and outline of the research objectives.

Further to refinement of the questionnaire and identifying the main buyers from each set of the country case-studies, these firms were approached directly. This included via email initially, with a follow-up via the telephone. Contact was also attempted via LinkedIn through the identification of sourcing managers within the main branded retailers.

### **Developing the Questionnaire**

The questionnaires were developed on the basis of the example developed by Schmitz and Knorringa (2001) on *Learning from Global Buyers*. All of the questions were reviewed and adapted in view of the research objectives of this thesis, with some questions removed and others added. The questionnaire was piloted through conversations with key informants involved with the respective sectors (Ameet Morjaria, LSE and Dionne Harrison, IMPACTT). It was then sent to the sourcing and corporate social responsibility departments of the main buyers identified for each sector.

### **Non-response Rates**

In some cases, for example GAP, a response was received explaining quite clearly that all publicly available information was listed on their website and they would not respond to requests related to research. No response from H&M was received, though the website details also explained that all publicly available information was listed and they would not respond to researchers.

Despite repeated requests to pass on the questionnaire to their buyer contacts this was considered extremely challenging in view of time as well as resource constraints, with an unwillingness to comply with delving potentially sensitive information for free. One respondent responded quite candidly that this information is usually provided at a cost. Hyper sensitivity in some cases meant that despite a formal introduction via a key informant the buyer (Findlays, UK) simply chose not to respond.

### **Focus Group Discussion**

In view of these challenges, an intervention was made at a monthly Business Fights Poverty meeting with five of their corporate members present, in the form of a roundtable discussion in order to explore some of the main issues arising from the research in view of cost and capability considerations. The main motivations of buyers in sourcing from developing country suppliers were described as primarily based on cost with due diligence. There was admission that closer interaction with intermediate institutions such as business associations and formal education providers could be beneficial in the future. Managerial training was desirable; similarly, stable and predictable legal frameworks.

### 3.1 List of Key Informant Interviews

	Name	Organisation	Sector
1	Steve Homer	Cardo Emerging Markets  Manager of UK Department for International Development, Trade in Global Value Chains Initiative (TiGVC)	Both: cut flowers and textiles and clothing
2	William Van Den Berg	Private Consultancy	Cut Flowers Direct sales
4	Michael Jennings	Chief Executive of Fresh Produce Association, UK	Cut Flowers Direct sales
5	Dirk-Jan Zegelaar Senior Programme Manager	CBI, Netherlands Centre for the promotion of imports from developing countries	Cut Flowers Dutch auction house
6	Milco Rikken Specialist in marketing research and floriculture trade	ProVerde, Netherlands	Cut Flowers Dutch auction house
7	James McGregor, Senior Researcher	Previously IIED and now with Private Consultancy	Cut Flowers Direct sales
8	Jen Shepherd, Product Officer, sugar and flowers	Fair Trade, UK	Cut Flowers Direct sales
9	Katie Lewis, Acting Head of Product Management	Fair Trade, UK	Cut Flowers - direct Cotton
10	Dionne Harrison, Director	IMPACTT Limited	Textiles and Clothing Bangladesh/ Cambodia
11	Sajib Sen Project Coordinator	TiGVC Bangladesh	Textiles and Clothing Bangladesh
12	Gabriella Wass, Strategy and Policy Assistant	Ethical Trade and Sustainability, Primark	Textiles and Clothing Bangladesh/ Cambodia
13	Libby Annat, Director	Ethical Trade and Sustainability, Primark	Textiles and Clothing Bangladesh/ Cambodia
14	Anjel Punte, Policy Officer	CSR & Taskforce Bangladesh at the Dutch Ministry of Foreign	Textiles and Clothing Bangladesh/ Cambodia
15	Zahid Torres, Director	Business Fights Poverty	Textiles and Clothing Bangladesh/ Cambodia Cut Flowers Direct sales
16	Kebur Azbaha, Trade and Private Sector Adviser	Department for International Development, UK	Textiles and Clothing: Bangladesh Cut Flowers: Kenya
17	Johnny Richards, Trade Policy Advisor and lead for UK Trade in GVC Initiative	Department for International Development, UK	Textiles and Clothing: Bangladesh Cut Flowers: Kenya

### **3.2 Questionnaire for Buyers: Textiles and Clothing, Cambodia and Bangladesh**

**Name of company:** \_\_\_\_\_

**Organisation type:** \_\_\_\_\_

**Country HQ/parent company:** \_\_\_\_\_

**Position:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**1. Which countries are your most important suppliers and what percentage do they account for (latest year)?**

- a) \_\_\_\_\_ % of imports
- b) \_\_\_\_\_ % of imports
- c) \_\_\_\_\_ % of imports
- d) \_\_\_\_\_ % of imports
- e) \_\_\_\_\_ % of imports

**2. If not listed above, how do Bangladesh and Cambodia feature within the above list of major suppliers?**

Bangladesh: \_\_\_\_\_ % of imports

Cambodia: \_\_\_\_\_ % of imports

**3. If sourcing from Bangladesh, how does it feature compared to your other main suppliers in terms of:** Scale from 1 (worse) to 5 (better)

- a. volume
- b. variety
- c. range
- d. price
- e. reliability
- f. adherence to B2B standards/certification
- g. other: \_\_\_\_\_

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

**4. If sourcing from Cambodia, how does it feature compared to your other main suppliers in terms of:** Scale from 1 (worse) to 5 (better)

- a. volume
- b. variety
- c. range
- d. price
- e. reliability
- f. adherence to B2B standards/certification
- g. other: \_\_\_\_\_

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

**5. What is your role in relation to sourcing from Bangladesh/ Cambodia?**

Bangladesh: \_\_\_\_\_

Cambodia: \_\_\_\_\_

**6. When did sourcing from Bangladesh/Cambodia begin? (year)**

Bangladesh: \_\_\_\_\_

Cambodia: \_\_\_\_\_

**7. What is the main product and % of orders, sourced from Bangladesh and Cambodia, respectively?**

Bangladesh; main product: \_\_\_\_\_ % orders: \_\_\_\_\_

Cambodia; main product: \_\_\_\_\_ % orders: \_\_\_\_\_

**8. Are textiles or any inputs supplied to producers? (delete as appropriate)**

Bangladesh: No/Yes

Cambodia: No/Yes

**9. If yes to Q8, where are these inputs sourced from?**

For Bangladesh, sourced from: \_\_\_\_\_

For Cambodia, sourced from: \_\_\_\_\_

**10. If no to Q8, has responsibility for sourcing been devolved to the garment producer?**

Bangladesh: No/Yes

Cambodia: No/Yes:

**11. Overall, what are your main motivations in terms of sourcing from:**

Bangladesh	Cambodia
Cost of production:	Yes/no
- Cost of labour:	Yes/no
- Ease of doing business:	Yes/no
- Other infrastructure	Yes/no
Adherence to B2B standards	Yes/no
Other certification	Yes/no
Government support:	Yes/no
Skilled labour force:	Yes/no
Other:	Other:

**12. Do you own factories in either country (if so, pls. name), or have any other investments within country?**

Bangladesh: No/Yes: \_\_\_\_\_

Cambodia: No/Yes: \_\_\_\_\_

**13. What is the nature of the contractual relations (e.g. verbal, written contract) with suppliers in Bangladesh?**

Verbal:	yes/no
Written:	yes/no
Other:	
<b>If verbal, how frequently are volumes/prices agreed?</b>	
Monthly:	yes/no
Annual:	yes/no
Other:	
<b>If written: since when has a written agreement been in place?</b>	
<b>What time period is covered:</b>	
Monthly:	yes/no
Annual:	yes/no
<b>Are there any other conditions (e.g. price, variety, exclusivity):</b>	

**14. What is the nature of the contractual relations (e.g. verbal, written contract) with suppliers in Cambodia?**

<b>Verbal:</b>	yes/no
<b>Written:</b>	yes/no
<b>Other:</b>	
<b>If verbal, how frequently are volumes/prices agreed?</b>	
<b>Monthly:</b>	yes/no
<b>Annual:</b>	yes/no
<b>Other:</b>	
<b>If written: since when has a written agreement been in place?</b>	
<b>What time period is covered:</b>	
<b>Monthly:</b>	yes/no
<b>Annual:</b>	yes/no
<b>Are there any other conditions (e.g. price, variety, exclusivity):</b>	

**15. Have there been any major changes in the nature of contractual relations with Bangladesh or Cambodia over recent years, and if so what?**

Bangladesh: \_\_\_\_\_

Cambodia: \_\_\_\_\_

**16. In the future now how might the products sourced from Bangladesh/Cambodia change (e.g. increase or decrease in volume/variety/range), and why?**

Bangladesh: \_\_\_\_\_

Cambodia: \_\_\_\_\_

**17. How would you rank Bangladesh in terms of the following indicators? Scale from 1 (weak) to 5 (strong) – pls. delete as appropriate**

- a. regular and reliable product quality
- b. price
- c. response time
- d. punctual delivery
- e. changes with orders
- f. responding to new demands
- g. other

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

**18. How would you rank Cambodia in terms of the following indicators? Scale from 1 (weak) to 5 (strong) – pls. delete as appropriate**

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

- a. regular and reliable product quality
- b. price
- c. response time
- d. punctual delivery
- e. changes with orders
- f. responding to new demands
- g. other

1	2	3	4	5
---	---	---	---	---

**19. In what aspects does Bangladesh need to improve most in the coming five years? (Please circle)**

- a. reliability
- b. response time
- c. quality
- d. changes to orders
- e. responding to new demands
- f. other: \_\_\_\_\_

**20. In what aspects does Cambodia need to improve most in the coming five years? (Please circle)**

- a. reliability
- b. response time
- c. quality
- d. changes to orders
- e. responding to new demands
- f. other: \_\_\_\_\_

**21. Do you interact with any business associations and where are they based?**

**Bangladesh:**

Nature of interaction: \_\_\_\_\_

Name/location of association: \_\_\_\_\_

**Cambodia:**

Nature of interaction: \_\_\_\_\_

Name/location of association: \_\_\_\_\_

**22. Have you provided any assistance to suppliers in Bangladesh in relation to the following?  
Please circle as appropriate**

- a. achieving reliable quality, what/how: \_\_\_\_\_
- b. upgrading technology, what/how: \_\_\_\_\_
- c. speeding up response, what/how: \_\_\_\_\_
- d. punctual delivery, what/how: \_\_\_\_\_
- e. Training for workers, what/how: \_\_\_\_\_
- f. Training for managers, what/how: \_\_\_\_\_

g. other – please note \_\_\_\_\_

**23. Have you provided any assistance to suppliers in Cambodia in relation to the following? Please circle as appropriate**

- a. achieving reliable quality, what/how: \_\_\_\_\_
- b. upgrading technology, what/how: \_\_\_\_\_
- c. speeding up response, what/how: \_\_\_\_\_
- d. punctual delivery, what/how: \_\_\_\_\_
- e. Training for workers, what/how: \_\_\_\_\_
- f. Training for managers, what/how: \_\_\_\_\_
- g. other – please note \_\_\_\_\_

**24. What major changes, if any, do you envisage regarding your business strategy in the next 5 years?**

---

**25. Do you have any other additional comments in relation to any of the aforementioned questions and responses?**

---

Thank you for your time. All responses will remain anonymous.

### **3.3 Questionnaire for Buyers: Cut Flowers (Kenya and Ethiopia)**

**Name of company:** \_\_\_\_\_

**Organisation type:** \_\_\_\_\_

**Country HQ/parent company:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Position:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**1. Which countries are your most important suppliers in Africa as well as elsewhere and what percentage do they account for (latest year)?**

f) \_\_\_\_\_ % of imports

g) \_\_\_\_\_ % of imports

h) \_\_\_\_\_ % of imports

i) \_\_\_\_\_ % of imports

j) \_\_\_\_\_ % of imports

**2. If not listed above, how do Kenya and/or Ethiopia feature within the above list of major suppliers?**

Kenya: \_\_\_\_\_ % of imports

Ethiopia: \_\_\_\_\_ % of imports

**3. If sourcing from Kenya, how does it feature compared to your other main suppliers in terms of:  
Scale from 1 (worse) to 5 (better)**

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

- a. volume
- b. variety
- c. range
- d. price
- e. reliability
- f. adherence to B2B standards/certification
- g. other: \_\_\_\_\_

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

**4. If sourcing from Ethiopia how does it feature compared to your other main suppliers in terms of:**

Scale from 1 (worse) to 5 (better)

- a. volume
- b. variety
- c. range
- d. price
- e. reliability
- f. adherence to B2B standards/certification
- g. other: \_\_\_\_\_

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

**5. What is your specific role in relation to sourcing from Kenya and/or Ethiopia?**

Ethiopia: \_\_\_\_\_

Kenya: \_\_\_\_\_

**6. What are the types of products sourced from Kenya/Ethiopia respectively?**

Kenya		Ethiopia	
Roses	Yes/no	Roses	Yes/no
- Sweetheart		- Sweetheart	
- Hybrid		- Hybrid	
- Intermediate		- Intermediate	
Fillers		Fillers	
Lilies		Lilies	
Other (pls. specify)		Other (pls. specify)	

**7. When did you begin sourcing from:**

Kenya: \_\_\_\_\_

Ethiopia: \_\_\_\_\_

**8. What are your main motivations in sourcing from:**

<b>Kenya</b>		<b>Ethiopia</b>	
Cost of production:	Yes/no	Cost of production:	Yes/no
- Cost of labour:	Yes/no	- Cost of labour:	Yes/no
- Ease of doing business:	Yes/no	- Ease of doing business:	Yes/no
- Other infrastructure	Yes/no	- Other infrastructure	Yes/no
Adherence to B2B standards	Yes/no	Adherence to B2B standards	Yes/no
Other certification	Yes/no	Other certification	Yes/no
Government support:	Yes/no	Government support:	Yes/no
Skilled labour force:	Yes/no	Skilled labour force:	Yes/no
Other:		Other:	

**9. Do you own farms in Kenya or have any other investments within country?**

No/Yes: \_\_\_\_\_

If farms, what are the names: \_\_\_\_\_

**10. Do you own farms in Ethiopia, or have any other investments within country?**

No/Yes: \_\_\_\_\_

If farms, what are the names: \_\_\_\_\_

**11. What is the nature of the contractual relations with your main supplier as listed in Q 1:**

<b>Verbal:</b>	yes/no
<b>Written:</b>	yes/no
<b>Other:</b>	Yes/no
<b>On what basis?</b>	
<b>Spot buy (daily)</b>	yes/no
<b>Peak</b>	yes/no
<b>Seasonal (winter/summer etc.)</b>	yes/no
<b>If verbal, how frequently are volumes/prices agreed?</b>	
<b>Monthly:</b>	yes/no
<b>Annual:</b>	yes/no
<b>Other:</b>	
<b>If written: since when has a written agreement been in place? (days/months/years)</b>	
<b>What time period is covered:</b>	
<b>Monthly:</b>	yes/no
<b>Annual:</b>	yes/no
<b>Are there any other conditions (e.g. price, variety, exclusivity):</b>	

**12. What is the nature of the contractual relations with your main supplier in Kenya:**

<b>Verbal:</b>	yes/no
<b>Written:</b>	yes/no
<b>Other:</b>	
<b>On what basis?</b>	
<b>Spot buy (daily)</b>	yes/no
<b>Peak</b>	yes/no
<b>Seasonal (winter/summer etc.)</b>	yes/no
<b>If verbal, how frequently are volumes/prices agreed?</b>	
<b>Monthly:</b>	yes/no
<b>Annual:</b>	yes/no
<b>Other:</b>	
<b>If written: since when has a written agreement been in place? (days/months/years)</b>	
<b>What time period is covered:</b>	
<b>Monthly:</b>	yes/no
<b>Annual:</b>	yes/no
<b>Are there any other conditions (e.g. price, variety, exclusivity):</b>	

**13. What is the nature of the contractual relations with your main supplier in Ethiopia:**

<b>Verbal:</b>	yes/no
<b>Written:</b>	yes/no
<b>Other:</b>	
<b>On what basis?</b>	
<b>Spot buy (daily)</b>	yes/no
<b>Peak</b>	yes/no
<b>Seasonal (winter/summer etc.)</b>	yes/no
<b>If verbal, how frequently are volumes/prices agreed?</b>	
<b>Monthly:</b>	yes/no
<b>Annual:</b>	yes/no
<b>Other:</b>	
<b>If written: since when has a written agreement been in place? (days/months/years)</b>	
<b>What time period is covered:</b>	
<b>Monthly:</b>	yes/no
<b>Annual:</b>	yes/no
<b>Are there any other conditions (e.g. price, variety, exclusivity):</b>	

**14. Has the relationship changed in contractual terms with your main suppliers (Q1), and if so how?**

---

**15. Has the relationship changed in contractual terms with your main supplier in Kenya, and if so how?**

---

**16. Has the relationship changed in contractual terms with your main supplier in Ethiopia, and if so how?**

---

**17. How would you rank Kenya in terms of the following indicators? Scale from 1 (weak) to 5 (strong) – pls. delete as appropriate**

- a. regular and reliable product quality
- b. price
- c. response time
- d. punctual delivery
- e. changes with orders
- f. responding to new demands
- g. adherence to B2B standards/certification
- h. other: \_\_\_\_\_

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

**18. How would you rank Ethiopia in terms of the following indicators? Scale from 1 (weak) to 5 (strong) – pls. delete as appropriate**

- a. regular and reliable product quality
- b. price
- c. response time
- d. punctual delivery
- e. changes with orders
- f. responding to new demands
- g. adherence to B2B standards/certification
- h. other: \_\_\_\_\_

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

**19. In the future now how might the products sourced from Kenya/Ethiopia change (e.g. increase or decrease in volume/variety/range), and why?**

Kenya: \_\_\_\_\_

Ethiopia: \_\_\_\_\_

**20. In what aspects does Kenya need to improve most in the coming five years? Pls. circle 1st response**

- a. reliability
- b. response time
- c. quality
- d. punctuality
- e. changes to orders
- f. responding to new demands
- g. certification

h. other: \_\_\_\_\_

**21. In what aspects does Ethiopia need to improve most in the coming five years? Pls. circle 1st response**

- a. reliability
- b. response time
- c. quality
- d. punctuality
- e. changes to orders
- f. responding to new demands
- g. certification
- h. other: \_\_\_\_\_

**22. What support might be required to achieve these necessary improvements (e.g. trade facilitation/vocational skills/training/) and who might be best placed to intervene (e.g. Donors, business association)?**

Kenya: \_\_\_\_\_

Ethiopia: \_\_\_\_\_

**23. How do you interact with any business associations and where are they based?**

Kenya:

Nature of interaction: \_\_\_\_\_

Name/location of association: \_\_\_\_\_

Ethiopia:

Nature of interaction: \_\_\_\_\_

Name/location of association: \_\_\_\_\_

**24. Do you have any other additional comments in relation to any of the aforementioned questions and responses?**

---

**25. What assistance have you provided to suppliers in Kenya in relation to the following? Please circle as appropriate**

- a. achieving reliable quality; what/how: \_\_\_\_\_
- b. upgrading technology; what/how: \_\_\_\_\_
- c. speeding up response; what/how: \_\_\_\_\_
- d. punctual delivery; what/how: \_\_\_\_\_
- e. Training for workers; what/how: \_\_\_\_\_
- f. Training for managers; what/how: \_\_\_\_\_
- g. other – please note: \_\_\_\_\_

**26. What assistance have you provided to suppliers in Ethiopia in relation to the following? Please circle as appropriate**

- a. achieving reliable quality; what/how: \_\_\_\_\_
- b. upgrading technology; what/how: \_\_\_\_\_
- c. speeding up response; what/how: \_\_\_\_\_
- d. punctual delivery; what/how: \_\_\_\_\_
- e. Training for workers; what/how: \_\_\_\_\_
- f. Training for managers; what/how: \_\_\_\_\_
- g. other – please note: \_\_\_\_\_

**29. What major changes, if any, do you envisage regarding your business strategy in the next 5 years?**

---

**30. How will this affect the competitive position of Ethiopia and Kenya, respectively?**

---

**31. Do you have any other additional comments in relation to any of the aforementioned questions and responses?**

---

**Thank you for your time.**

## Appendix 4: Kenya Firm-Level Results

### 3.1 Direct Marketing Route, Logistic Regression, SPSS Output

**Omnibus Tests of Model Coefficients**

	Chi-square	df	Sig.
Step 1	Step	3.691	.449
	Block	3.691	.449
	Model	3.691	.449

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	60.911 <sup>a</sup>	.056	.088

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

**Hosmer and Lemeshow Test (or H-L Test)**

Step	Chi-square	df	Sig.
1	9.702	8	.287

**Contingency Table for Hosmer and Lemeshow Test**

		Dummy Direct = 0		Dummy Direct = 1		Total
		Observed	Expected	Observed	Expected	
	1	5	5.500	1	.500	6
	2	6	5.325	0	.675	6
	3	6	5.245	0	.755	6
	4	6	5.165	0	.835	6
Step 1	5	4	5.061	2	.939	6
	6	3	4.879	3	1.121	6
	7	4	4.699	2	1.301	6
	8	5	4.534	1	1.466	6
	9	5	4.371	1	1.629	6

10	7	6.220	3	3.780	10
----	---	-------	---	-------	----

### **Classification Table<sup>a</sup>**

Observed		Predicted		Percentage Correct	
		Dummy Direct			
		0	1		
Step 1	Dummy Direct	0	50	1	
		1	12	1	
Overall Percentage				79.7	

a. The cut value is .500

## Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	
Step 1 <sup>a</sup>	Ownership	.008	.647	.000	1	.990	1.008
	Labour Intensity	-.327	1.084	.091	1	.763	.721
	Age	.099	.061	2.691	1	.101	1.104
	Productivity	.000	.000	.001	1	.972	1.000
	Constant	-2.967	1.078	7.576	1	.006	.051

a. Variable(s) entered on step 1: Ownership, Labour Intensity, Age, Productivity

Step number: 1

## Observed Groups and Predicted Probabilities

Predicted Probability is of Membership for 1

The Cut Value is .50

Symbols: 0 - 0

<sup>1</sup> - 1  
Each Symbol Represents .5 Cases.

Casewise List<sup>b</sup>

Case	Selected Status <sup>a</sup>	Observed		Predicted Group	Temporary Variable	
		Dummy	Direct		Resid	ZResid
32	S	0**		.543	1	-.543
43	S	1**		.105	0	.895

a. S = Selected, U = Unselected cases, and \*\* = Misclassified cases.

b. Cases with studentized residuals greater than 2.000 are listed.

### 3.2 Auction House Marketing Route, Logistic Regression, SPSS Output

Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	3.592	4	.464
	3.592	4	.464
	3.592	4	.464

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	63.649 <sup>a</sup>	.055	.084

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	8.906	8	.350

Contingency Table for Hosmer and Lemeshow Test

	Dummy Auction = 0		Dummy Auction = 1		Total
	Observed	Expected	Observed	Expected	
Step 1	1	6	5.734	0	.266
	2	6	5.255	0	.745
	3	4	5.097	2	.903
	4	4	4.931	2	1.069

5	5	4.764	1	1.236	6
6	4	4.659	2	1.341	6
7	3	4.501	3	1.499	6
8	6	4.424	0	1.576	6
9	5	4.278	1	1.722	6
10	7	6.356	3	3.644	10

## Classification Table<sup>a</sup>

	Observed	Predicted			
		Dummy Auction		Percentage	
		0	1		Correct
Step 1	Dummy Auction	0	50	0	100.0
		1	14	0	.0
	Overall Percentage				78.1

a. The cut value is .500

## Variables in the Equation

Variables in the Equation							
	B	S.E.	Wald	df	Sig.	Exp(B)	
Step 1 <sup>a</sup>	Ownership	-.436	.629	.481	1	.488	.647
	Labour intensity	-.602	1.180	.260	1	.610	.547
	Age	.064	.059	1.148	1	.284	1.066
	Productivity	.000	.000	1.450	1	.229	1.000
	Constant	-1.521	1.031	2.175	1	.140	.219

a. Variable(s) entered on step 1: Ownership\_A, LandhaLabour, FirmAge, OutputkgLandha.

Step number: 1

## Observed Groups and Predicted Probabilities

Casewise List <sup>b</sup>						
Case	Selected Status <sup>a</sup>	Observed	Predicted	Predicted Group	Temporary Variable	
		Dummy Auction			Resid	ZResid
59	S	1**	.143	0	.857	2.452

a. S = Selected, U = Unselected cases, and \*\* = Misclassified cases.

b. Cases with studentized residuals greater than 2.000 are listed.

### **3.3 All Marketing Channels**

## Model Summary

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	82.206 <sup>a</sup>	.083	.111

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	15.678	8	.047

### Contingency Table for Hosmer and Lemeshow Test

Contingency Table for Hosmer and Lemeshow Test						
	Dummy All = 0		Dummy All = 1		Total	
	Observed	Expected	Observed	Expected		
Step 1	1	5	4.146	1	1.854	6
	2	1	3.718	5	2.282	6
	3	2	3.282	4	2.718	6
	4	5	2.999	1	3.001	6
	5	2	2.722	4	3.278	6
	6	4	2.492	2	3.508	6
	7	4	2.295	2	3.705	6
	8	3	2.130	3	3.870	6
	9	1	1.870	5	4.130	6

10	1	2.345	9	7.655	10
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**Classification Table<sup>a</sup>**

		Observed		Predicted		Percentage Correct
				Dummy All		
				0	1	
Step 1		Dummy All	0	11	17	39.3
Overall Percentage		1	10	26		72.2
						57.8

a. The cut value is .500

**Variables in the Equation**

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	Ownership	.423	.531	.633	1	.426
	Labour intensity	.450	.785	.329	1	.566
	Age	-.104	.053	3.860	1	.049
	Productivity	.000	.000	1.062	1	.303
	Constant	1.370	.855	2.570	1	.109

a. Variable(s) entered on step 1: Ownership\_A, LandhaLabour, FirmAge, OutputkgLandha.

Step number: 1

Observed Groups and Predicted Probabilities

4 +			1	1			+				
I			1	1			I				
I			1	1			I				
F	I		1	1			I				
R	3 +		1	1	1	0	1				
E	I		1	1	1	0	1				
Q	I		1	1	1	0	1				
U	I		1	1	1	0	1				
E	2 +		1	1	1	10	1				
N	I		1	1	1	10	1				
C	I		1	1	1	10	1				
Y	I		1	1	1	10	1				
1 +		0 00	00011	0 1	100000	01010000100001110111	111 1				
11 +		0 00	00011	0 1	100000	01010000100001110111	111 1				
11 I		0 00	00011	0 1	100000	01010000100001110111	111 1				
11 I		0 00	00011	0 1	100000	01010000100001110111	111 1				
Predicted	-----	-----	-----	-----	-----	-----	-----				
Prob:	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	1

Predicted Probability is of Membership for 1  
The Cut Value is .50  
Symbols: 0 - 0  
          1 - 1  
Each Symbol Represents .25 Cases.

## Casewise List<sup>a</sup>

a. The casewise plot is not produced because no outliers were found.

## **Appendix 5: Ethiopian Firm-level Data**

#### 4.1 Direct Marketing Route, Logistic Regression, SPSS Output

## Omnibus Tests of Model Coefficients

Chi-square Test of Model Fit Statistics				
		Chi-square	df	Sig.
Step 1	Step	18.858	6	.004
	Block	18.858	6	.004
	Model	18.858	6	.004

## Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	88.076 <sup>a</sup>	.201	.279

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

## Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	21.503	8	.006

### Contingency Table for Hosmer and Lemeshow Test

	Dummy_Direct = 0		Dummy_Direct = 1		Total	
	Observed	Expected	Observed	Expected		
Step 1	1	5	7.401	3	.599	8
	2	8	6.863	0	1.137	8
	3	7	6.652	1	1.348	8
	4	4	6.165	4	1.835	8
	5	8	6.735	1	2.265	9
	6	8	5.806	0	2.194	8
	7	5	5.040	3	2.960	8
	8	6	4.571	2	3.429	8
	9	4	4.134	4	3.866	8
	10	1	2.634	10	8.366	11

Classification Table<sup>a</sup>

	Observed	Predicted			Percentage Correct	
		Dummy_Direct		0		
		0	1			
Step 1	Dummy_Direct	0	55	1	98.2	
		1	18	10	35.7	
Overall Percentage					77.4	

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 <sup>a</sup>	Age	.126	.199	.399	1	.528	1.134	.768 1.674
	OwnershipDummy	1.083	.592	3.340	1	.068	2.953	.925 9.431
	LabourIntensityOutputLabour	.000	.000	1.933	1	.164	1.000	1.000
	ProductivityOutputLand	.000	.000	2.071	1	.150	1.000	1.000
	...2007_F	-.036	.024	2.239	1	.135	.965	.921 1.011
	andin2007	-.051	.052	.958	1	.328	.950	.858 1.052
	Constant	-2.184	1.768	1.525	1	.217	.113	

a. Variable(s) entered on step 1: Age, OwnershipDummy, LabourIntensityOutputLabour, ProductivityOutputLand, ...2007\_F, andin2007.

Step number: 1

### Observed Groups and Predicted Probabilities

Predicted Probability is of Membership for 1

Predicted Probabilities

Symbols: 0 - 0

1 = 1

Each Symbol Represents 1 Case.

### Casewise List<sup>b</sup>

Case	Selected Status <sup>a</sup>	Observed	Predicted	Predicted Group	Temporary Variable	
		Dummy_Direct			Resid	ZResid
21	S	1**	.102	0	.898	2.967
29	S	1**	.093	0	.907	3.125
35	S	1**	.093	0	.907	3.125

a. S = Selected, U = Unselected cases, and \*\* = Misclassified cases.

b. Cases with studentized residuals greater than 2.000 are listed.

## 4.2 Auction House Marketing Route, Logistic Regression, SPSS Output

Block 1: Method = Enter

**Omnibus Tests of Model Coefficients**

	Chi-square	df	Sig.
Step 1	Step	14.050	.029
	Block	14.050	.029
	Model	14.050	.029

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R	Nagelkerke R
		Square	Square
1	100.679 <sup>a</sup>	.154	.207

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

**Classification Table<sup>a</sup>**

	Observed	Predicted			Percentage Correct	
		Dummy Auction		0		
		0	1			
Step 1	Dummy Auction	0	35	13	72.9	
		1	13	23	63.9	
	Overall Percentage				69.0	

a. The cut value is .500

**Variables in the Equation**

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 <sup>a</sup>	Age	-.201	.206	.947	1	.330	.818	.546 1.225
	OwnershipDumm y	-.528	.521	1.025	1	.311	.590	.212 1.639
	LabourIntensityO utputLabour	.000	.000	1.302	1	.254	1.000	1.000
	ProductivityOutp utLand	.000	.000	.712	1	.399	1.000	1.000
	...2007_F andin2007	.005	.017	.078	1	.779	1.005	.972 1.039
	Constant	-.049	.044	1.237	1	.266	.952	.874 1.038
		2.611	1.832	2.031	1	.154	13.617	

a. Variable(s) entered on step 1: Age, OwnershipDummy, LabourIntensityOutputLabour, ProductivityOutputLand, ...2007\_F, andin2007.

Step number: 1

## Observed Groups and Predicted Probabilities

## Casewise List<sup>a</sup>

a. The casewise plot is not produced because no outliers were found.

### 4.3 Both Marketing Channels, Logistic Regression, SPSS Output

## Omnibus Tests of Model Coefficients

Univariate Test of Model Components				
		Chi-square	df	Sig.
Step 1	Step	13.437	6	.037
	Block	13.437	6	.037
	Model	13.437	6	.037

### Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	78.774 <sup>a</sup>	.148	.222

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

### Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	5.256	8	.730

### Contingency Table for Hosmer and Lemeshow Test

Step 1	Dummy_Both = 0		Dummy_Both = 1		Total
	Observed	Expected	Observed	Expected	
1	7	7.668	1	.332	8
2	8	7.344	0	.656	8
3	7	7.098	1	.902	8
4	8	6.898	0	1.102	8
5	6	6.717	2	1.283	8
6	6	6.344	2	1.656	8
7	8	6.867	1	2.133	9
8	5	5.742	3	2.258	8
9	5	4.753	3	3.247	8
10	4	4.570	7	6.430	11

### Classification Table<sup>a</sup>

Step 1	Dummy_Both	Observed		Predicted		Percentage Correct	
				Dummy_Both			
		0	1	0	1		
	0	60	4			93.8	
	1	17	3			15.0	
Overall Percentage						75.0	

a. The cut value is .500

### Variables in the Equation

Step 1 <sup>a</sup>	Age	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
Step 1 <sup>a</sup>	Age	.064	.204	.099	1	.753	1.066	.715	1.589

	Coef.	S.E.	t-value	p-value	R-squared	F-value	AIC	BIC
OwnershipDummy	-.747	.570	1.716	1	.190	.474	.155	1.449
LabourIntensityOutputLabour	.000	.000	1.698	1	.193	1.000	1.000	1.000
ProductivityOutputLand	.000	.000	.276	1	.599	1.000	1.000	1.000
...2007_F	.031	.019	2.749	1	.097	1.032	.994	1.071
andin2007	.125	.052	5.825	1	.016	1.133	1.024	1.254
Constant	-2.765	1.853	2.227	1	.136	.063		

a. Variable(s) entered on step 1: Age, OwnershipDummy, LabourIntensityOutputLabour, ProductivityOutputLand, ...2007\_F, and in2007.

Step number: 1

## Observed Groups and Predicted Probabilities

Predicted Probability is of Membership for 1

The Cut Value is .50

Symbols: 0 - 0

1 - 1

Each Symbol Represents .5 Cases.

## Casewise List<sup>b</sup>

Case	Selected Status <sup>a</sup>	Observed	Predicted	Predicted Group	Temporary Variable	
		Dummy_Both			Resid	ZResid
7	S	1**	.152	0	.848	2.366

12	S	1**		.061	0	.939	3.930
19	S	1**		.101	0	.899	2.978
20	S	1**		.151	0	.849	2.369

a. S = Selected, U = Unselected cases, and \*\* = Misclassified cases.

b. Cases with studentized residuals greater than 2.000 are listed.