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Institutional Complementarities and Regional Economic Growth in China: A Comparative Study of Nanjing and Suzhou

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Thesis submitted for the degree of PhD

2018

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French sailor Bernard Moitessier once remarked that sailing is a compromise between distance covered and mounting fatigue. Perhaps the same could be said about the process of writing a PhD thesis. The completion of this journey would not have been possible without the support and nurturing of many people.

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Abstract

This thesis seeks to illuminate and compare two different ‘models’ of economic development trailed by two different prefecture-level cities in China: Nanjing and Suzhou. Although both are considered affluent cities, and located in the same broad economic area, the Yangtze river delta, and in the same sub-provincial region, Southern Jiangsu, the cities in case present markedly distinct patterns of local institutional configurations and of economic growth outcomes.

While Suzhou features an industrial base more heavily concentrated on information and communication technologies, traditionally dominated by foreign-invested enterprises, geared towards external markets and reliant on lower wages, Nanjing, by contrast, has an industrial base dominated by state-owned enterprises, is more sectorially diversified, and is less reliant on exports and cheap labour. In order to make sense of these structural characteristics of both cities, the concept of institutional complementarities is employed, and it is argued that each city benefits from the coherence of institutional interconnections present at the city-level.

After analysing the singular structural-institutional characteristics of each city, the thesis focuses on their respective economic performances. It is observed that in the years prior to the 2008 global financial crisis Suzhou clearly outperformed Nanjing, but after 2009 the scenario is reversed, with Nanjing taking the lead. Hence, one cannot assert which local ‘model’ is unambiguously superior to the other in terms of growth outcomes.

The research aims to demonstrate how different local institutional-structural characteristics render distinct growth performances, and under which macroeconomic conditions one particular local ‘model’ outperform the other, elucidating, thus, the ability of city-specific institutional complementarities to spur regional growth in different periods of time. Following demand-led theories on economic growth, it will be argued that it is the match between the national-level aggregate demand composition and the local-level structural-institutional characteristics which will render localities relatively faster (or slower) growth rates.

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List of Acronyms and Abbreviations

AoD: Age of Decline

BPCG: Balance of payments constrained growth (model)

BRI: Belt and Road Initiative

CCP: Chinese Communist Party

CIP: Nanjing Chemical Industrial Park

CME: Coordinated-market economies

COE: Collectively-owned enterprise

CPI: Consumer price index

CRS: Cadre responsibility system

GA: Golden Age

GB: Great Britain

GDP: Gross domestic product

GLF: Great leap forward

GMD: Nationalist Party - Guomindang

DR: Demand regime

DZ: Development Zone

EBR: Extra-budgetary revenues

EPZ: Export-processing zone

EU: European Union

FCS: Federalism, Chinese-style

FDI: Foreign direct investment

FIE: Foreign-invested enterprise

FYP: Five years plan

GDP: Gross domestic product

GFC: Global financial crisis (2008)

GPNs: Global production networks

HEI: Higher educational institution

HK: Hong Kong

ICT: Information and communications technologies

IPO: Initial public offering

IRS: Increasing returns to scale

JSBS: Jiangsu Provincial Bureau of Statistics

JV: Joint-venture

KETDD: Kunshan Economic and Technological Development District

K/L: Capital per worker or Capital-Labour ratio

KV Coefficient: Kaldor-Verdoorn coefficient

KV Law: Kaldor-Verdoorn Law

LFP: Local financing platforms

LGFV: Local government financial vehicles

LME: Liberal-market economies

M: Imports

MAR: Marshall-Arrow-Romer (type of knowledge spillovers)

M-Form: Multi-divisional organizational form

MoF: Ministry of Finance

MoLR: Ministry of Land and Resources

MHURD: Ministry of housing and urban-rural development

MPF: Market-preserving federalism

NBS: National Bureau of Statistics of China

NCDF: Nanjing city-region development forum

NEG: New Economic Geography

NGT: New Growth Theory

NICs: Newly Industrialized countries

NIE: New Institutional Economics

NNHTDZ: Nanjing New and High-Tech Development Zone

PI/CC: Political incentives/Career concerns literature

PLA: People's Liberation Army

PR: Productivity regime

R&D: Research and Development

RT: *Régulation* Theory

SEZ: Special Economic Zone

SIP: Sino-Singapore Suzhou Industrial Park

SME: Small and medium enterprise

SND: Suzhou new district industrial park

SOE: State-owned enterprise

TFP: Total Factor Productivity

TL: Thirlwall's Law

TNCs: Transnational companies

TVE: Township and village enterprise

U-Form: Unitary organizational form

UK: United Kingdom

UNCTAD: United Nations Conference on Trade and Development

US: United States of America

VAT: Value-added tax

VoC: Varieties of Capitalism

X: Exports

Y/K: Output-capital ratio

Y/L: Output per worker

YPC: Yangzi Petrochemical Co (a Sinopec subsidiary)

YRD: Yangtze River Delta

WFOEs: Wholly foreign-owned enterprises

WGI: Worldwide governance indicators

WTO: World Trade Organization

'There are so many realities that in trying to render all of them visible, one ends up in the dark. That is why, when one paints a portrait there comes a moment when one ought to stop, having attained a sort of caricature. Otherwise, at the end, there would be nothing at all.'

Picasso, 1957

Chapter 1: Introduction

1.1) Research problem and overview

China's remarkable economic performance since the late 1970s is a well-known fact, highlighted by scholars from distinct disciplines and from different theoretical affiliations. This does not mean, however, that there is a consensus on the mechanisms responsible for explaining this impressive phenomenon. Indeed, China's staggering economic growth rates registered in the past four decades has incited a whole array of academic debates to emerge, versing around on competing explanations for the country's economic success as well as other relatable topics. An important offshoot discussion revolves around regional economic growth in China. While the country has registered astonishing economic growth rates in the past four decades, this performance presented and still presents a great regional variegation. Not surprisingly, the scholarship on regional inequalities, broadly defined, has proliferated (Chan et al, 2008; Riskin, 2015). In particular, regional economic growth, and its determinants, has become a central concern in academic publications (see, *inter alia*, Chen and Wu, 2005; Phillips and Chen, 2011; Sun et al, 2017 and Yao and Zhang, 2001). This thesis seeks to contribute to this particular debate and sets out to understand *what explains economic growth in Chinese localities*.

Given that the objective of this thesis is to understand what explains regional economic growth in China, one must have a strong theoretical background in growth theories. Growth theories enable a profound understanding of what are the mechanisms responsible for generating economic growth, and debates therein. Without such understanding, any reasoning on this realm risks becoming misplaced and misleading. Specifically, economic growth theories directed at the regional level must be given a special attention if one is to scrutinize *regional* growth. But one cannot have a narrow focus on growth theories solely. It has long been recognized that 'institutions matter', so a strong theoretical background in institutions is also required. More importantly, one must explicitly tease out the connections between these two broad theoretical traditions and reveal how they dialogue with each other. These two realms, growth and institutions, will be the theoretical pillars of this thesis.

Regarding the first theoretical pillar, growth theories, this study proceeds by reviewing the most relevant theories, as well as its possible applications for the regional growth. It is emphasised the key notion of increasing returns to scale, and the competing interpretations on the concept. Chiefly, this study adopts an approach centred on Kaldorian notions on economic growth – it highlights the pivotal role of aggregate demand in determining the possibilities of economic growth for any locality, and the concepts of path-dependence, lock-in effects, and endogenous technical change.

Concerning the second theoretical pillar, institutions, this thesis focuses on the broad idea of ‘comparative institutional analysis’, enabling the comparison between alternative institutional arrangements present in different regions. The core notion is that dissimilar institutional arrangements can be equally efficient, depending on other (wider) determinants. In particular, and in order to employ the idea of comparative institutional analysis feasibly, the key concept of institutional complementarities receives a special emphasis in this thesis. According to Amable (2016), the concept of institutional complementarities can be defined as:

‘the idea that certain institutional forms, *when jointly present*, reinforce each other and contribute to improving the functioning, coherence or stability of specific institutional configurations, varieties or models of capitalism’ (p.79, original emphasis)

In other words, this theoretical approach assumes that there exist mutually reinforcing effects among distinct institutional realms, and that the overall efficiency of any given institutional arrangement must be backed by coherent institutional forms in different realms.

Although simple, the concept entails significant consequences and suits very well the rationale of this research: when one takes the concept of institutional complementarities seriously, any idea of the existence of a ‘one-size fits all’ institutional approach must be thoroughly questioned. If, in order to attain the maximum of its effectiveness, an institutional form must be combined with other institutional forms, the whole idea of (universal) ‘best practices’ becomes devoid of real meaning. This opens a possibility for the existence of alternative institutional arrangements, equally effective or efficient, but orchestrated along dissimilar lines. As one can foresee, the concept of institutional complementarities is particularly useful to a thesis intending to draw a comparison between two different regions and fits nicely the nature of comparative studies.

The insights gathered by growth and institutional theories will provide the necessary analytical and theoretical foundation for this research. The title of the research, ‘Institutional complementarities and regional economic growth in China’, reflects that. Nevertheless, in order to proceed with a more specific scrutiny of regional growth *in China*, one must delve into the peculiarities of the Chinese case. Hence, it is needed to understand the historical role of China’s local states, as well as their *de facto* functions in spurring economic growth. As the subtitle of the research (‘A comparative study of Nanjing and Suzhou’) indicates, two local states in China will be compared. As the local state is in itself an institution, it is a legitimate arena for the application of both institutional and growth theories. Moreover, local states are not hermetically isolated from the central state, and as such the study of regional growth in China invites the scholar to also examine what is the nature of the relationship between the central government with local governments in contemporary China. In order to understand the particularities of a locality, one must also consider the totality in which it is embedded.

As a matter of fact, the study of regional economic growth cannot be divorced from broader debates on the nature of the Chinese state. Invariably, the study of local aspects of economic development in China is interwoven with the manner in which the scholar perceives and theorizes the Chinese state. Hence, some brief notes on the debate of the nature of the Chinese state - emphasizing its spatial component – may be due now.

In their review of the literature on the nature of the Chinese state in the Post-Mao Era, Baum & Shevchenko (2001) pinpoint the ‘wild profusion of new labels’ (p.333) and the ‘taxonomic anarchy’ (p.334) which have flooded the scholarly research on China. Labels as disparate as ‘confucian Leninism’ and ‘symbiotic clientelism’ have been employed in attempts to capture China’s idiosyncratic institutional arrangements emerged after the reform and opening paradigm initiated with the 3rd plenary session of the 11th central committee of the Chinese Communist Party (CCP). Attractive analytical frameworks developed in the early 2000s, like the Varieties of Capitalism (VoC) approach (Hall and Soskice, 2001), have also been deployed in China in order to determine the particular blend of the country’s capitalism. The results seem to be inconclusive, with some scholars identifying the country with the canonical liberal-market economy (LME), moulded after the experience of the United States (Witt, 2010), and others finding a parallel with a typical coordinated-market economy (CME), with China resembling the French economy (Fligstein and Zhang, 2011). Other scholars have

creatively forged seemingly contradictory labels, like ‘state neoliberalism’ (Chu and So, 2010), in order to account for the peculiar rise of the Middle Kingdom.

This confusion and lack of clear-cut answers are not an accident. The post-1978 period in China has witnessed a series of thorny scholarly debates, revolving around topics such as central-local relations, transformation of property rights, the role and transformation of the Chinese Communist Party (CCP), state and market relations, and state and civil society relations, to name perhaps the most celebrated ones. Each of these topics deserve a close scrutiny in their own right, but it is their intertwining that bewilders the China scholar even more. To make matters worse, the effects of this intertwining seem to not follow a unique and standardized order, presenting themselves with great variegation across time and space. Baum & Shevchenko (2001) encapsulates it accurately when they state that ‘reform policies have not produced uniform patterns of interaction between state agencies and emerging (or renascent) socioeconomic forces’ (p.354). Therefore, this somehow chaotic interlacing moulds an internal institutional heterogeneity in China, which, as Zhang & Peck (2014) put it, ‘have long confounded ‘imported’ theories’ (p.3), leading to the widespread practice of ‘sui generis accounts’ (p.3) of the country’s transformations.

China’s internal institutional heterogeneity, as conveyed above, is often expressed geographically, at distinct scales of governance. In other words, there are multiple combinations of social, political and economic variables operating at the same time at distinct administrative jurisdictions. Disparate configurations and strategies have been crafted by local states in China, reflecting a fragmented composition of patterns of governance and socioeconomic development. These characteristics render attempts of framing China *exclusively* from the national level ill-fated and normally unsuccessful (Peck & Zhang, 2013). Hence, to solely privilege the national level when searching for a ‘system integrity’ or institutional coherence, like most approaches¹ do, can be a red herring.

¹ That is not only the case of the VoC approach, as alluded above, but also of the developmental state paradigm, for instance. For Howell (2006), the Chinese central government faces serious obstacles in controlling localities in order to steer a coherent nationwide project of economic development, typical from the ‘canonical’ developmental states. As a result, for Beeson (2009) the Chinese state capabilities certainly lags behind in comparison with the East Asian countries during their high-growth period. Both Howell (2006) and Beeson (2009) believes that national developmental priorities, to a great extent, are displaced by local officials who are often driven by local and/or personal interests and short-term individual gains. For further references in comparing China with the developmental state paradigm, see Baek (2005), Bolesta (2007), Boltho & Weber (2009), Pirie (2013) and Knight (2014).

Rather, to the extent that China can be perceived as a ‘model’, it is one ‘capable of containing a wide array of ostensibly contradictory features’ (Zhang & Peck, 2014: p.9). More than that, this mosaic of heterogeneous socioeconomic configurations cannot be apprehended simply as hermetically isolated ‘regional models’ detached from the national level and from each other. To theorize China is to tease out the links and relations between these regional models themselves and with the central government.

For Lim (2014), the Chinese national state plays the key role of being the mediator and arbitrator of market-oriented reforms in China. On the one hand, it pushes for policies normally aligned to a ‘neoliberal’ paradigm, by incentivizing less barriers for international trade and direct investment². These policies ultimately benefit Chinese exporters and Chinese regions attracting foreign direct investments (FDI), and they are also a requirement for domestic companies aiming to conquer new markets overseas and for the fulfilment of national geo-economic strategies³ aiming at extending the economic and political clout of Beijing abroad. The World Trade Organization (WTO) accession in 2001 and the recently launched Belt and Road Initiative (BRI) exemplify this rationale. On the other hand, market-oriented initiatives are selectively filtered by a national state which actively promotes *geographically* differentiated rules for capital accumulation, yielding economic-geographical unevenness within China’s territory. China’s reforms and open up have as a hallmark a *spatial component*: from the original 4 Special Economic Zones (SEZs) in 1979, through the 14 open coastal cities in 1984 and more recently the ‘Go West’ programme, China’s reforms and policies have hardly been pursued in a geographically-uniform manner. The strategy consists in granting (by the central government) more leeway for capital accumulation experiments and institutional innovations in some regions, while others remain unaffected. To the extent that this strategy succeeds, spatial unevenness follows, and the same central government either extends the previous experiments to other regions and/or enacts redistributive policies to guarantee that less developed regions do not lag excessively behind in a new context of internal differentiated economic geographies and fierce competition among localities. It is always through the central government that localities are granted

² It is illustrative to recall Xi Jinping’s speech at the World Economic Forum in Davos in 2017:

‘Whether you like it or not, the global economy is the big ocean that you cannot escape from...We must remain committed to developing global free trade and investment, promote trade and investment liberalization and facilitation through opening-up and say no to protectionism. Pursuing protectionism is like locking oneself in a dark room. While wind and rain may be kept outside, that dark room will also block light and air’. (Xi, 2017)

³ Often spearheaded by state-owned enterprises (SOEs)

‘preferential’ policies and gain access to new possibilities of capital accumulation, so ‘decentralizing’ policies must be legitimized by central authorities. The final result is a political economy permeated by a series of *economic-spatial tensions*, one in which the objective, to quote Lim (2014: p.238-9), is ‘not to produce nationwide institutional homogeneity’, but to ‘engender patterned variants of developmental permutations that, working in tandem, help to propel the entire political economy’. Uneven development is not simply an outcome of China’s reforms, but also a source (Lim, 2014). In order to tackle China’s transformation in the Post-Mao Era, therefore, it is required to, from the onset of an analysis, to embrace this multi-scalar characteristic, this ‘creative tension’ between different levels of government and the ‘enduring sources of internal heterogeneity’ (Zhang & Peck, 2014: p.9) the country enjoys.

The theoretical observations presented above provides the necessary encompassing perspective for the study of economic issues at the local level in contemporary China. The difficulties in classifying China in all-enveloping theories and labels, and an undue *exclusive* focus on the national scale, as just presented, invites the scholar to concentrate more at the local level, but without neglecting its interrelations with the national and global levels.

1.2) Methodology and empirical strategy

There are many possible manners to conduct empirical research on the topic of regional economic growth (in China or elsewhere). Most studies linked to mainstream economics and neoclassical theory work with econometric cross-sectional studies. While this approach is commendable if one primarily seeks generalization of the main findings, it has the downside of overlooking the specificities of each locality. Moreover, many methodological caveats can be levelled against this approach, as it is discussed in the literature review of mainstream growth theories focused on the regional level (chiefly, the new economic geography (NEG) and urban economics, to be discussed in chapter two).

When scrutinizing regional growth in China, this thesis will carry out a comparative *case study* in order to assess what explains regional economic growth in China. This strategy allows for a comparative empirical analysis, enabling the readership to observe how two distinct cities have been performing in terms of economic growth outcomes. This research intends to shed a light in individual case studies, emphasizing their particularities and

exploring the richness of their details and specific history. A typical econometric cross-section study, despite of its strengths, would not attend well to these objectives.

Hence, the approach of selecting case studies – often preferred by other social scientists and economists working from a political economy vantage point – fits better the purpose of this thesis. To a great extent, the selection of the preferred methodology mirrors a trade-off between external and internal validity: while the former privileges the generalizability of the results, the latter enables the researcher to delve into more details into the possible explanatory variables of the phenomenon under scrutiny.

1.2.1) Justification for Nanjing and Suzhou as case studies

Jiangsu province was selected and, in particular, a comparison between two cities located in Southern Jiangsu, Nanjing and Suzhou, will be conducted. Jiangsu is a large and wealthy province in China, but it is also extremely heterogeneous in its internal institutional arrangements and growth outcomes. The north of the province is considered relatively poor, while the south is one of the most prosperous and affluent areas in the country. Being located in Southern Jiangsu, the cities of Nanjing and Suzhou represent successful experiences of economic development in Reform Era China, and therefore an investigation on these two cities will certainly shed a light on many positive aspects which accounts for China's remarkable track record on economic growth.

Nanjing and Suzhou were selected because, despite of their geographical proximity and relatively similar status as wealthy cities, they have trailed very distinct developmental paths and exhibit distinct patterns of local institutional arrangements. The objective is to single out two successful, yet distinct, patterns of development, highlighting their differences and specificities. Despite of their dissimilarities, it will be suggested that both cities have been able to achieve positive outcomes during the post-Mao Era and, as such, both display beneficial features of China's long-term economic development. The comparison will underscore the (co)existence of structurally distinct local economic 'models' in China, highlighting the country's internal institutional heterogeneity.

Nevertheless, the relative economic performance of Nanjing and Suzhou have not been invariant over time, with one city presenting superior results in one period and the other

reversing the trend in other periods. It will be argued that it is not possible to pin down which city possesses a superior ‘model’ of development. Whether or not one city displays a relatively superior economic performance will depend ultimately on broader considerations, in particular (and following demand-led growth theories) the evolution of the country’s aggregate demand composition, and its match with the city’s structural and institutional characteristics.

A comparison between a rich area with a poor area was consciously avoided, because this sort of contrast would not conform to the objectives of this thesis. The aim of this research is to understand what explain regional economic growth in China, *highlighting the country’s internal institutional heterogeneity* as present few paragraphs above. For this research to fulfil its potential, the selected case studies should be able to indicate that distinct institutional arrangements – recall the definition of the concept of institutional complementarities, presented above - can, under certain macroeconomic conditions, be equally successful. A contrast between a ‘successful’ case against an ‘unsuccessful’ one cannot emphasize the existence of alternative local ‘models’ of economic growth within the Chinese territory, as the institutional arrangements of the ‘unsuccessful’ case, from the onset, would have to be considered ill-fated and ineffective in relation to the other. This sort of comparison, between a case symbolizing a ‘growth failure’ arrangement versus a ‘growth miracle’ one, is by itself alluring, but does not attend to the specific motivations and objectives of this thesis.

One could still question why, among the five prefecture-level cities existent in Southern Jiangsu, specifically Nanjing and Suzhou were selected. Once again, this selection obeys the rationale of contrasting two distinct, yet successful, local ‘models’. It turns out that, as it is discussed in detail in the empirical chapter of this thesis (chapter six), while Suzhou features an industrial base more heavily concentrated on information and communication technologies, traditionally dominated by foreign-invested enterprises (FIEs), geared towards external markets and reliant on lower wages, Nanjing, by contrast, has an industrial base dominated by state-owned enterprises (SOEs), is more sectorially diversified, and is less reliant on exports and cheap labour. As such, their economic structures serve well the purpose of the comparison. Other cities, notably Wuxi, have similar characteristics in relation to Suzhou. Wuxi could have been selected instead of Suzhou, but a comparison between Wuxi and Suzhou would be meaningless given the scope and purpose of this research, as both cities are structurally very similar. The research gave priority to Suzhou instead of Wuxi because

the former was more of a paradigmatic case of the ‘Sunan model’ of industrialization, as discussed in chapter six.

Therefore, the dissimilarities of Nanjing and Suzhou, when juxtaposed, exemplify the uniqueness of China’s developmental trajectory. The comparative analysis between Nanjing and Suzhou will illuminate the causes and mechanisms explaining regional economic growth in contemporary China and luckily will provide meaningful lessons to actors (either in academia or in policy-making circles) interested in the topic.

This comparative study also sits comfortably with the broader theoretical observations presented previously. It has been suggested that Chinese capitalism could be better appreciated by the seamless articulations of an array of regional ‘models’ of capitalism, constituted ‘through a unique blend of central orchestration and local devolution’ (Peck & Zhang 2013: p.360). Different localities produced different responses for market-oriented reforms, opening-up and decentralization of fiscal and administrative power. The cases of Nanjing and Suzhou underscores this characterization, highlighting two successful, yet distinct, ‘models’ of local institutional arrangements and economic growth in modern China. The comparison between these two ‘models’ will underline the existence of distinct institutional forms at the local level in China, and their interactions with key economic variables at both the national and international level.

1.2.2) The analytical framework employed

In carrying out the comparison between Nanjing and Suzhou, this thesis endeavoured to create a new analytical framework in order to explain the mechanisms behind regional economic growth in China. In a nutshell, this new framework essentially applies the concept of institutional complementarities, but employs it at the local level in China, in the two selected prefecture-level cities. The concept of institutional complementarities (and the theoretical debates around it, as it is discussed in chapter three) will give shape to the characterization of both Nanjing and Suzhou, and it is argued that each city benefits from the coherence of institutional interconnections present at the city-level. The framework is completed by growth theories of Kaldorian inspiration, arguing that economic growth is always a demand-led process and that it is the match (or otherwise) between the national-level aggregate demand composition and the local-level institutional characteristics which will

render localities relatively faster (or slower) growth rates. This analytical framework builds on theories reviewed in the literature review chapters of this thesis, as well as on the specific debates revolving around the role of the local state in spurring economic growth in contemporary China. The analytical framework will be introduced in chapter five, after the reviews on relevant theories and China-specific debates.

1.2.3) Justification for the period of analysis

The data analysis will focus on the 2001-2015 period. This timeframe was decided for a series of reasons. Firstly, it starts in the year China joined the WTO, representing a major national-level institutional change, affecting the economic possibilities of the whole country. Notably, cities in East China (the case of Nanjing and Suzhou) tend to be more engaged with foreign trade and investments, so the WTO accession is likely to be especially relevant for the cities under study. Secondly, the period 2001-2015 can be neatly divided into two sub-periods of roughly similar length: considering the 2008 global financial crisis (GFC) as a major watershed, one can consider a pre-GFC period, roughly from 2001 to 2008, and a post-GFC period, roughly from 2009 to 2015. As it will be shown in the empirical analysis of this study, the GFC seems to have provoked far-reaching changes in China's composition of aggregate demand, and this subdivision will be employed in analysing the growth performances of both cities. Thirdly, data availability at the local level is restricted for the pre-2001 period, creating obstacles difficult to be overcome given the empirical strategy of this thesis.

1.3) Contribution to the existing knowledge and claims of originality

This research has built on two ongoing debates: primarily, on the general debate on regional economic growth in China; but also on the debate on the existence of distinct regional 'models' or 'patterns' of economic development in a country characterized by distinct institutional formations at the local level. As such, the research has ambitioned to shed a light on a specific case study, a comparison between Nanjing and Suzhou. The contribution of this thesis to the existing knowledge on the topic is two-fold: firstly, it offers a new framework to be employed by the interested scholar. As such, it opens new avenues for further research, by allowing the redeployment of the framework here developed in other localities in the country and thus enabling further investigations concerning the open-ended transformations taking place at prefecture-level cities in China. While well-established approaches all have important

contributions to the topic, ranging from economic mainstream approaches (normally employing cross-section and panel data analyses) to studies carried out by non-economists (especially by economic geographers), none of them have adopted the institutional complementarities concept at the local level in combination with the Kaldorian approach to economic growth, as synthesized in chapter five. This new framework can be claimed to be an original contribution to this area of academic inquiry. Still on this methodological note, it was necessary to define more precisely what is meant by ‘local level’ in China. The term is vague and often employed carelessly to designate the province, city, county, township or village levels. This somewhat imprecise terminology undermines the analytical power of many studies that focus on the ‘local level’ in China. This research, and the framework it developed, has the advantage of setting a precise definition for the term ‘local’: here it refers to the *prefecture-level cities* level, avoiding, thus, spatial ambiguities. The justification for this decision is presented in chapter five, when the framework is introduced. Secondly, this research contributes to the better understanding of Nanjing and Suzhou themselves, in their own right. While countless studies on these two cities surely exists (and many were acknowledged in chapter six), this thesis has illuminated the institutional characteristics and growth performances of both cities in a unique manner. As such, the research has strengthened the overall academic scholarship and knowledge specific to Nanjing and Suzhou.

1.4) Structure of the thesis

This thesis is structured in the following manner: apart from this introduction, there will be five substantive chapters, and a last one to conclude this study.

In chapter two it is provided a literature review of the most relevant growth theories for this study, trying to focus on regional growth insights. Firstly, it is introduced mainstream growth theories, with a special emphasis on the regional level. After a critical assessment of those theories, a heterodox approach will be presented. This alternative, of Kaldorian inspiration, can also be deployed at the regional level, and will be the backbone of this thesis when it comes to growth theories. Finally, some key insights on the notion of structural change will be advanced, highlighting its connections with the Kaldorian approach to economic growth and the role of institutions in this process.

Chapter three, on a logical follow-up, delves on the debate about institutions (in economic growth). With the discussions on growth theories already presented, this chapter will aim at understanding what are the institutional imperatives for the economic growth and structural changes predicted by the theories presented in chapter two to materialize. Initially, the more conventional view, associated with the broad camp of the New Institutional Economics (NIE) is critically presented. Secondly, an alternative approach, centred on the concept of institutional complementarities, is discussed. In particular, the work associated with the so-called French *régulation* theory (RT) is privileged; this strand of the literature pursues a political economy definition of the concept, understanding institutions as ‘socio-political compromises’. The last session of this chapter critically assesses methodological themes, with a special attention to the methodological nationalism implied in most (institutional) theories. The chapter finishes with some considerations on the role of institutions at the local level and its interconnections with other scales of governance.

Chapters two and three therefore offer a critical literature review on the main theoretical pillars of this thesis – growth and institutional theories. The following chapter resumes the discussion on China, focusing in particular on the local state and its relations with the central Chinese state. Chapter four, therefore, firstly aims at recalling the historically-rooted significance of the local state in contemporary China and secondly at presenting critically the most relevant debates on the so-called central-local relations and on the role of local states in economic growth in Post-Mao China.

With the theoretical backbone of the thesis already scrutinized and after the review of the pertinent literature on the local state in China, chapter five attempts to weld all these elements together into a coherent and new framework, presenting, thus, my overall understanding of how these different strands of literature may dialogue with each other, and in which manner they are relevant to understand regional economic growth in China. In this chapter I advance the thesis that the analysis of institutional complementarities, often assumed to work exclusively at the national level, should be scaled down to the local level in the case of China. Moreover, it is exposed *which specific institutional forms* are deemed to be complementary to each other, drawing from the literature presented in the theoretical chapters of this study. Equally important, given China’s multi-layered political-administrative system, one must be more specific and explain what the ‘local level’ means in this context. In this chapter, therefore, it is justified why *prefecture-level cities* were selected as the proper unit of analysis

for my thesis. This specific selection avoids the vagueness of the term ‘local level’ and sets the ground for the empirical analysis in the subsequent chapter. The *original* framework developed in chapter five incorporates all the topics above, in order to analyse regional economic growth in China. While there are plenty of studies versing around local economic growth in China, to the best of my knowledge this is the first one to give life to this new analytical framework developed in chapter five, tailor-made for the Chinese case.

In chapter six it is time to apply the original framework developed in chapter five. After briefly introducing Jiangsu province, and in particular its ‘north-south divide’, the chapter turns to a comparison between two prefecture-level cities located in Southern Jiangsu: Nanjing and Suzhou. After presenting a brief background of the two cities, the framework developed in chapter five is employed in order to analyse and highlight the institutional differences of both cities. It is argued that the cities in case were bequeathed distinct institutional legacies, which in turn have shaped the strategic developmental decisions they adopted after 1978. The focus of the analysis will be the more recent period, after the WTO accession: 2001-2015. It will be shown that both cities managed to create two different systems of institutional complementarities, based on their distinct local characteristics. Having laid out the institutional differences of both cities, the chapter proceeds by discussing how these specific local structural-institutional characteristics yield distinct local growth performances. As such, the Kaldorian insights to economic growth will be fully employed, in alliance with concepts developed by the *régulation* theory (RT). It will be suggested that none of the ‘models’ (Nanjing or Suzhou) can be said to possess an unequivocal superiority over the other. Rather, the economic performance of one city depends on the match between its (local) structural-institutional characteristics and the macro-level composition of demand. Hence, between 2001 and 2009 Suzhou outperformed Nanjing, but between 2009 and 2015 the scenario was reversed.

Finally, chapter seven concludes this study. In light of the empirical analysis presented, some key theoretical concepts, such as demand-led growth, path-dependence, lock-in effects and institutional change will be highlighted. Moreover, the case study conducted in this thesis will be able to illustrate the existence of a diversity of developmental strategies and institutional settings at the local level, portraying one of the pivotal features of China’s distinctive brand of capitalism.

Chapter 2: Growth Theories and Structural Change

2.1) Introduction

Economic growth and development is likely to be one of the main concerns of countries around the world. Reflecting this widespread concern, economists have devised many growth theories, aiming at explaining how a relatively poor country would be able to increase, for a long period of time, its total output.

The mainstream growth theory during the Post-War period was the so-called Solow growth model. Its main concern was to measure the contribution of inputs - capital and labour – to the increase of output over time. In order to do so, a typical neoclassical aggregate production function was called into the model. The national economy, thus, was represented by a one-sector model, featuring perfect competition, full employment of resources, diminishing returns on capital and constant returns to scale on the aggregate level. The per capita output growth rate would be impacted by an exogenous variable: technical progress, defined as the output increase that is not explained by increases in the inputs. From the onset, then, technical progress is a residual, as it is left unexplained and un-theorized. Within this paradigm, technical progress is often labelled total factor productivity (TFP), reflecting, supposedly, improvements in the technology employed in the production function of the one-sector economy. Perhaps the main legacy the Solow growth model has bequeathed for economists as a profession is the so-called convergence theory: if technology is freely available to all – countries work with the same production function – free movements of the inputs (capital and labour) should guarantee that per capita output will converge in the long-run. Under free mobility and identical technology, market forces are expected to generate the equalization of both capital-labour (K/L) ratios and the returns to capital (profit rate), regionally and globally (Fine & Dimakou, 2016).

These brief remarks on Solow's model work as an introductory note to more modern growth theories. As it will be seen, the basic assumptions of Solow's model, as well as its predictions, have been severely criticized by economists from different schools of thought. This chapter aims at critically presenting key mainstream and heterodox growth theories, and while it do

not ambition to delve into every single theory produced by the profession, it will attempt to shed a light on the most relevant ones, giving emphasis for those which focus on or may be applied at the regional level.

After this brief introduction, the second section revolves around mainstream endogenous growth theories (and its regional ramifications), the third section moves to the Kaldorian approach on economic growth and the fourth section provides a partial summary and brief discussion on regional growth framed by the distinct schools of thought scrutinized before. The fifth section will introduce the debate on structural change and will work as a theoretical bridge to chapter three, dedicated to institutions.

2.2) Increasing returns to scale and mainstream endogenous growth theories

One way of presenting the emergence of theories which are critical to the neoclassical Solowian paradigm is to frame it through the perspective of increasing returns to scale (IRS). As Arrow (2000) remarked, this is not a new strategy and the idea of increasing returns have been part of economic thinking since at least Adam Smith. Likewise, policy prescriptions based on the assumption of increasing returns in manufacturing, broadly defined, date from at least Alexander Hamilton's (1791) influential 'Report on manufactures'. The way increasing returns have been theorized by economists, however, have not been invariable along time.

Smith in his *Wealth of Nations* has famously posited that a deeper division of labour and specialization leads to increased skills and dexterity of labour, bringing about higher productivity. But secondly, Smith could also be considered as the first to introduce the idea of *induced technical change*, in which the division of labour entails the creation and adoption of new, task-specific, machinery, which in turn increases labour productivity. To quote Smith himself: 'I shall only observe, therefore, that the invention of all those machines by which labour is so much facilitated and abridged seems to have been originally owing to the division of labour' (Smith, 1776 as cited by McCombie, 2002: 66).

McCombie (2002), rather perceptively, realizes the dilemma Smith created to the general idea of perfect competition so commonly emphasized later on by neoclassical economists. Assuming the existence of increasing returns meant that as production expanded average costs

decrease, undermining one of the pillars of perfect competition. Increasing returns and a certain degree of monopoly power should be expected to go hand-in-hand.

The puzzle inherited from Smith is solved by Alfred Marshall. What the author does is to assume firms operate under constant returns to scale at the plant level, but simultaneously he introduces the concept of *external economies of scale*. Costs of production of individual firms would not fall as the output increased, but if the industry in which firms are embedded in would grow as a whole each firm then would encounter increasing returns, at the industry level. Because each firm benefits from other firms production decisions, that is a (positive) externality. The dear assumption of perfect competition could be left undefiled, thanks to the economies of scale at the industry level, i.e., external to the firm⁴.

The Marshallian ‘solution’ meant that every single factor of production could still be paid their marginal product. Thence, strong increasing returns to scale, as long as they are external to the firm, do not undermine the foundations of the neoclassical theory of factor pricing and distribution. The only inconvenience left is that the presence of externalities means that private benefits to factors of production will typically be smaller than social benefits, entailing a tendency of under-provision of some goods (McCombie, 2002). As a result, there is a scope for government subsidies in some particular areas, as it will be shown further on.

Marshall’s external economies, it is noteworthy, are usually divided into three sub-types, each corresponding to different sources. The first one concerns externalities arisen from the common use of goods – the presence of subsidiaries and other firms producing intermediate goods, inputs and machinery which will be supplied to final producers. The second concerns the common use of specialized workers, often referred to as ‘thick’ labour markets - the pooling of workers endowed with specific skills. It becomes easier for employers to find employees, and vice-versa. Thirdly, firms may benefit from the introduction of novelties in the productive process made by other firms and the general sharing of ideas (Rosser, 2011).

⁴ Apart from the external economies of scale proposition, Marshall offered two more solutions for the dilemma bequeathed by Smith: the first sustained that a firm’s costs would not decrease with the expansion of production because of the lack of managerial organization of firms, which would offset the gains derived from increasing returns to scale. The second dealt specifically with the idea of imperfect competition, with firms facing a downward- sloping demand curve. Both of the explanations did not gain so much traction as the external economies hypothesis (McCombie, 2002).

As can be hinted from above, all the three sources of the Marshallian external economies present a *spatial component* – it can be inferred that the benefits from externalities are realized only when their sources are clustered together. If common suppliers of intermediate goods are a source of positive externalities, then the closer they are to the final good producer the stronger is its positive effect. The same applies for a common labour market, and the sharing of ideas. The likelihood of economically useful information to spill over from one firm to another seems to be a function of the proximity of the agents involved. Not surprisingly, these external economies are often dubbed ‘agglomeration economies’, i.e., forces which explain why certain economic agents flock together. Marshall himself formulated much of his thinking on this matter on the grounds of ‘industrial districts’: clusters of small firms and plants belonging to a particular industry located within a geographically delimited area.

While one may pack all the three Marshallian sources of external economies into the label of agglomeration economies, it is theoretically meaningful to be aware of its different sources. Indeed, as it will be seen later, different theoretical traditions formalized Marshall’s insights in distinct manners, depending on the sources of the externalities involved. Whereas the tradition of the endogenous growth theory (and its regional ramifications) tend to focus solely on the third, intangible source, information spillovers, the new economic geography (NEG) pioneered by Paul Krugman tends to focus on the first two (often called by Krugman himself ‘pecuniary externalities’).

Finally, one might emphasize the movement away from increasing returns *internal* to the firm, *à la* Smith, to increasing returns external to the firm, and their implications for neoclassical theory, as exposed above. The formalization of internal increasing returns had to wait until at least the paper by Dixit and Stiglitz (1977)⁵ to be published so that mainstream economists started to incorporate this old idea into new models, theories and genres.

⁵ A description of the model, borrowing heavily from Foltyn (2012) can be stated as it follows: each firm exhibits (internal) increasing returns to scale, and since each firm produces a unique variety, monopolistic pricing applies. However, it is assumed a free-entry condition, so that the pure profits yielded in the market induce other firms to entry, until the marginal firm (the last to entry) just breaks even. Because consumers demand all existing varieties symmetrically, any new firm entering the market will choose to produce a unique variety and exploit its monopolistic pricing power. When a firm enters the market and starts producing a new variety, consumers divert some of the expenditure previously spent on existing varieties to purchase the new good. The quantity of each variety sold decreases, then, as profit does (due to rising *average* costs). It follows, then, that the total industrial output can only increase by increasing the number of varieties, and hence we have a formal model of imperfect competition generating (sub-optimum) equilibrium.

As it will be shown, the adoption of the imperfection competition model, following Dixit and Stiglitz (1977), became widespread practice within many segments of the ‘new economics’ – new growth theory, new trade theory and new economic geography. Nevertheless, some strands have stuck to the Marshallian solution of perfect competition and constant returns at the firm level aided by external economies of scale.

2.2.1) New growth theory (NGT)

In a series of publications starting in the mid-1980s, several studies challenged the neoclassical Solow-type growth model in different fronts. Essentially, one may identify three core characteristics on the so-called endogenous growth models: positive externalities, increasing returns to scale on the production of (aggregate) output, and decreasing returns on the production of knowledge. The formal incorporation of the latter into long-run growth theories is probably the most striking element of his models. Knowledge is introduced as the basic form of capital (in opposition to physical capital) in an economy. True, knowledge was also present in the old Solowian growth model; however, it was assumed to be a public good, available to all. As such, there was no theory of knowledge creation and accumulation.

Following Romer (1986) breakthrough study, countless variations of endogenous growth models ensued, crafted by different scholars. What we endeavour here is to present the core characteristics of the New Growth Theory (NGT) and lay down the prime differences among some of its main types of models. The NGT engineered the introduction of different mechanisms of endogenous advances in the techniques of production, and managed to scrap the neoclassical assumption of diminishing returns to investment at the aggregate level. The exact mechanisms, however, employed to explain knowledge creation and accumulation and thus, endogenous growth, differ. One may highlight three distinct mechanisms, leading to three different types of models.

Firstly, in Romer’s original model (1986) knowledge accumulation takes place *indirectly*, and the Marshallian theorization of increasing returns being external to the firm is pursued. In particular, the source of externalities is the intangible knowledge spillovers. Firms invest in capital, and it is capital accumulation that leads to, through Arrow’s (1962) learning by doing hypothesis, knowledge generation. This process takes places at the firm level, but once knowledge is created it spills over to the whole industry. As this is a one-sector economy, this

is tantamount to say it spills over to the whole economy. As third parties benefit from a firm's investment decision, positive externalities are rife in the model. In tandem with Marshall, it means the assumption of increasing returns to scale, external to the firm, do not need to undermine the presumption of perfect competition and constant returns at the plant level. Thence, this is a model based on investments in capital, with knowledge created – indirectly - via learning by doing and accumulating at the national level through positive externalities. The presence of the latter, however, results in a suboptimal equilibrium growth rate. Government intervention to encourage capital accumulation is thus welcome.

A second type of model aims its attention at direct mechanisms of knowledge creation and accumulation. Therefore, in Romer (1990a) and Aghion and Howitt (1992) firms invest in research and development (R&D) with the direct objective of creating new knowledge. Technological innovation, thus, becomes a systematic activity performed by firms, and not a mere by-product of investment in capital. Moreover, in order for firms to have economic incentives to invest in R&D, they must be able to appropriate the benefits stemming from it. Knowledge, then, is perceived explicitly to be partly excludable (usually via secrecy and/or intellectual property rights), generating monopoly power to innovative firms. The abnormal profits earned in the process can cover the costs and risks involved in the innovative enterprise. As a result, we are taken away from the world of perfect competition and towards the realms of imperfect competition, and this is done usually by employing Dixit-Stiglitz's (1977) model. The transition from Romer's first model (1986) to this second (1990) also marks his maturing in the manner he perceives knowledge and market structures: Romer starts to continuously emphasize (1990a, 1990b, 1994) the non-rivalry aspect of knowledge, and how this unique characteristic leads necessarily to imperfect competition. The micro-foundations of Romer's second model (1990a) are straight-forward: firms incur in fixed R&D costs, therefore must price their goods at above its constant costs of production. There is no possibility of equilibrium with price-taking firms; they must be price-setters. If we are to explain growth based on increasing returns to scale, firms must set their prices at above its marginal costs, accruing economic rents on the production of knowledge. Thus, we have a scenario of firms endogenously and intentionally investing in order to create new knowledge, and thence earning a return on these investments - charging a price above the competitive level. Moreover, it follows that larger markets will induce more R&D spending and faster growth, as the average costs decreases with the size of the market.

A third strand on endogenous growth may be framed through the concept of human capital. Building upon the idea of knowledge spillovers, Lucas (1988) sets up economic growth models based on the concept of human capital. The latter is understood simply as the ‘general skill level’ (p.17) of a worker. A worker with higher levels of human capital will be more productive (i.e., deliver a higher marginal product) than a worker with lower levels of general skills. Typically, individuals will decide on one’s allocational decision between current production and human capital accumulation. Hence, there is a trade-off every individual faces between dedicating more non-leisure time to current production or to skills accumulation. This trade-off, one may well recall, resembles the canonical neoclassical trade-off between current consumption and savings. Just as higher savings in the present will allow for future capital accumulation (assuming full employment of factors and savings being automatically converted into investments) and hence greater utility levels in the future, higher human capital accumulation in the present will allow for future higher productivity and again greater utility. And just as capital accumulation features diminishing returns, so human capital accumulation does⁶.

Perhaps more important is the division Lucas (1988) make between human capital’s internal and external effect. The former impacts solely the individual’s productivity, while the latter impacts on the productivity of all factors of production – there is a positive externality. An individual does not take into account this ‘spillover effect’ when deciding how to allocate his time between current production and human capital accumulation. Lucas (1988) perceives knowledge as being embodied within human capital, so that knowledge spillovers depend on direct human interaction. Models following this line usually treat human capital as a key input into the creation of knowledge and, therefore, economic growth. Hence, spurring human capital formation will promote growth directly, as knowledge creation and human capital accumulation are insinuated to be indiscernible. By focusing on the individual level (human capital) and overlooking firms as the key agents in the creation of knowledge, this strand of the literature has managed once again to work within the Marshallian device of perfect competition and external economies. Indeed, models following this Lucas approach will typically present firms operating under constant returns to scale.

⁶According to Lucas (1988), this can be observed on an individual’s behaviour: people usually accumulate human capital quickly in early life, and then this pace diminishes markedly. Another way to put it is to state that the returns of the (marginal) increments of human capital fall with time.

At this point it is useful to distinguish two commonly conflated concepts, knowledge and human capital. Indeed, in many occasions the literature on endogenous growth employs them interchangeably. Romer (1990a, 1994), however, emphasizes the differences between the two, in what I believe is an appropriate exposition. Human capital is a rival good, as is by definition tied to a physical object (the human body) and finite (when a staff leaves a firm, he carries away his skills). Hence, human capital, contrariwise to knowledge, features positive marginal costs (there are costs involved in training a second or n^{th} person). Knowledge, on the other hand, is independent of any physical object, and has zero costs of replication. In other words, a given design or blueprint is non-rival, but the ability to add it continuously is not.

Each of these three strands can be regarded as part of the broad category of the NGT, each emphasizing different feasible causal mechanisms between agents' decisions, knowledge accumulation and economic growth. Needless to say, each of these three strands is heterogeneous, and could be further divided. Having said that, it may be purposeful to highlight some key issues that pervade NGT as a whole.

As advanced above, knowledge is a core concept⁷ in this broad body of literature. The defining features of knowledge, according to Romer (1990b, 1994), are twofold: firstly, it is a non-rival good. This very particular characteristic guarantees that it can be simultaneously used in many activities; it does not wear out nor suffers from congestion like other rival goods (such as physical capital). Therefore, knowledge can be used repeatedly, so the replication of a given production process can take place without any additional costs. As a consequence, knowledge has the ability to yield increasing marginal returns, in instead of decreasing returns like physical capital. These features explain the increasing returns to scale on production of the final output, as the output will be increased more than the proportional increase in all inputs.

Secondly, knowledge is understood to present positive externalities (knowledge spillovers) to other firms, as it is not perfectly excludable. Each firm will benefit from the whole industry's provision and investments in knowledge. From this characterization a new problem arises: framed within neoclassical lenses, the private marginal product of investing in knowledge is inferior to the social marginal product. In other words, as the benefits of investing in

⁷ Although not properly conceptualized. Suffice to note that often the literature do not distinguish concepts such as knowledge, information, learning and human capital.

knowledge are not fully excludable, the market prices for technology do not reflect its marginal productivity. That is a crucial problem for the neoclassical value theory, because the marginal product of an input will not be equal to its remuneration. Or, to put it differently, ‘if all inputs were paid their value marginal product, the firm would suffer losses’ (Romer, 1990b: p.76). This characterisation is present in Romer’s later studies (most incisively in his 1994 paper, perhaps), and marks his departure from his previous work (1986) based on the Marshallian hypothesis of solely external economies. It follows that, by placing knowledge⁸ and (internal) increasing returns at the centre of economic growth, firms must have market power, i.e., one must leave the world of perfect competition and work with monopolistic competition⁹ as a feature, not a bug of a market economy. That is a problem Solow did not have to deal with, as knowledge was understood as a public good, exogenously available for all. Endogenous models, on the other hand, must explain technological change - the same technological opportunities are *not* available for all countries.

The introduction of increasing returns, however, invites another problem for endogenous growth theorists. The economy must have an upper bound on its growth rate, otherwise it would grow endlessly. This is provided by the function responsible for the production of knowledge: whereas the neoclassical assumption of diminishing returns is dropped at the level of the production of output, it re-appears at the level of the production of knowledge itself. Knowledge is produced by research technology, which in turn features decreasing returns. As seen before, the same applies for human capital: in spite of its ‘external effect’, it features diminishing returns.

Perhaps the main consequence of this characterization of endogenous models is a critique to the so-called convergence theory: the levels of per capita output in different countries are likely to never converge, because countries featuring lower K/L ratios may grow slower than countries featuring a high ratio. In the proposed models, per capita output can grow without bound¹⁰, and the rate of return on capital (profits) may increase over time even with increases in the (physical) capital stock. Convergence can only exist as a consequence of the diffusion

⁸ Fine & Dimakou (2016) calls attention to the particular (neoclassical) treatment knowledge receive: it is assumed to be simply new input, ‘accumulable’, quantifiable, and measurable, ready to enter an aggregate production function.

⁹ Indeed, with the privilege of hindsight, Romer (1994) criticizes his first model (Romer, 1986) for working within the paradigms of perfect competition and firms as price-takers. His understanding of the nature of knowledge, back then, was more in line with a public good rather than a club good (non-rival and (at least partially) excludable).

¹⁰ As long as the economy keep generating new knowledge.

of knowledge; poor countries must seek to close the ‘technological gap’ if they are to succeed in a catching-up process.

Interestingly enough, the adoption of the idea of human capital as an input in a typical neoclassical aggregate production function, following Lucas (1988), has allowed proponents of the old Solow growth model to re-state their thesis. Indeed, the work by Mankiw et al (1992) assumes the same technology for every country but include a human capital variable together with physical capital and labour, giving the weight of one-third to each factor. Their cross-country results, then, seem to vindicate the Solow-convergence story.

In spite of the sharp criticism on the exogenous growth theory, NGT have left untouched the idea of a steady state and balanced growth, which is, expectedly, determined solely by supply-side factors. Hence, while actual historical experience tells us growth is unbalanced, this fact is not incorporated into endogenous growth models (Fine and Dimakou, 2016). Moreover, NGT continued and even introduced more of the neoclassical technical apparatus into growth theories: following the rational expectations ‘revolution’, the models envisaged (Romer, 1986, 1990a) fully specify a dynamic equilibrium, featuring micro-foundations: agents are profit-maximizing, forward looking, inter-temporally maximizing their utilities function. In fact, this is one of the key features Romer (1990a) calls attention to: technical change is the result of *intentional* actions taken by individuals *following market incentives*, the result of attempts of private firms to make a larger profit. This is a main critique the pioneering work by Arrow (1962) suffers in Romer’s (1990a) second model: according to the author, the original idea of ‘learning by doing’ rests on the assumption that increases in capital will lead to a proportional increase in knowledge, so the latter is an *unintentional side-effect* of the production of a conventional good. The second type of endogenous models, like in Romer (1990a) and Aghion and Howitt (1992), introduce firms making intentional investments in R&D. By doing so, technical change is fully endogeneized, at least from a supply-side perspective. What was just a residual in Solow’s model now becomes a core variable of the model.

Finally, in terms of policy prescription, it’s important to notice a wider scope for government intervention: due to the nature of knowledge, governments must deal with the free-riding problem on knowledge provision. Governments are called in to provide subsidies on both basic and applied research (Romer, 1994), and models based on learning by doing can even

justify industrial policies in the form of ‘picking the winners’ (subsidies on the production of high-learning goods) (Lucas, 1988)¹¹. Subsidies on human capital are also encouraged, as well as policies aiming at fostering the diffusion of the external effect of human capital, usually associated with the design and structure of urban agglomerations (a point which will be developed subsequently).

Evolutionary economists, however, like Nelson (1997), tend to be more critical on the NGT. Firstly, Nelson (1997) argues that the core ‘novelties’ of the new growth theory are actually old and well-known ideas: technical change as an endogenous process, knowledge as not perfectly excludable, imperfect competition, technical change-led growth involving externalities and economies of scale are ideas put forward during the 1950s and 1960s (or even before). Secondly, and in spite of incorporating the above points into formal modelling, new growth theory still neglects some key variables in understanding endogenous technical change: technical advancements are often path-dependent and uncertain; the *processes* involved in mastering and advancing technology must be comprehended; firms, with their singular management styles and organizational methods and strategies impact enormously the pace and *direction* of technical change, therefore their nature and capabilities must be scrutinized; and institutions, such as universities, the financial system and the legal framework of a country are also key determinants in technological advancements. Thirdly, and more crucially, according to the author the canons of the general equilibrium theory and the requirement of formal theories along those lines constitute hefty burdens to be overcome if one aims at having a thorough understanding of technical change and economic growth. Perhaps equally critical is the omission of a coherent price theory: the presence of externalities and increasing returns lasting throughout the long-run (indefinitely) implies rational, self-interested agents cannot set their prices in an optimizing fashion, unless they are able to perfectly discount these effects (Fine and Dimakou, 2016).

¹¹ After laying down the justification for government intervention in this realm, Lucas (1988: p.31) simply dismiss it in one single sentence: ‘In the model, ‘picking winners’ is easy. If only it were so in reality!’ He does not extend his reasoning, unfortunately, but one may well assume he is referring to ‘political economy’ problems related to rent-seeking.

2.2.2) Regional endogenous growth and the New economics of urban and regional growth (Urban economics)

Considering the manner in which NGT theorizes knowledge creation and accumulation, as seen above, a connection between endogenous growth and its application at the local level becomes fairly conceivable. The first one to overtly suggest that growth, when framed from the mainstream endogenous perspective, should be studied primarily at the city level, was Lucas (1988), following his assertion on the importance of human capital. If the latter, and in particular its ‘external effects’, are the paramount mechanism in driving growth, the logical next step is to understand the actual scope of those effects. Human capital external effects assume that the average skill level of a group of people will affect an individual’s productivity, given the positive spillovers associated. But how far do spillovers spill? For Lucas (1988), human beings are the carriers of knowledge, so direct human interaction will be the mechanism responsible for spreading knowledge to others. Direct human interaction, in turn, requires proximity, meaning that knowledge spillovers are most likely to be geographically bounded in areas of high human density.

Building on the work of urban studies specialist Jane Jacobs, Lucas (1988) focus on the city-level. It is argued that the great American cities and metropolises have been intense centres for exchange of ideas for many decades, the heart of the American prosperity. From an economist perspective, the key question is to explain how cities, in spite of usual more expensive factors of production and costs in general, are and maintain their attractiveness for firms and people. For Lucas people end up paying more to actually live close to each other, the reason being that each individual can benefit from the high(er) level of human capital from others.

Glaeser (1999) offers one possible formalization of the insight on the role of external human capital effects. For the scholar, the primary role of cities is to allow for learning opportunities. According to this view, denser urban agglomerations will provide a higher likelihood for direct human interaction, and interactions (meeting between workers) enable new learning opportunities. The model developed is quite straight-forward: human capital accumulation (the general level of skills) is a function of learning by imitation (‘learning by seeing’). Skill accumulation takes place via imitation and learning from more skilled neighbours in a particular industry (skills are industry-specific). The overall speed of learning, in turn, is a

function of the number of contacts made by individuals, and the latter is a function of the density of human agglomerations. It follows logically that urban agglomerations – cities – are catalysts of learning¹² and thence economic growth. Moreover, cities typically encompass a large array of distinct skills, empowering individuals with wider learning opportunities and also chances to specialize. Cities, and not the nation-state or the global economy, are the most adequate scale for scrutinizing informal learning from social and business contacts.

The literature on Urban Economics¹³ produced a number of empirical papers aiming at validating some of its main theoretical tenets. Rauch (1993) conducts a study on American metropolitan areas, and concludes that the average level of human capital (modelled as a site characteristic) within a city performs a role of a sort of productive local public good, influencing productivity indirectly through its effect on sharing of ideas. Glaeser et al (1995) study further corroborates with the idea that positive spillovers generated by schooling, particularly prevalent in cities, produce positive and significant influence on city growth. Furthermore, Feldman and Audretsch (1999) confirm the concentration of innovative activities in urban areas. Focusing on rural-urban wage differentials, Mare and Glaeser (2001) found that migrants experience fast wage growth *over time*, and not *immediately* when they arrive in cities. This evidence is used to attest the existence of gradual learning effects in cities.

Another manner of empirically testing concepts related to urban positive externalities is to try to tease out which type of knowledge spillovers is stronger and more conducive to innovation and growth. In spite of the general consensus in the literature on the importance of localized knowledge spillovers, there are, theoretically, different ways of engendering them. Glaeser et al (1992) accomplishes an important contribution in this regard. The authors endeavoured to formalise and test three distinct interpretations of endogenous regional growth, each reflecting three different types of knowledge spillovers and sources of externalities: the Marshall-Arrow-Romer (MAR) approach, the Porter approach, and the Jacobs approach (Glaeser et al, 1992)¹⁴.

¹² The worker considered in the model has already received formal training (i.e., formal schooling)

¹³ Also referred to as ‘The New Economics of Urban and Regional Growth’ or ‘Endogenous Regional Growth’

¹⁴ These three approaches were titled originally by Glaeser et al (1992), and not by Marshall, Arrow, Romer, Porter and Jacobs themselves. The following paragraph will explain the characteristics of the approaches, based, thus, on the original work by Glaeser et al (1992)

In the MAR approach, knowledge spillovers take place within industries, via inter-firm labour mobility, inter-firm workers interaction, and workers leaving companies to establish start-ups. Because of this characterization, the policy prescription based on MAR will call for higher concentration of an industry in an area (city-industry specialization) and cooperation/local monopoly, instead of competition, among companies. Here Glaeser et al (1992) is basically combining the idea of intra-firm learning-by-doing, intra-industry knowledge spillovers and monopolistic competition. The rationale against competition is that it decreases the appropriability of knowledge by firms, therefore reducing the incentive to invest in it. Monopoly power, on the other hand, allows externalities to be internalized by the innovator. The Porter approach shares the understanding of knowledge spillovers taking place within industries, thus calling for concentration as well. However, competition is perceived as a source of pressure to innovate and should be incentivized. For Porter, externalities are fostered in cities with geographically specialized, competitive industries. Finally, the Jacobs approach sustains that knowledge spillovers are mainly cross-industry. Hence, it is the cross-fertilization of ideas between industries that mostly impacts innovation and growth. It follows that diversification of industries in a given region is positive to local growth; local competition is also positive (like in Porter), as it speeds up the adoption of technology by different industries.

In their study, the unit of analysis is a specific industry in a specific city, so the research is a cross-section of city-industries. The results tended to support that both more competition and higher variety of industries in a city lead to higher growth rates. City-industrial concentration (specialization), on the other hand, is found to lead to slower growth. Hence, their results are in line with the Jacobs approach.

Given their results, the MAR-type of externalities is refuted as main sources of local growth. But if that is the case, as Glaeser et al (1992) readily admit, one is left without an explanation for the actual observed patterns of *city-industry specialization*, undoubtedly witnessed in many countries. The authors, then, point out to the existence of other externalities not tested in their study. Their interpretation is that externalities in the form of ‘localization economies’ may explain why firms agglomerate (locate together). These ‘localization economies’, already teased out by Alfred Marshall, were formalized by the New Economic Geography (NEG) literature, which emerged roughly at the same time as the Urban Economics approach. As it will be seen later, NEG focus on the ‘pecuniary’ forms of externalities (contrariwise to

intangible forms of externalities, i.e., knowledge/learning), namely, common labour markets and common suppliers of inputs and demand for goods. For Glaeser et al (1992) these sources might be important in early stages of urban growth and industry development. As cities and industry mature, however, these effects cease to influence growth and just explain the *previous patterns of localization*. Their paper aim at explaining city-industries *growth*, instead of simply dealing with the formation and location of cities (like in NEG)¹⁵.

After Glaeser et al's (1992) breakthrough study, several others followed, attempting to figure out whether specialization or diversification is more conducive to local economic growth. Beaudry and Schiffauerova (2009) provide a comprehensive review of the specialization versus diversity debate, and De Groot et al (2009) not only provides a thorough list of relevant studies but also conduct a meta-analysis of the literature. The general results are inconclusive, with variables such as sectorial, temporal and spatial heterogeneity all exerting effects on the results of the regressions run, so the context and specificities of each study play a pivotal role¹⁶.

An attempt to assess empirically the importance of knowledge spillovers in tandem with other sources of agglomeration economies in the American manufacturing sector is conducted by Ellison et al (2010). The results point out that all the three Marshallian forces are important sources of manufacturing agglomeration, but the input-output factor (agglomeration economies arising from common suppliers of inputs and source of demand) presents the strongest effect, followed by labour pooling ('thick' labour markets). Knowledge spillovers present positive and significant results, but are less important than the previous two sources. The three sources taken together are found to be very significant and thus provide strong support for Marshallian theories of agglomeration.

The study above suggests that manufacturing is more dependable on the reduction of transportation costs related to goods – the mirror result of manufacturing benefiting more from the input-output factor (a result closely related to the NEG, which will be presented

¹⁵ We still may point out some methodological caveats of Glaeser et al (1992) study: the production function they employ abstracts from capital inputs, so it may not capture labour-saving technological innovations and/or innovations resulting in further accumulation of physical capital. Furthermore, they assume knowledge spillovers are constant along time. One may argue, justifiably, that industries face a life cycle, with externalities being more important at early stages.

¹⁶ In light of these inconclusive results, economic geographers attempted to go beyond the simple specialization versus diversification debate, coining the concept of 'related variety'. See Frenken et al (2007) and Boschma and Frenken (2011).

next). However, other economic sectors, such services, might exhibit distinct characteristics. For Glaeser (2010), services have as a hallmark the sort of person-to-person delivery, the need of face-to-face contact in order to a transaction to materialize. In this sense, the sort of input-output agglomeration economies might not be so beneficial for this sector. Contrariwise, proximity with its customers might be more important. Indeed, services are more prone to cluster near customers, reducing their travel costs. It follows that services tend to remain more urbanized than manufacturing, as the latter may be displaced to less dense areas as long as lower transportation costs offset their relocation. To put it differently, the massive reduction of transportation costs in the last decades has been translated into manufacturing moving away from older urban agglomerations, but this effect is not observed in the services sector, because of the requirement of proximity with clients. Consequently, services are less agglomerated but more urbanized than manufacturing; ‘the higher transport costs involved in face- to- face delivery tie services to dense urban areas’ Glaeser (2010: p.8) concludes.

Another topic explored by the Urban Economics literature concerns the internal organization and spatial structure of a city. If a particular spatial configuration of a city increases the likelihood of more direct human contacts, it will bring about faster economic growth, due to externalities in human capital. This strand of the literature, thus, usually scrutinises patterns of spatial differentiation within a city and how it affects (and is affected by) human capital spillovers.

As an example, Durlauf (1994) and Benabou (1994) delve upon the reasons of persistent spatial income inequalities within a city. The idea put forward is that ‘strong *neighbourhood* spillovers effects exist in the transmission of economic status across generations’ (Durlauf, 1994: p.836, emphasis added). Here, the unit of analysis scales down, and individuals benefit from knowledge spillovers only when they are in the same neighbourhood. Hence, the expected income of a new-born responds positively for the neighbourhood income. Given initial conditions marked by spatial stratification, wealthy neighbourhoods will allow parents to transmit their economic affluence to their children, through several channels: public expenditure on education (when funded primarily by local revenues¹⁷), peer group contacts acquired in school, which will determine the number and quality of labour market connections one establishes (Durlauf, 1994) and the ownership of key assets, in particular real estate

¹⁷ It is not a big stretch to infer that proposals of fiscal decentralization (to be discussed in chapter four), in the tradition of Tiebout (1956), may reinforce patterns of spatial income inequalities.

(Benabou, 1994). The patterns of spatial segregation and disparities in income are reinforced overtime, as wealthier areas will enjoy higher learning spillovers, and the poor will be prevented (due to high real estate prices, for instance) to join more affluent areas.

The model in Glaeser (1999), discussed previously, can be framed through the perspective of the spatial allocation of skilled and unskilled workers within a city. The model predicts that a spatial configuration in which the unskilled workers dwell in the outskirts of the city is economically valuable for the city as whole. As economic growth is envisioned to be spurred by a higher number of contacts between skilled workers, the city centre should be occupied by skilled workers, which are more prone to engage in learning. The unskilled workers will just create congestion. Interestingly enough, an economic rationale for keeping unskilled and older workers far away from a vibrant and thriving city centre (and imposing higher commuting costs on them) is provided¹⁸.

Lucas and Rossi-Hansberg (2002), in their turn, aim to scrutinize how the internal structure of a city (different land-use patterns) is shaped. It is modelled a production externality in which firms' productivity is higher the higher is the employment in neighbouring areas. Moreover, workers' commuting costs within the city are included, so both forces work as agglomeration incentives to drag employment and residential housing together, towards the city centre. If commuting costs are too high people will, voluntarily, live near to where they work, in a result resembling a sort of local autarchy. Lower commuting costs, contrariwise, lead to land specialization, with business flocking at the city centre and workers residing outside of it. In the limit case, where commuting costs equal to zero, the city centre concentrates all the firms and is surrounded by residential rings¹⁹. Brinkman (2016) extends this model by adding an endogenous congestion externality variable. Therefore, there are two offsetting externalities at work simultaneously, a negative congestion externality and a positive agglomeration externality, and both are related to the clustering of employment in urban areas (and in particular at the city centre).

¹⁸ The model by Benabou (1994), on the other hand, predicts that in the long-run segregation will undermine economic growth in the city as whole, even for wealthier neighbourhoods.

¹⁹ It is important to note that, in spite of the key role of land in the model, land ownership plays no role – it is assumed land is owned by absentee landlords. That stands in sharp contrast with the model of intra-city inequalities developed by Benabou (1994), in which land ownership plays an essential role in explaining the persistence of segregation within cities.

In spite of the flourishing number of publications and even a relevant influence on policy-making, the Urban Economics literature is not without caveats and shortcomings. One cannot lose sight that this body of work, in spite of ramifications and internal debates, is to a great extent simply the application of Lucas's (1988) insight on the geographical scope of human capital spillovers. As such, one may well place the discussion presented so far under the old Marshallian explanation of agglomeration economies, uniting perfect competition as the standard market structure and increasing returns to scale which are external to the firm. Hence, the above formalisation of human capital externalities in cities by Glaeser (1999), for instance, works with the implicit idea of perfect competition. Firms 'possess constant returns to scale' (1999: p.265) and it is stated that 'workers in any locale are paid their marginal product' (p.259). It is possible to ally perfect competition and human capital externalities by assuming that the 'learner' pays a fraction of the benefits acquired to the person who enabled the learning. This process takes place within firms – the 'payment' comes about by younger/unskilled workers accepting lower (real) wages. In other words, here the 'external human capital effect' is not only industry-specific, but, in order for the model to be theoretically coherent, it must be firm-specific²⁰. Likewise, in Lucas and Rossi-Hansberg (2002) it is important to note that the model assumes the existence of only one good, sold at competitive prices - prices are given, as the city is situated within a larger national economy - and the technology in case features constant returns to scale.

The theoretical dependency on Marshall's external information spillovers hypothesis also has circumscribed much of the empirical research conducted by the literature. While a main concern of the literature is on the sources of urban growth and agglomerations, external increasing returns involving common labour markets and common suppliers and local markets for final goods are often ignored in most of the studies. Only few studies attempt to unity all the three Marshallian sources of agglomeration together. Ellison et al (2010), reviewed above, and Martin and Ottaviano (1999) are pleasant exceptions, in their attempt to include mechanisms commonly emphasized by the NEG tradition (even if the results of the latter study are not surprising²¹).

²⁰ And hence the answer for the question 'how far do spillovers spill?' is: not much far, actually. It stays within the boundaries of the firm. But if that is the case, the whole justification for urban agglomerations is unduly, as the positive externalities are actually bounded by the firm-level, and not the city-level. That seems to me a theoretical inconsistency.

²¹ When knowledge spillovers are global economic geography does not influence growth, and when the spillovers are local geographical concentration tends to favour growth.

Another way in which the reliance on external economies shapes the direction of the Urban Economics research is on ruling out, from the onset, the existence of internal increasing returns. For instance, in Glaeser et al (1992) it is alluded that tangible externalities (involving goods and labour markets) may explain city specialization, and the pattern of city-industry location, but not growth (to be understood by knowledge spillovers). However, by following the original idea of Smith on internal increasing returns and the deepening of the division of labour, one would expect that city-specialization would lead to productivity gains, therefore, also explaining growth to some extent. The point here is that, by following Marshall, the literature simply rules out this possibility.

The attentive reader certainly has noticed a lack of theoretical clarity involving some key concepts. More often than not, information, knowledge and human capital (spillovers) are employed interchangeably, not to mention the vagueness of a core concept such as learning. A helpful exception is found in Feldman and Audretsch (1999), who states that whereas knowledge tends to be more tacit, highly contextual and even uncertain in nature, information may be perceived as codified (knowledge). From this distinction, it follows that information can be transmitted throughout large distances at low costs. Knowledge transmission, on the other hand, faces increased costs with distance. Thence, proximity, face-to-face interaction and frequent contact are important requirements for knowledge to actually spill over, in spite the rapid development of information and communication technologies (ICTs) in the past decades. Human capital and knowledge are better distinguished by Romer (1990a, 1994), as discussed before.

There also seems to be a need for further theoretical clarifications on the precise mechanisms which explain the geographical circumscription of knowledge spillovers (Roberts and Setterfield, 2010). The treatment of human capital externalities, following Lucas (1988) may not be automatically compatible with the theoretical tradition of R&D-based models, like in Romer (1990a) and Aghion and Howitt (1992). Undoubtedly, human capital will also play a role in the R&D-based models, to the extent that the R&D sector requires high-skilled workers. But it is this precise role and the mechanisms which need to be, theoretically, further elucidated. To highlight one example, the Lucasian tradition holds that it is the *average* level of human capital that appears to be important for knowledge spillovers. Romer's (1990a) model, however, implies that it is the *total stock* of human capital that matters. Izuchi (2008) is an attempt to clarify and further formalise the two traditions just mentioned, and it is

developed distinct models to test which specification might offer more statistical significance (with results being more favourable to the Lucasian tradition).

Finally, perhaps as a result of its attachment to formal full equilibrium models, the literature has often relied on overly aggregate-level data, even when focusing at cities. As Peck (2016) aptly notices, the theoretical edifice of this literature is built upon the same micro-foundations of other branches of economic orthodoxy, in a sort of ‘new genre of rational-choice urbanology’ (p.28). Consequently, the richness and complexity of urban areas are reduced to the utility-maximizing migration decisions (either within a city or from one city to another) of workers and households, and there is no systematic consideration of how firms, local governments, institutions and people *actually interact*, to generate city-specific patterns of growth, stratification and decline (Storper, 2011). This is tantamount to the elimination of any real discussion of the city, conceived as a meaningful unit of analysis. Acs and Sanders (2014) also indicate a certain omission of the literature on (local) institutions, organizations and entrepreneurial activities, variables which could certainly help to explain how new knowledge is created and diffused (locally). Moreover, in light of the existence of paramount regional sectorial and temporal heterogeneities (as alluded to by De Groot et al (2009) meta-analysis), generally the studies in case can only provide very broad insights on the importance of knowledge creation and accumulation at the local level. As Roberts and Setterfield (2010) encapsulates: ‘simple endogenous growth models are incapable of furnishing a proper understanding of the likely mosaic of regional growth patterns’ (p.443).

2.2.3) The New economic geography (NEG)

Following the incorporation of increasing returns to scale by mainstream economics, the so-called New Economic Geography (NEG) has come to life. If NGT basically formalised into full equilibrium models one of Marshall’s external economies of scale (knowledge spillovers), NEG decided to formalise the remaining two – common inputs for production and common labour markets. Moreover, and in contrast with the Lucasian approach to endogenous growth, NEG has at its core the employment of increasing returns at the firm level, and an ensuing market structure characterised by imperfect competition. In this sense, NEG models are simply a further application of the technical apparatus pioneered by Dixit and Stiglitz (1977), but with the addition of selected Marshallian external economies of scale. As its founding father (Krugman, 1998) has already remarked, NEG should be perceived more as a ‘genre’

(p.10), a style of economic analysis based on models which hallmarks are increasing returns to scale and imperfect competition. After industrial organization models (Dixit and Stiglitz, 1977), long-run growth models (Romer, 1990) and international trade models (Helpman and Krugman, 1987), this time those features were called into action in order to explain the spatial structure the economy.

It is well-known that within each country there are important regional variations in terms of manufacturing concentration, but up until the early 1990s *mainstream* economics had failed to incorporate this very basic fact into formal modelling. Krugman's (1991) initial model, hence, aimed at explaining why manufacturing becomes so concentrated in a handful of regions, while other regions remain mainly agrarian. On a theoretical level, then, it is necessary to explain what the forces behind the concentration of industrial activities are. Hence, Krugman (1991) turns to the Marshallian tradition on external economies and clustering, focusing primarily on the common inputs for production and common labour markets.

Regarding the first source of localization economies – supply of specialized inputs and goods - NEG models will typically go one step further than Marshall's original formulation and incorporate Hirschman's insight of backward and forward linkages. The establishment of a manufacturing firm, hence, not only induces the domestic supply of needed inputs, but it also creates new industrial linkages, by inducing its final production to be used not for final consumption, but as inputs in new activities. On the second source of localization economies (labour markets), Krugman (1991) works with the hypothesis of a 'home-market effect' (the larger the market is, the higher the real wages, attracting more workers to the region) and a 'price index effect' (higher manufacturing production means relatively lower prices for the manufactured goods, due to the exploitation of plant-level increasing returns, attracting, thus, more workers). Both effects work toward the concentration of manufacturing activities in one particular region. In spite of these two sources of agglomeration, there are also dispersion forces at work. Typically, higher transportation costs behave like protectionist measures for local markets, favouring the dispersion of manufacturing activities in different areas. Moreover, labour markets may act as a centrifugal force as well, because the less severe competition for jobs in the regions featuring a smaller manufacturing labour share will attract more workers, counterbalancing the concentration forces described above.

Therefore, we have both backward and forward (demand and supply) linkages and ‘thick’ labour markets as the main sources of localized external increasing returns to scale, which will explain manufacturing concentration. Subsequently, if not consequently, Krugman (1991) incorporates the idea of ‘circular causation’ and positive feedbacks, already exposed by Gunnar Myrdal. A firm’s locational decision will be based on where the markets for its goods are, so a region featuring large nearby demand will be the chosen one, as this decision minimizes transportation costs. But this invites the question of where the demand is larger in first place. Given the Marshallian external economies and the industrial backward and forward linkages discussed above, it is implied that the manufacturing sector itself is a source of demand (intra-industrial demand), leading to a process of ‘circular causation’ in which concentrating production feed on itself.

Typically, NEG models will select one or two variables from the menu of centripetal and centrifugal forces. Whether or not manufacturing will concentrate in one region can only be resolved by the parameters of the model. Given the interplay of agglomeration and dispersion forces, one cannot say, *a priori*, that convergence (or divergence) is the likely outcome. What is important to highlight, nevertheless, is the existence of a ‘boundary’: a set of critical parameters marking the division between concentration and non-concentration of manufacturing activities. Hence, small changes in the parameters of the economy may have large effects on its qualitative behaviour. Not surprisingly, ‘core-periphery’ models are a popular theme within the NEG genre. This is sometimes referred to as the ‘bifurcation’ problem, easily recognized in the ‘tomahawk’ graphic (Krugman, 1998).

Besides the usual concern about the geographical distribution of manufacturing activities, NEG has also unfolded into an auxiliary line, which has as its main theme the formation and location of cities, sometimes referred to as the ‘urban and regional systems’ literature. The parallel with the NGT literature and its regional spin-off is noteworthy: both bodies of theory were initially formulated at a more aggregate level, and then switched their attention to the urban or city level.

For Krugman (1993b), initially the so-called ‘first nature advantages’ – favourable physical geography and resource endowments, and beneficial historical accidents – may explain how a city is established and consolidated. Once, however, a city organizes itself as a central market, a transportation hub and a node of commerce, its strength feeds on itself. These ‘second

nature advantages' - the location of economic agents relative to others in space - reinforces the concentration of population and production, regardless of its initial advantages.

In this spirit, Krugman (1993a, 1993b) develops a model in which the formation of cities are explained by the interaction of firm-level increasing returns, imperfect competition in manufacturing and the process of cumulative causation. Due to forward and backward linkages and transport costs, firms will prefer to cluster together, and workers will choose to settle down in cities offering above-the-average real wages. Once a city starts to attract more firms and workers, cumulative causation sets in motion, reinforcing a city's initial advantages and thus increasingly concentrating both workers and firms.

The results of NEG's models will, typically, present multiple equilibria, this time reflected into a spatial structure. Initial concentration of manufacturing and higher degree of firm-level returns to scale in one city, and lower transportation costs will bring a tendency for a single urban centre to emerge. It is possible that a handful of relatively smaller cities emerge, but in this case they will be usually geographically far from each other. Hardly one will observe one large city close to the other, because the smaller one (even if slightly) will be under the 'agglomeration shadow' of the other. Finally, higher transportation costs mean it is more advantageous for firms to disperse from one single location in order to stay close to their final demand and rural markets. Of course, the larger the weight of manufactures in the local output, the stronger the self-reinforcing mechanisms are and, conversely, 'first nature advantages' become weaker in determining where manufacturing takes place²². In general, as Krugman (1993a) readily admits, these models are a formalisation of the 'central-place theory' tradition, first proposed by geographers working under the 'regional science' banner. The results in itself are not something exactly new, but its formalisation under the auspices of full-equilibrium micro-founded models are.

If one recalls the debate on regional endogenous growth applied to the city level, one may notice some complementarities and contrasts between these two approaches on city formation and growth. As suggested before when scrutinizing the work of Glaeser et al (1992), the literature formalizing knowledge spillovers as the key agglomeration source tends to focus

²² For a model dealing more specifically with the advantages of a city being a transportation hub – all interregional trade passing through a given city - and how these advantages spread over time even after the original source of agglomeration (the 'hub effect') fades away, see Fujita and Mori (1996).

more on the explanation of economic growth at the city level. Krugman's (1993a) critique on this treatment, however, is that it lacks a true spatial dimension: 'that is, they have nothing to say about why cities are where they are' (p.293). On the other hand, the NEG literature seems particularly keen on unveiling the determinants of the spatial distribution of cities, but has less to offer on intra-city economic issues and on the explanation of why two long-established cities grow at different rates²³. Of course, some authors attempted to ally the insights of the NGT/Urban Economics and NEG, under different models. Martin and Ottaviano (1999), as discussed previously, is a case in point. Fujita and Thisse (2003), in their turn, envisage a model uniting the core-periphery archetype of NEG's inspiration with the Romer (1990)-type of endogenous growth model, featuring a R&D sector and a growing variety of firms and goods.

With the privilege of hindsight, Krugman (2010) recognized that the distinctive aspects of NEG are: (i) its neoclassical technical apparatus, as the models developed are full general equilibrium and fully micro-founded: the geographical structure of the economy emerges from market decisions made by rational agents; economic outcomes can be represented as the equilibrium that results when maximizing individuals interact; (ii) agglomeration economies, the typical result of the model, are *derived* (from the interaction among economies of scale, transportation costs, and market size), rather than assumed, in a semi-disguised critique to regional endogenous growth models; (iii) apart from the external economies of scale, it is also implied the presence of increasing returns to scale at the plant level, with firms facing constant marginal costs (and not an upward curve, like in the case of perfect competition); (iv) there are multiple equilibria, i.e., more than one possible outcome - agglomeration does not necessarily happen, it depends on the parameters. One still could add a fifth (v) point, associated with the multiple equilibria arising from the 'tomahawk bifurcation', namely, path-dependence and locational hysteresis: Once a bifurcation point is passed and concentration occurs, it is not easily undone by a mere reversal of the underlying trends of parameters.

In spite of the popularity of the NEG genre (suffice to say the 2009 World Development Report, published annually by the World Bank, was centred on the NEG theoretical approach), the literature has been severely criticized by economists and geographers alike. NEG has been already accused of a lack of originality (Rosser, 2011); lack of a proper

²³ For a summary of these two views, see the Krugman-Henderson debate presented in Krugman (1996) and Henderson (1996).

understanding of actual firms and industry *per se* and their strategic interactions (Neary, 2001); neglect of key determinants of industrial agglomeration and local economic growth, such as local infrastructure, institutions, state intervention, (local) regulatory arrangements and the broad *socio-political embeddedness* of local economies (Martin, 1999; Scott, 2004); no mention to regional innovation systems and regional sources of competitive advantage (Scott, 2004); misrepresentations of analytical categories such as path-dependence (Martin, 1999); and the lack of consistent empirical validation (Redding, 2010).

In particular, geographers normally will be at odds with NEG's approach to concepts dear to geography, such as place, space and scale. For Martin (1999), NEG actually bypasses the study of 'real places' and actual geography. Often it is assumed that there are negligible differences of social, cultural, institutional and regulatory characteristics at the *regional* level²⁴; in other words, a lack of geography. The result is the study of imaginary, abstract places rather than real, particular places and their local specificities²⁵.

Accordingly, by not incorporating real places, NEG ends up treating geography simply as a 'uniform plain' (Sheppard, 2000: p.103). Indeed, NEG's inability to tackle the broad *socio-political embeddedness* of local economies, with their particular features and specificities, means that the literature is unable to scrutinize the actual mechanisms and processes, often place-specific, which ultimately determine the degree of the pecuniary externalities so dearly emphasised by the literature. As a result, the literature is usually oblivious to local contexts, and as such has almost nothing to say about regions (however defined) as an engine (as opposed to a receptacle) of economic growth (Scott, 2004). The models developed are often black boxes, concealing what normally would be, in the eyes of a geographic reading, the most important aspects of regional economic growth.

Perhaps all of the above criticisms may be framed through a more fundamental trouble involving NEG: its methods. One of the key hallmarks of NEG, as admitted by Krugman himself, is the application of microeconomic principles of individual maximization to a 'geographical' setting. Mainstream economics' urge for highly abstract and formal

²⁴ Often leading to the prediction of regional *conditional* convergence, like in Barro & Sala-i-Martin (1995). Or, alternatively, to put it into a typical aggregate production function view: 'What is the difference between regions and countries? One answer is that factors of production are far less mobile between countries than between regions of the same country' (Krugman, 1998: p.14).

²⁵ For a presentation and debate on the differences between the concepts of 'space' and 'place', see the work of geographer Tim Cresswell (2004), especially chapters one and two.

mathematical models, it turns out, may end up crowding out the richness of local geographies from NEG's reasoning and may not be adequate to deal with the spatiality of the economy (Fine, 2010; Martin, 1999). This methodological critique can be apprehended by a broader assessment on the expansion of the mainstream economics – and in particular its methods - towards others social sciences. Fine (2010) recalls how the application of those methods has been swelling recently, toward many areas of the human knowledge outside of economics. This movement, of understanding complex social, political, historical and geographical phenomena through the lenses of the mainstream economics' 'technical apparatus' is dubbed, then, 'economic imperialism', i.e., 'the colonisation of the other social sciences by economics' (Fine, 2010: p.16). The consequence of this movement is the reduction of systemic and complex factors to the level of the individual behaviour, which can always be understood – and formalised into a set of equations – by means of dynamic optimisation undertaken by self-interest atomized agents. Consequently, the 'non-economic' (social, political, geographical) variables are deemed to be theorized just as 'economic' factors are. Not surprisingly, hence, geographers will be shocked with NEG's omission of the relevant (i.e., economic geography) literature and the omission of 'real places'.

That said, Krugman also has agreed with some of the existent criticism and acknowledged others. The scholar (Krugman, 2010) puts bluntly that:

'there's no question that in an effort to satisfy largely academic criteria – the desire to derive everything from first principles, the desire to pull analytical rabbits out of hats – the new economic geography, at least in its early incarnations, adopted an approach that in many ways seems more suited to the economy of 1900 than to that of 2010' (p.3)

And later admits that 'the new economic geography was designed to attract the attention of mainstream economists' (p.4) and that the leading scholars of the genre normally are not aware of the literature produced by actual geographers: 'I and my colleagues definitely read too little by people from outside our tribe, and should look over the fence more often' (p.7).

2.3) The Kaldorian and heterodox view on economic growth

2.3.1) Introduction: increasing returns in the heterodox tradition

The developments of the mainstream endogenous growth theories, and its ramifications, have been successful, and catchphrases such as 'knowledge-driven economy' have become

widespread. Yet, an alternative interpretation of the importance of increasing returns to scale and endogenous technical change may be provided by different authors, for whom the standard mainstream reading is perceived as flawed.

One might well come back to Adam Smith and re-assess the interpretation the classical economist gave to the notion of division of labour. What the mainstream literature often emphasizes is the so-called ‘final product specialization’ (Ho, 2016). Given an increased specialization in one particular final good, it follows that it becomes more worthy for each agent to produce only what he or she does more efficiently and then exchange, presumably via markets, the surplus produced for other consumption goods produced elsewhere. From a static resources allocation perspective, and, quite anachronistically, assuming constant returns to scale (and full employment of factors), free exchange (trade) becomes mutually beneficial. The take away message is the very familiar preposition that free trade benefits everyone and should be pursued by every single country.

Ho (2016) aims to retrieve, however, a second type of division of labour, already present in Smith. Dubbed by Ho (2016) ‘division of production-operations type’, it refers to the typical situation in which the division of labour can only materialize at the economy-level, customarily related to great manufactures. In such manufactures, ‘therefore, the work may really be divided into a much greater number of parts, than in those of a more trifling nature, the division is not near so obvious, and has accordingly been much less observed’ (Smith, 1776 as cited by Ho, 2016: p.917).

For Smith, Ho (2016) argues, the production of a given final (manufactured) good is the result of the combined labour of a multitude of workers, who are spread and employed in different (sub) sectors of the economy, from the production and extraction of simple raw materials to the production of tools and machinery and even the means of transportation employed in the whole productive process. Smith does not fully develop this line of argument, which would be then picked by Young (1928), but the general idea, as interpreted by Ho (2016) is one of a continual unfolding and extension of the process of division of labour involving distinct segments of the national economy. This continuous development results in a spur to productivity and economic progress.

The starting point of Young's (1928) analysis is Smith's dictum that 'the division of labour depends upon the extent of the market'. But Young is not chiefly concerned with the division of labour of the final goods produced by a single firm, nor with increasing returns accrued at the firm-level. In fact, the author believes such a narrow focus may even be misleading. For him (Young, 1928), it is necessary to look at *large production*, the 'manufacturing industry taken as whole' (p.528). By focusing at the firm-level, even if at large-scale production (production by large *individual* firms or industries), one may actually miss the phenomenon of increasing returns. That happens because the latter manifests itself mainly through the so-called economies of roundaboutness, or indirect methods of production. The key task for the scholar (Young, 1928), thus, is to scrutinize the growth of indirect or roundabout methods of production and the division of labour *among* industries, as the increased division of labour gives rise to 'an increasingly intricate nexus of specialised undertakings [that] has inserted itself between the producer of raw materials and the consumer of the final product' (p.538).

Increasing returns, therefore, cannot be grasped as a firm-level phenomenon, nor even as an industry-level one. Rather, it is an inter-industrial phenomenon, due to the progressive division and specialization of industries. These movements entail an increasing extension of the roundaboutness of production. In other words, indirect methods of production emerge as a result of the continuous division and specialization of industries, allowing the whole manufacturing sector, taken as a whole, to benefit.

Pivotal to Young is that, amid this process, new industries, previously inexistent, are created; current scientific knowledge is applied and adopted by industry, and innovations are brought to life. The division of labour, as first demonstrated by Smith, has in its essence the transformation of complex processes into simpler tasks, rendering (at least some of these tasks) the use specific machinery. The process of division of labour, thus, fosters the adoption and use of machinery (the adoption of indirect processes, previously used in different tasks, and also implements to be used directly at the new task) in addition to the creation of (new) machinery designed specifically to the new task. In other words, an increased division of labour will create demand for the production of specialized products and appliances to be used within the productive process. Specialized tools and machinery, then, in tandem with ancillary industries, spring up in the process of industrial development. Whether or not such adoptions, implements, and new machinery will be actually employed will depend, once again, on the size of the market for them. Industrial differentiation and inter-industrial demand,

therefore, gain a special importance in the Youngian framework, because often one manufacturer may supply distinct final industries. In the author's (Young, 1928) words:

‘if the benefits and costs of using such appliances are spread over a relatively large volume of final products, their technical effectiveness is a larger factor in determining whether it is profitable to use them...’ (p.530)

Up to now, one could justifiably state that Young was simply following the Marshallian notion of external economies, manifested by the existence of specialized suppliers and the sharing of common ideas among firms and industries. In fact, Young (1928) opens his paper stating that Marshall's distinction between internal and external economies is ‘useful’, and is ‘a safeguard against the common error of assuming that wherever increasing returns operate there is necessarily an effective tendency towards monopoly’ (p.527). Moreover, some passages seem to render the contemporary mainstream interpretation of increasing returns to scale very consistent to Young himself. The author (Young, 1928) makes it clear that any firm, or plant, faces physical limits in accruing internal economies of scale:

‘in most industries there are effective, though elastic, limits to the economical size of the individual firm. The output of the individual firm is generally a relatively small proportion of the aggregate output of an industry’ (p.539).

It follows that it becomes more difficult to realize increasing returns by making its own operations more roundabout, but it becomes perfectly feasible by taking the industry as whole. This line of reasoning resonates quite well with the more contemporary formulations of mainstream endogenous growth theories, in which the chief form of manifestation of increasing returns are external to the firm (and not even tangible) and to some extent NEG's focus on pecuniary externalities accrued by manufacturing firms.

According to McCombie (2002), a leading heterodox economist, given Young's focus on increasing returns as essentially a macroeconomic phenomenon, arising from the increasing specialisation between firms, the emergence of new subsidiary industries and new processes, a feasible interpretation is that as the industry continues to grow, more specialised firms enter, increasing the competition in each (new or existent) sector. It is possible, then, to maintain perfect competition and increasing returns via externalities²⁶.

²⁶ To quote McCombie (2002) himself: ‘Young attempted to rescue the concept of perfect competition by postulating that increasing returns were external to the firm’ (p.75)

In fact, for Romer (1986), Young simply tried to give Marshall a ‘consistent, competitive equilibrium interpretation’ (p.1004). Due to Young’s verbal exposition and the lack of techniques in devising dynamic models at the time, the argument goes, no formal model ensued. In his next model, however, Romer (1990a) can be said to provide yet another possible formalization of Young’s insights²⁷. Here Romer abandons the perfect competition hypothesis and applies the Dixit and Stiglitz (1977) ‘love of variety’ model of imperfect competition. Romer (1990a) incorporated a class of intermediate inputs, whose production features increasing returns and whose types (varieties) may grow indefinitely. Hence, the class of intermediate goods captures the degree of specialization of the economy: the greater the varieties supplied, the greater the division of labour in the economy. The possibility of *continuous specialization* (introduction of new types of intermediate inputs) is guaranteed by the expansion of the total output (the extent of the market), which enables new firms to join production and thus a larger variety to be produced. Following Dixit and Stiglitz (1977), the free-entry condition brings profits down and firms end up accruing zero profits intertemporarily (in present value).

It is important to discuss Romer’s (1990a) application of the Dixit and Stiglitz (1977) model because, according to some critics of the mainstream NGT (see Ho, 2016), Young’s original insight on increasing returns is supposedly not well represented in those mainstream models. Nevertheless, as just discussed, Romer (1990a) and his associates could well be perceived as scholars formalizing (at least partly) the Youngian insight of an increased variety of goods and diversification of intermediate products. Ho’s charge seems not fully-grounded.

To be sure, there is undeniable ambiguity in Young’s paper regarding his conceptualization of key ideas such as equilibrium and competition, and one may well interpret Young as being very critical to the neoclassical paradigm. Indeed, concerning Marshall’s distinction of internal and external economies, Young (1928) believes this is ‘necessarily a partial view’ (p.528) obscuring some important aspects of economic analysis. He continues by stating that, beyond the external economies, ‘new products are appearing, firms are assuming new tasks, and new industries are coming to being. In short, change in this external field is *qualitative* as well as quantitative’ (p.528, emphasis added). Precisely because of those continuous, qualitative changes, for Young (1928):

²⁷ This interpretation borrows partly from McCombie (2002)

‘no analysis of the forces making for economic equilibrium, forces which we might say are tangential at any moment of time, will serve to illuminate this field, for *movements away from equilibrium*, departures from previous trends, *are characteristics* of it’ (p.528, emphasis added)

Or, in another passage:

‘the *counter forces* which are continually defeating the forces which make for economic equilibrium are *more pervasive and more deeply rooted* in the constitution of the modern economic system than we commonly realise’ (p.533, emphasis added)

It becomes unequivocal the *dynamic* nature of the Youngian view of industrial development, marked by unending technical change and emergence of new firms and industries. Young seems to be actually making a frontal attack on the neoclassical equilibrium paradigm, on the grounds that the typical static neoclassical analysis of time could not properly capture an economic system which has as hallmarks the *continuous* emergence of new industries, new products, and the adoption and creation of scientific knowledge (which comes about endogenously, even though he does not employ this expression). In his own (Young, 1928) words:

‘the apparatus which economists have built up for the analysis of supply and demand in their relations to prices does not seem to be particularly helpful for the purposes of an inquiry into these broader aspects of increasing returns. In fact ... reliance upon it may divert attention to incidental or partial aspects of a process which ought to be seen as a whole’ (p.533).

This point is later on sharpened by Kaldor (1972). For the Cambridge economist, the whole paradigm of ‘equilibrium economics’ is a ‘major obstacle to the development of economics as a *science*’ (p.1237, original emphasis). Core assumptions like a constant and unchanging set of products and processes of production (production functions), perfect knowledge of all the relevant prices and perfect foresight are vital to achieving a final position of equilibrium. Under general equilibrium, markets adjustments take place either instantaneously (the processes are timeless) or have been perfectly foreseen by all the agents. To the extent that one assumption is relaxed (for instance, bounded rationality may be introduced) others must remain untouched. It is assumed, then, that the economy always reaches, or is relentlessly marching towards to, a state of ‘equilibrium’ (unchanging prices and quantities and production patterns over time).

For Kaldor, economics should be more about how markets *create* resources, rather than how to *allocate* them. The assumption of increasing returns, especially at the manufacturing sector, and the Youngian notion of continuous qualitative changes, progressive economy-wide division of labour and the increased roundaboutness of production ultimately questions the validity and meaningfulness of the notion of equilibrium. Here it might be advisable to quote Kaldor (1972) in full:

‘When every change in the use of resources – every reorganization of productive activities – creates the opportunity for a further change *which would not have existed otherwise*, the notion of an ‘optimum’ allocation of resources...becomes a meaningless and contradictory notion: the pattern of the use of resources at any one time can be no more than a link in the chain of an unending sequence and the very distinction, vital to equilibrium economics, between resource-creation and resource-allocation loses its validity. The whole view of the economic process as a medium for the ‘allocation of scarce means between alternative uses’ falls apart...’ (p.1245, original emphasis).

Kaldor’s (1972) own view on Young is that of a scholar clearly attacking the main tenets of general equilibrium theory already in its early days. That this fact has not been fully and correctly appreciated by many is because the general equilibrium theory itself was not fully developed and formalised back in the time Young was writing²⁸.

Another way in which Young’s paper appears to be very critical on core neoclassical assumptions, and even ahead of his time, is in its seeds of more contemporary notions of demand-led growth and cumulative causation. For Young (1928), ‘the enlarging of the market for any one commodity, produced under the conditions of increasing returns, generally has the net effect...of enlarging the market for other commodities’ (p.537). Those qualitative, continuing changes referred to previously, which are ‘permanent characteristics’ of the modern economic system, are said to ‘alter the conditions of industrial activity and initiate responses elsewhere...thus change becomes progressive and propagates itself in a cumulative way’ (p. 533). Young applies these proto-demand-led growth notions to explain why the USA’s industry seemed to overperform the traditional British industry in the early 20th century: the sheer size of America’s domestic market, unhampered by tariff barriers, argued Young, was responsible for the feasibility of the adoption of more advanced productive methods in the US rather than in the UK or elsewhere. So not only the division of labour depends on the extent of markets, as formulated by Smith, but also the extent of the market

²⁸ Recall that Arrow-Debreu’s formalization appeared only in 1954.

depends on the division of labour. As output grows (the extent of the market is magnified), greater scope for specialization (division of labour) and spurs in productivity follows, which will in turn further lead to output growth (expansion of the market). According to McCombie (2002), this insight ‘forms the heart of the cumulative causation model’ (p.67).

Young works with a loose idea that continuous interactions between the productive structure (supply-side) and the demand for commodities to spur economic activity. But there was no precise link between the effects of an ever evolving production side to the demand side, and vice-versa. For Kaldor (1972), that should not come as a surprise, given that he was writing before Keynes published his General Theory. What was missing in Young was precisely a theory of income generation, absent in the economic thinking of the time. Young, therefore, could not include unequivocal demand-led notions. For Kaldor, (induced) investments, in the Keynesian sense, is the missing link, notwithstanding Young’s idea of roundaboutness of production and its limitation by the extent of the market.

2.3.2) Kaldor: growth laws and cumulative causation

In tandem with his concerns on methodological issues, Kaldor’s conceptualization of increasing returns to scale has also contributed to his focus on economic growth itself (Kaldor, 1966). Manufacturing activities are reserved a special place in his thinking about growth, essentially due to its supposedly better capacity to realize the gains derived from increasing returns to scale.

Within the Kaldorian theoretical tradition, it is common to divide increasing returns into static and dynamic ones. The former focuses solely on the scale of production. As the scale increases, it leads to higher productivity, due to what Kaldor (1972) called the ‘the space principle’ (p.1253). The capacity of a given facility or a fixed asset (say, a pipeline) will increase more than proportionally than its additional costs, simply due to the three-dimensional nature of the space. Dynamic increasing returns to scale, on the other hand, trigger increases in the *rate* of productivity growth. While the static economies, referred to above, may increase only the *level* of the productivity and be theoretically reversible, the dynamic ones are supposed to be irreversible. Dynamic increasing returns arise mainly due to ‘leaning by doing’ and ‘induced’ technical change. Here it might be advisable a further consideration on these two causes.

Learning is understood as the product of experience in manufacturing industrial goods. As learning necessarily involves time, the acquisition of knowledge should be, accordingly, a function of *cumulative* experience. There are different manners of formalising this insight. In his famous paper Arrow (1962) considered learning as function of cumulative gross *investment*; Verdoorn (1949), on the other hand, worked with cumulative *output* (even if no additional investment takes place). The idea of ‘induced’ technical change brings back the Smith-Youngian conception that an increased division of labour transforms complex tasks into simpler ones, enabling some of them the aid and/or use of machinery. These machines could be either new ones, invented for specific purposes, or the adaptation of existing machinery to new ends. It is ‘induced’ in the sense that it is a previous deepening in the division of labour that allows the employment of more roundabout, capital-intensive techniques of production. What enables the actual employment of these more advanced techniques is the scale of production involved, or, to frame it through Smithian vocabulary, it will depend upon the extent of the market. One cannot conflate this notion with the neoclassical concept on ‘induced technical change’. The term suggests that technical change will emerge as the rational maximization response by firms to the relative scarcity of input factors. Amid the process of economic development and capital accumulation, the supply of capital will increase, bringing its price down. The interest rate-wages ratio decreases as a consequence, and firms actively seek to invent labour-saving, capital-intensive techniques, in order to economize the (relatively) expensive labour input²⁹. The Kaldorian approach, as seen before, is underpinned by the principles of division of labour and scale of production, not by the relative scarcities of capital and labour.

With that in mind, one can better comprehend Kaldor’s (1972) formulation of his concept of dynamic increasing returns. These are ‘steady and step-wise improvements in knowledge gained from experience’ (p.1253), as there is technical progress involved, and not simply the reflection of economies of large-scale production. Learning by doing and induced technical change (in the Kaldorian sense) are deeply intertwined, entailing increases in the *rate* of technical progress. The introduction of new techniques of production leads to the invention of further techniques, methods of production, and whatever implements may be suitable and profitable given the scale of production involved.

²⁹ For a comprehensive overview on the neoclassical approach to induced technical change, see Brugger & Gehrke (2016).

Contrariwise to the Marshallian tradition, it should be evident now, the relevant division here is not between internal and external increasing returns, but between static and dynamic ones. Increasing returns occurs at both the firm-level (the ‘space principle’, ‘learning by doing’ and technical change operates at the firm-level) and also at the inter-industrial level (there is inter-industrial learning, gains in the overall scale of production and diffusion of technical progress in the whole industrial system). Crucially, what matters is the dynamic (irreversible) nature of the changes in the *rate of growth of technical progress*. The inter-connections within the industrial productive system, of course, cause increasing returns to be a ‘macro-phenomenon’, and allows one industry to benefit from gains in productivity from the expansion of another industry, as the latter generates demand for the former. Increasing returns to scale, static and dynamic, underpins the so-called Kaldor’s growth laws.

Much of Kaldor’s thinking on economic growth can be summarized by three interconnected ‘growth laws’: the first growth law focus on the key role of the manufacturing sector as the ‘engine’ of economic growth: a higher rate of manufacturing output growth leads to a higher rate of overall output growth. An increase in manufacturing employment means that labour is being transferred from sectors characterized by disguised unemployment and diminishing returns (agriculture) to a sector characterized by increasing returns. The second law, also known as the Kaldor-Verdoorn Law (KV Law), stated that a higher rate of manufacturing output growth leads to higher rate of manufacturing productivity growth (technical change, thus, is endogenous, and depends ultimately on the rate of output growth). The third law, finally, states that a higher growth in manufacturing output leads to a higher growth of *overall* productivity - the growth of the manufacturing sector output is a net increment, not simply a relocation of labour from one sector into the other (the labour transfer from non-manufacturing sectors to manufacturing takes place without a loss of output in the former sectors). Dynamic increasing returns guarantees that technical progress originating in manufacturing spills over to other sectors (Thirlwall, 1983).

The KV Law, in particular, deserves a more nuanced scrutiny, as it is this law which makes growth an endogenous process in the Kaldorian tradition. In essence, it reverses the neoclassical causality between productivity and output. The neoclassical tradition holds that an increase in the productivity (usually measured by the TFP) will generate a higher output. Growth is supply-determined, and Keynesian considerations of unemployment of factors and

demand deficiency are overlooked. The KV Law assumes that demand conditions, epitomized by the growth of output, will determine the growth of productivity. In cases of sluggish demand, then, productivity growth is likely to slow down. The KV Law essentially captures the dynamic effects of increasing returns discussed above. It is a dynamic relationship, between the *rates* of change of productivity and output. As McCombie (2002) encapsulates it, the KV Law may be apprehended as the joint effects of ‘learning by doing’ and increasing returns to scale at the firm level, in tandem with an increasing degree of specialisation (division of labour) at the inter-industry level. Technical progress, through either innovations³⁰ (broadly defined) or adaptations, becomes dependable upon output growth. Within this theoretical framework, thus, technical progress is understood to occur mostly in an ‘embodied’ manner, i.e., manifested in more advanced capital goods that enter the productive process. Indeed, in Kaldor and Mirrlees (1962), the authors present a model in which technical progress is ‘infused into the economic system’ via the creation of new equipment³¹.

The three laws combined imply that higher manufacturing investments plus higher manufacturing output leads to technological progress, which feeds back to this virtuous circle. In this sense, capital accumulation (higher capital to output ratio) and technical progress cannot be easily disentangled, as there is a bi-causality mechanism between them: both are at the same time cause and consequence of each other. To frame it through neoclassical lenses, it means that it is impossible (or it does not make sense, theoretically speaking) to separate movements *along* the production function (higher capital to output ratio) from *shifts* of the production function itself (technical progress). His formulations were a direct attack on the neoclassical growth models in general, and on the aggregate production function in particular, for it cannot be employed as a proper technical apparatus in order to explain and theorize economic growth³². Moreover, Kaldor evidently anticipated many aspects of the so-called

³⁰ Bear in mind the presence of an innovation-specific literature delving on the positive impacts demand factors exert on innovation, usually framed through the concept of ‘demand-pull’ effects on innovation. See, for instance, Schmookler (1966) and Brouwer & Kleinknecht (1999).

³¹ Nevertheless, it can also be assumed the existence of an exogenous (or autonomous) growth of technical progress, not dependable on output growth. Moreover, technical progress may also be manifested in a disembodied manner (but these two concepts should not be used interchangeably).

³² Alternatively, we may quote a concluding statement in one of his papers: ‘the adoption of more roundabout methods of production, due to an increase in the size of the market, and the adoption of more capital-intensive process, are different facets of the same thing’ (Kaldor, 1972: p.1251)

endogenous growth models, as he placed increasing returns and endogenous explanations for technical progress at the core of his formulations.

These mechanisms described by Kaldor give rise to a process of ‘Circular and Cumulative Causation’ on economic growth. Once it is set in motion, it reinforces itself. As seen before, allowing for increasing returns make technical change endogenous. Extended markets enable the exploitation of economies of large-scale production, and in turn an increased capital-labour ratio and productivity. Amid this process, knowledge, or ‘scientific discoveries’, are both cause and consequence of industrial development. It follows almost logically that a country initially featuring high levels of capital-labour ratio and productivity will tend to grow faster than a counterpart featuring low levels of the same variables.

Reflecting the points above, an obvious consequence of the principles of cumulative causation and path-dependence is that growth rates are very likely to diverge among different countries. Hence, we are expected to observe divergence, not convergence in international living standards. Unrestricted trade, instead of welding two countries into a convergence path, thanks to the equalization of input factors’ remunerations, may actually enlarge the productivity differentials and promote divergence of income per capita in the long-run. In this spirit, many North-South models have been inspired by Kaldorian ideas. Richer countries, featuring initial advantages, may enter a self-perpetuating growth trajectory, and the gap between them and poor countries may never close (see, for example, Vines, 1984).

2.3.3) Demand-led growth, exports and the role of supply

Once the process of ‘Circular and Cumulative Causation’ is explained, one needs to ask how to trigger it. Initially, Kaldor’s formulation stated that the key to economic growth was the transfer of labour force from agriculture to manufacturing. The faster the rate of transfer, the faster an economy would grow. Conversely, a country in which its manufacturing sector cannot draw more labour from agriculture (say, because the latter is already too small) will face smaller growth rates (King, 2016).

The ‘late Kaldor’ (after downplaying the importance of the transfer of labour from non-manufacturing sectors to the manufacturing one) stresses the need of an autonomous component of aggregate demand: exports. In other words, assuming explicitly growth is

demand-led. Higher demand for exports kick-starts the ‘Circular and Cumulative Causation’ mechanisms on growth described above, and reinforces it via the Keynesian multiplier, causing increases in both consumption and investments.

With enhanced investments, productivity growth and technical progress follows, and the country in case gains (price and non-price) competitiveness, thus making its exports more easily marketable abroad, leading to more exports, and therefore closing the virtuous circle once again. Looking back in hindsight, the ‘late Kaldor’ has replaced a supply-side explanation on growth (labour supply to the manufacturing sector) by a demand-side one (exports as a key component of aggregate demand).

This demand-led trigger does not mean, however, that the productivity growth induced by manufacturing output will remain unchanged regardless of the magnitude of the flow of labour (supply) stemming from the agricultural sector. A reduced scope for labour transfers will diminish the country’s overall productivity growth (Thirlwall, 1983). This diminishing growth rate, nevertheless, cannot be conflated with the notion of a supply-*constrained* growth. Albeit in a slower pace, the manufacturing sector may keep increasing its output and productivity, *as long as there is enough demand* for its final products (which, in turn, via the Kaldor-Verdoorn Law, will induce productivity growth)³³. For the ‘late’ Kaldor (1985) the economy is perceived to be always demand-constrained to some extent, even if in full employment (and therefore never resource-constrained). Imperfect competition and continuous technical change mean that there is always some sort of labour transfers from low to high paid jobs³⁴. Demand pressures will show up in the form of bottlenecks, unavailability of complementary goods and disguised unemployment.

The Kaldorian process of cumulative causation, although demand-led, includes supply-side characteristics, as it is evident with the mention on price competitiveness of a given region. As Thirlwall (1983) puts, ‘the lower *costs* of production in fast growing countries make it difficult for other (newly industrialized) countries to establish export activities with favourable growth characteristics’ (p.347, emphasis added). One must, therefore, examine the

³³ This can be seen as the counterpart of Kaldor’s third growth law. The increase in manufacturing output ultimately does not depend on the continuous transfer of labour from the primary to the secondary sector.

³⁴ Again, without an overall loss for the whole economy, because the high-paid jobs are those featuring a higher productivity

interactions between supply and demand in the process of economic growth, especially involving price and costs changes.

The attentive reader may recall that this was a topic in which Young (1928) had already sketched some preliminary lines. Young, as noted by Kaldor (1972), assumes the operation of Say's Law, as an increase in the supply of goods is predicted to enlarge the market for other goods. But, in order to that dictum to *actually materialize*, increases in production (supply) must be corresponded sufficiently by an induced demand response; and an increased demand must be responded by sufficiently large supply responses. As noted earlier, bereft of Keynesian demand-side notions, the Young's reasoning remained somewhat vague.

More recently, the discussion on how to properly tackle the supply-side of Kaldorian models has been revived. As alluded before, the post-Keynesian/Kaldorian tradition has as a hallmark the assertion that growth is demand-led, even in the long-run. As a result, the supply-side is often ignored in formal modelling (or even in verbal accounts), and it is assumed to play a more passive role, accommodating automatically to demand-side variations. Not surprisingly, this reasoning has been labelled 'Say's Law in Reverse' by some (Cornwall, 1972).

More specifically, effective demand failures may take place even in the long-run, and demand-side expansions influence the advancement of productive resources (capital and labour). In other words, aggregate demand affects and determines the availability and productivity of factor inputs, change their utilization rates, and thus impacts both the actual rate of growth and the potential output in the long run. For demand-led theorists the inputs of production and productivity are affected and accommodated to demand-side variations. For example, increased aggregate investments, apart from boosting the actual growth rate of the economy, will also add capital and boost productivity growth, and will affect the allocation and participation of the labour force (across sectors and regions) (Setterfield, 2003).

However, this 'extension' of the short-run Keynesian principles to the long-run was met with some criticism, even from the heterodox camp. From a Harrodian³⁵ perspective, any mature capitalist economy is prone to a 'dynamic instability', due to the interactions between growth and cycles, the long and the short run. Recall that in the Harrod-Domar model the economy

³⁵ See Fine and Dimakou (2016) for an explanation of the Harrodian perspective on economic growth.

grows at the *warranted growth rate* (the ratio between savings and the capital-output ratio), which encompasses Keynesian considerations over effective demand, but in the long run it grows at the *natural growth rate*, which is given by the growth rate of labour supply. In the long-run equilibrium, both rates must be equal. In case of a higher warranted rate than the natural one, the economy faces a shortage of labour (excess of aggregate demand). In the opposite case, we have labour surplus (excess capacity). These inequalities would lead the economy, theoretically, to an ‘explosive instability’, either towards growth or economic decline. The device to deal with such instability was to consider the existence of both ceilings and floors for economic activity. Hence, in a phase of expansion the economy encounters a constraint, namely the utilization capacity, so that the demand-induced expansion is cooled down. In the phase of decline, on the other hand, a fixed level of expenditures is encountered and works as a floor (Fine and Dimakou, 2016).

Harrod clearly included supply-side considerations in his model, and capacity utilization plays a pivotal role in bounding the trajectory of the economy. By ignoring supply-side considerations, many post-Keynesians economists are in fact assuming the utilization rate of capital will automatically accommodate to demand variations (‘Say’s Law in reverse’). For Skott (2016), however, the utilization rate should be theorized as equal to a desired rate along a warranted growth path, which is deemed to be locally unstable. If in the *long-run* the actual growth rate of the economy and its potential growth rate (Harrod’s natural rate) do not coincide, it follows that the rate of capacity utilization is expected to experience a *secular trend*, with either under- or over-capacity utilization (a secular trend of fall or rise in the capacity rate without limits). Nevertheless, by the actual nature of the variable in case, capacity utilization can vary only within given, physical bounds. Therefore, many heterodox scholars have attempted to reconcile the actual and potential growth rates³⁶. Invariably, this reconciliation is brought about by the inclusion of supply-side mechanisms³⁷ – usually labour markets and/or economic policy variables – which adjusts the potential growth rate to the

³⁶ The actual and potential growth rates may be equal only in a special case. Following Thirlwall’s Law (TL) (to be discussed next), a specific exports growth rate is required throughout the long-run.

³⁷ Apart from theoretical considerations, Setterfield (2013) notes that mature economies can operate under full-employment for longer periods of time, like during the ‘Golden Age’ period. This empirical observation indicates that the potential output constraint cannot be ignored.

actual rate. The reconciliation of the two growth rates means a constant (yet indeterminate) rate of capacity utilization is achieved, solving the problem³⁸.

Both Palley (2002) and Setterfield (2006) have attempted to reconcile the actual and potential growth rates. They derive their actual growth rate from the canonical ‘balance of payments constrained growth (BPCG) model’ (to be discussed below). The potential growth rate is derived from Harrod’s natural rate of growth (supply-side determined), but it undergoes the addition of technical progress, following the KV Law. The difference between the two papers lie on the mechanisms of adjustments proposed (which are not mutually exclusive). Palley (2002) hypothesizes that the income elasticity of demand for imports is endogenous to the degree of capacity utilization. Hence, in case the actual growth rate is higher than the potential, the capacity utilization increases, raising the economy’s income elasticity of imports and therefore the actual growth decreases (following Thirlwall’s Law³⁹). Setterfield (2006), on the other hand, hypothesizes that productivity growth is endogenous to the degree of capacity utilization. Therefore, in case the actual growth rate is higher than the potential, the capacity utilization increases, with more investments taking place and hence boosting the Kaldor-Verdoorn (KV) coefficient⁴⁰. This movement alters the supply-side and thus increases the potential growth rate.

Setterfield (2013) builds on his previous work and extend the analysis. Firstly, now his model provides an explicit description of the supply-side, characterizing the economy as labour-constrained and under-utilizing capital at any point. Secondly, considering the empirical evidence on the size of the KV coefficient, it is posited that the increase in the potential output following a positive demand shock will be very limited (smaller than the increase in the actual growth rate)⁴¹, because the KV coefficient is typically smaller than one. Hence, it follows that the induced increase of the potential growth rate is commonly smaller than the increase in the actual growth rate, bringing to the surface the problem of a secular trend in the rate of

³⁸ Recall that Solow (1956) solved the Harrodian instability problem by ruling out effective demand considerations in the long-run and assuming that savings are always equal to investments, with the causality running unequivocally from the former to the latter (Setterfield, 2003).

³⁹ To be discussed below

⁴⁰ The elasticity of productivity in relation to output, i.e., the degree in which an increase in the output leads to an increase in the productivity growth.

⁴¹ This point is similar to Dutt (2006), in which the author states that a low KV coefficient means that the impact of demand expansions will be limited or even nullified if the coefficient is low enough. The weakness of this adjustment mechanism brings about the role of supply on long-run growth. The session below entitled ‘empirical validation’ will present the discussion on the typical magnitude of the KV coefficient.

capacity utilization. In other words, the supply-side accommodation, while existent, is typically not robust enough to justify the neglect of supply-side constraints in the economy. In general, these studies are aiming at explicitly addressing the mechanisms behind the operation of the ‘Say’s Law in reverse’, by modelling the supply-side and its interactions with the demand-side.

This is, of course, an ongoing debate. Skott (2016) lists numerous attempts by post-Keynesian scholars to postulate that growth is entirely and solely demand-determined in the long-run. For them, the Harrodian instability can be tamed by assuming some components of aggregate demand are autonomous and given exogenously. While any post-Keynesian economist would agree that demand shocks can and do affect the economy by inducing more investments, Skott (2016) is sceptical on whether any autonomous movements in demand can be sizable enough to stabilize the economy, in a Harrodian sense. In order to this task to be accomplished, the share of an autonomous demand component required would be very high. Skott sides with Setterfield/Palley in the broad sense that the supply-side may provide a ceiling on upward divergence, and a floor on downward divergence, via labour market conditions, and thus should be assimilated by heterodox scholars.

2.3.4) Models and formalisations

Many of those Kaldorian insights on economic growth have been formalized into a variety of economic models by different authors. The role of exports in economic growth was first formalized by Thirlwall (1979), who devised a balance of payments constrained growth (BPCG) model, comprising exports and imports functions, as well as a condition for the equilibrium of the balance of payments. It follows from the model that when domestic prices increase at a faster pace than foreign prices the result is a reduction of the balance of payments equilibrium growth, a conclusion congruent with Kaldor’s intuition exposed above regarding the price competitiveness of a country and its export performance. Moreover, the model highlights the pivotal importance of the income elasticities of demand for exports and for imports⁴². Assuming stable relative prices in the long-run, these income elasticities are the key determinants of long term growth. Putting it simply, that is the rationale behind the so-called ‘Thirlwall’s Law’ (TL): the long run equilibrium growth rate of a given country is

⁴² Expectedly, a higher income elasticity of demand for exports raises the long-run growth prospects, while a higher income elasticity of demand for imports decreases it.

obtained by the ratio of the income elasticities of demand for exports and imports, multiplied by the world's income growth rate. As one may speculate, what guarantees the validity of the Law as such is the premise that countries are either unable or unwilling to run persistent trade deficits, because they cannot permanently attract capital net inflows from abroad and/or do not wish to accumulate foreign debt and service in external currency. Setterfield (2011:) notes that Thirlwall's Law (TL) implies that: a) 'price effects' (changes in the relative prices vector) can only influence the short-run, with the long-run still being determined by the TL parameters described above; b) likewise, policies aiming at boosting domestic demand may influence growth only in the short-run; and c) long-run growth prospects can only be uplifted by raising the country's income elasticity of exports, decreasing its income elasticity of imports, and via a widespread enlargement of the world's income.

One may also contemplate TL through the perspective of non-price competitiveness in global markets (McCombie and Thirlwall, 1994: Chap.4). Assuming that global competition is mostly based on the quality and features of goods, not simply on their price, TL can be interpreted as displaying a stability of the prices ratio (domestic/foreign) in the long run, i.e., price competition having an insignificant influence in the long run BPCG equilibrium rate. In the short run it can be argued that price competitiveness cannot be neglected, but in the long run TL in its simpler characterization prevails. This interpretation assumes, thus, that the productivity gains realized via dynamic increasing returns are manifested primarily in higher-quality products, not in lower prices. As a result, a country's output becomes more attractive abroad, raising its elasticity of demand for exports, and consequently boosting its long-run growth prospects. As Setterfield's (2011) review on the TL-related literature reveals, the basic form of the Law is exceptionally robust and reliable, notwithstanding numerous extensions and criticisms⁴³.

The Kaldorian-inspired literature on cumulative causation has also given life to a variety of formalisations and models. Dixon and Thirlwall (1975) was the first attempt, and constitutes perhaps the canonical model on the Kaldorian cumulative causation growth schema⁴⁴. The model finely captures cumulative causation's hallmark of the both-way interactions between

⁴³ For the interested reader, reliable and comprehensive reviews can be found on Setterfield (2011), Thirlwall (2011) and McCombie (2011)

⁴⁴ Other formalisations include: Skott (1985), Gordon (1991) and McCombie & Thirlwall (1994), among others. Berger (2009) compiles essays from a variety of perspectives presenting the principle of cumulative causation from distinct angles and theoretical traditions.

aggregate supply and demand. Output growth is modelled as depending on the growth rate of aggregate demand, with exports as its only autonomous source. Exports, thence, are formalised as depending on the world's income and price levels differentials (foreign and domestic); prices, in turn, are set by a fixed mark-up over average labour costs. A dynamic version of the pricing equation is translated as the rate of (domestic) inflation being equal to the difference between the growth rate of nominal wages and of productivity growth. The latter, finally, is expressed by the KV Law, in which productivity growth is a function of output (of the previous period) and an autonomous productivity growth component.

The pricing and exports equations display the influence of supply on demand, for nominal wages inflation and productivity growth impacts price inflation, and therefore final exports demand. The output and productivity equations, on the other hand, display the influence of demand on supply, for output increases induces higher productivity (via KV Law) and higher exports leads to higher output growth. Taken together, we have the typical self-reinforcing mechanisms of cumulative causation, which work via export demand, realization of dynamic increasing returns and price competitiveness. As hinted by the previous discussion, one can also think of this model as operating through non-price competitiveness, without making injustice to Kaldor original ideas or Dixon and Thirlwall (1975) original formulation. In this case, increased productivity, following KV Law, is manifested into high-quality goods, which in turn increases the country's income elasticity of demand for exports.

Notwithstanding Dixon and Thirlwall (1975) model explicit inspiration by the Kaldorian growth schema, one may scrutinize it from closer. Setterfield (1997b) realizes the model may even be interpreted as offering 'non-Kaldorian' results: history enters the model uniquely in the role of initial conditions. Apart from the initial conditions, growth rates will depend solely on exogenous data, with no other aspects of history having an influence in the long-run process. Once initial conditions are given, and without shocks, growth rates will evolve in a deterministic fashion, hence. Moreover, and as a result of the former point, relative growth rates will progress in a self-perpetuating manner, with low (high) growth rates being replicated endlessly. These results, while useful in order to understand the continuous gap between rich and poor countries, come at odds with some 'stylized facts' of long-run growth: the world's economic history is permeated with examples of both growth reversals and economic catching-up. It becomes inconsistent to employ this formalisation of the cumulative causation process to explain, for instance, the long-run decline of the British economy or the

rise of South Korea. If history is to be taken seriously, we should allow for path-dependency to wield influences in the long-run growth *throughout the whole trajectory* of economic growth, and not only through given initial conditions⁴⁵.

2.3.5) Empirical validation

The Kaldorian perspective on economic growth has inspired a number of empirical studies aiming at quantify and estimate key parameters and validate theoretical interpretations. The empirical literature is very large and encompasses a variety of econometric techniques, functional specifications and regional applications. Most of the empirical research has been dedicated to test the validity of TL and the KV Law, broadly defined.

Take, for instance, Thirlwall's Law (TL). As Romero (2016) reports, TL has been tested for a variety of countries, using different specifications, and the range of techniques employed is also very wide. The overall conclusion is of robust evidence in favour of the validity of the Law. Firstly, most studies confirm that both relative prices (foreign and domestic) and real exchange alterations are not effective adjustment mechanisms to the balance of payments in the long-run. Secondly, allowing for capital flows into the balance of payments do not change the robustness of the results (Thirlwall, 2011)⁴⁶.

The Kaldor-Verdoorn Law has been tested for an ample variety of countries and economic sectors, and employing distinct estimation techniques. Here the type of specification of the Law may affect the validity of the results. In general, the validity of the law seems to be backed by most of the studies, and estimates are mainly robust. McCombie (2002) reports that the values of the KV coefficient usually vary within the range of 0.3 to 0.6 for advanced economies and are statistically significant. Therefore, the majority of the studies tend to confirm the existence of substantial increasing returns in industry. Nevertheless, McCombie et al (2002) also warns that some estimates sometimes need to be further qualified and, in some cases, some econometric problems arise⁴⁷. Romero (2016: 193, table 1) provides a

⁴⁵ Setterfield (1997b) provides an extension of the model in which arguably his criticisms are dealt with appropriately. Precisely because his alternative builds on the notion of qualitative changes which take place throughout an economy's growth trajectory, it will be covered in the section 2.5.2, dedicated to structural change.

⁴⁶ Thirlwall (2011: p.341-342, tables 2 and 3) perhaps presents the most comprehensive and reliable survey on the relevant studies regarding TL.

⁴⁷ In particular, one may refer to McCombie (2002) for a whole set of empirical issues, involving the role of simultaneous equations, diffusion of technical change, heterogeneity of the sample and the proper handling of

survey on the relevant studies and McCombie et al (2002: p.9-27) provides perhaps the most complete list summarizing empirical research done on the KV Law, their respective methodologies and empirical results.

2.3.6) Regional growth

As recounted by Thirlwall (2013), it was Kaldor's involvement with policy-making in the British government during the 1960s which most likely ignited his particular concern with regional growth. The scholar's most categorical statement on regional growth is his paper entitled 'The case for regional policies' (Kaldor, 1970). The author puts forwards a concise statement of his reasoning on economic theory, and one can follow readily the application of his ideas on economic growth at the regional realm. As one might have conjectured, the basis of the Kaldorian growth schema – exports, dynamic increasing returns, technical change and competitiveness – does not have to be circumscribed by the national level.

The key point, once we have fully appreciated the Kaldorian cumulative causation growth schema, is how to frame it from the regional level. As seen before, for the mainstream endogenous growth theory, the chief mechanism confining growth to the local level – and thus justifying the spread of a literature on regional economic growth – is at least since Lucas (1988) very well-defined: knowledge spillovers arising from the direct interaction between individuals. When tackling local growth through a heterodox perspective, then, the challenge is to identify a proper mechanism which articulates economic growth spatially. As growth is theorized as demand-led, or more specifically export-led, the ability or otherwise of a specific region to promote its exports in international markets becomes of paramount importance.

The original model by Dixon and Thirlwall (1975) presented before could be interpreted as an attempt to formalize Kaldor growth thoughts for the regional level. Of course, regions within countries will never suffer a typical balance of payment crisis, in the sense of facing a shortage of foreign currency and its exchange rate becoming under pressure. Nevertheless, with imports persistently exceeding exports, the balance of payment constraint will reveal itself in slower growth and higher unemployment (Thirlwall, 2013). Once again, a region's

time-series when estimating the KV coefficient. Chiefly, the 'static-dynamic Verdoorn paradox' is noteworthy of attention. See McCombie & Roberts (2007) for an overview and thorough explanation of the paradox.

prospects for long term economic growth will largely hinge upon its income elasticities of demand for exports and imports.

These parameters, in turn, will depend appreciably ‘on the nature of the products produced’ (Dixon and Thirlwall, 1975: p.209). Both the KV coefficient and the rate of autonomous productivity growth, it is argued, will differ between sub-national areas, as the industrial structure of regions also differ. In order to foster regional economic growth, then, it is necessary to modify the industrial structure of a region so that the commodities there produced feature both a higher income elasticity of demand and KV coefficients. In line with TL, just as exchange rates devaluations at the national level do affect long-run growth, subsidies on local wages or on capital formation may provide only a once-for-all gain in competitiveness, but not a permanent one. What would be recommended, from a policy-maker perspective, is the identification of sectors whose structural characteristics are more likely to render higher values for the key parameters discussed previously (Dixon and Thirlwall, 1975). The authors promptly realize, thus, that the economic structure of a given region will directly impact its growth performance. The particular sectors/goods in which regions specialise (and export) matter, and will be the main explanatory variable in comprehending regional income disparities.

What becomes implicit in the Dixon-Thirlwall model is that the kind of dynamic increasing returns so emphasized by the Kaldorian literature can potentially be, if not always is, geographically localised. While the assertion that the economic structure of a region will directly impact its income elasticities of demand and its KV coefficient represents an evolution in scrutinizing the local nature of economic growth, the model suffers from the deficiency of not offering precise mechanisms to deal with *localised* dynamic increasing returns. Secondly, there is no recognition of the importance of domestic demand, either stemming from the national market or from the region itself.

Regarding the first deficiency, the Kaldorian literature has proceeded by attempts to measure the degree of localized increasing returns, the regional KV coefficient and the validity of the KV Law at the local level. This body of literature, as one may foresee, is highly empirical in nature. McCombie and Rider (1984) is perhaps the first study of this kind, tackling the existence of localised increased returns at the states’ level in the United States (US), between the peak years of 1963 and 1973. Bernat (1996) further expanded the study, for the period

1977-1990 but now incorporating spatial autocorrelation techniques. Basically, it can be postulated that the productivity growth in one region will be affected by neighbouring regions' performance. Spatial autocorrelation techniques aim to deal with and control this problem. Martinho (2011) tested the KV Law for Portuguese regions throughout two different periods of time, 1995-1999 and 2000-2005, with both periods presenting increasing returns for industry (albeit in different magnitudes), and attesting that the regions in case were subjected to spatial autocorrelation. Other studies on regions within countries include Leon-Ledesma (2000), who tested the KV Law for 17 Spanish regions, Hansen and Zhang (1996), testing the Law for the Chinese provincial level (29 units) between 1985-1991; Paschaloudis and Alexiadis (2001) tested the validity of the Law and found increasing returns in manufacturing for Greek regions; and for the United Kingdom (UK) Harris and Lau (1998) tested for the old 10 standard UK regions and Roberts (2001) for the UK counties. Finally, many studies focus on regions within the European Union (EU). Fingleton and McCombie (1998) tested the KV Law for 178 EU regions, Angeriz et al (2008) for 59 EU regions and Postiglione et al (2017) for 187 EU regions. The last study incorporated measures of sample heterogeneity, dividing the regions into 4 spatial clusters of productivity.

In general the results come out largely favouring the existence of localised increased returns to scale, in particular to the manufacturing sector. In other words, the productivity growth induced by increased output expansion seems to be geographically confined, so that the gains in productivity have a clear regional basis. It is important to stress that the sub-national level may be conceptualized as a more ideal unit of analysis in order to test the validity of the Kaldor-Verdoorn Law, as regions within a country usually are subjected to common institutions and macroeconomic policies, do not differ extraordinarily in terms of socio-economic characteristics (when contrasting with cross-country comparisons), the intra-national mobility of both capital and labour is considered to be higher than international mobility, and the spatial diffusion of innovations are believed to run more unimpeded than across countries (McCombie, 2002).

Regarding the second point – the overlook of national and regional demand on local growth – it most presumably stems from the preferred theoretical framework the Kaldorian literature has adopted, i.e., the BPCG model and the role of exports. Nevertheless, Argyrous and Bamberry (2009) offer an important contribution, by focusing on the role of regional demand in triggering the process of cumulative causation at the local level. In their case study, it is

argued that firms start off by supplying regional markets first, when only a small amount of capital is needed to supply consumer demand⁴⁸. Subsequently, firms cumulatively improve their methods of production, upgrade plants and human skills, establish more channels of sales and marketing, increase the quality and promote product differentiation, and finally access better capital goods. In tandem with this process, production capacity is expanded, so larger markets become possible to be explored. Hence, national and eventually international markets become attainable to the firm, in a typical endogenous and path-dependent evolution in which success breeds success. In the meanwhile, producers of consumer goods augment their demand for specialized capital goods, forging new regional demand sources for the capital goods industry. This interaction between consumer goods and capital goods production is reminiscent of the Young-Kaldorian scheme of the interaction between industrial supply and demand, which lies at the heart of the cumulative causation thesis. Localized demand and industrial growth, thus, may be the starting point of a process leading to booming exports.

In sum, theorizing regional economic growth from Kaldorian lenses requires the scholar to investigate two inter-related topics: the ultimate, demand-led, source of economic growth, and the particular economic structure of the regions, responsible for realizing the opportunities of dynamic increasing returns made available by demand expansions. Increased demand may be met by different regions within a country, and what will determine which one will take advantage of this opportunity is the prevalent economic structure of the region. To put into different words, the ability of a locality to harness and exploit an enhanced aggregate demand will depend on the match of what the region supplies (its economic structure) and the type, or component, of the aggregate demand under expansion. An increased (say, international) demand for garments and textiles will not be as beneficial for a region dominated by old manufacturing sectors like chemicals, as it will be for a region which already has established textiles facilities. As a rule of thumb, however, in the long-run it is posited that the more sophisticated a local industrial base, the more it will be able to benefit from booms in demand. In any case, it becomes clear how the interaction of supply and demand, a dear topic for both Young and Kaldor, reveals itself at the local level.

⁴⁸ Of course, whether local demand may be supplied by local firms or from neighbouring firms depends first on the transportation costs involved and secondly on the nature of the industry's inputs. These points will be advanced further on.

It might be that in order to appropriately tackle regional economic growth one must include supply-side factors, even if the growth is ultimately demand-led. This assertion resonates well with part of the Kaldorian literature (Dutt, 2006; Palley, 2002; Setterfield, 2013; Skott, 2016) which aims at tackling the supply-side and understanding the mechanisms behind its accommodation to alterations on the demand-side. As seen before, these mechanisms usually revolve around labour markets factors and the rate of capacity utilization. At the regional level, though, one may highlight measures of specialization of the productive structure of each region.

2.4) Concluding remarks on regional economic growth

It probably became clear, by the reading of previous sections, that Kaldor anticipated many of the aspects of the so-called New Growth Theory (NGT) and that the New Economic Geography (NEG) resembles the Kaldorian reasoning in many aspects. Both Kaldorian growth theory and the mainstream endogenous growth theories agree on the importance of localised increasing returns to economic growth, and on its pivotal role in helping regions to sustain advantageous initial conditions, thus preventing more backward regions to catch-up (Roberts and Setterfield, 2010).

Indeed, when praising Young's seminal paper, Kaldor (1985) called attention to the local nature of the realization of increasing returns:

'The points that Young did not emphasize but that are very important (in my view) are first, that this process tends to cluster around geographic centers (which may be thought of as cities, and in a wider sense, countries as political entities); this is presumably so because its success largely depends on the presence of specialized manpower, and the stimulus derived from continuous and easy communication between men with similar experience, as well as joint production between small specialize firms which involves frequent transfer of an unfinished product between numerous specialized firms' (p.69-70)

To be sure, that is not entirely faithful to Young (1928), who explicitly stated that:

'[the] Nearness to the source of supply of a particular raw material or to cheap power counts for most in one part of a series of industrial processes, nearness to other industries or to cheap transport in another part, and nearness to a larger centre of population in yet another. A better combination of advantages of location...can be had by the more specialized industries' (p.538)

But even more critically, both accounts bear great resemblance with Marshall's formulation of external increasing returns arising from specialized suppliers of goods, common labour markets, and informational spillovers. As seen before, this 'Marshallian Trinity' has been incorporated by the mainstream economics through the NEG, NGT and Urban Economics literatures.

In Kaldor's most categorical statement on regional growth (Kaldor, 1970), references to topics which only later would be incorporated by the profession's mainstream abound. Kaldor discusses coherently issues such as the increased 'opportunities for easy communications of ideas' (p.484), the role and impacts of the reduction of transportation costs (p.484) and diseconomies of agglomeration and its associated negative externalities, such as environmental problems, pressures on housing and public services and congestion costs (p.488). In particular, as McCombie et al (2002) realizes, both Kaldor and Romer support the thesis that 'learning by doing' and increased specialization are engines of economic growth. In fact, both aspects are interconnected, for producing only one good may limit the learning possibilities available for an economy. If one tackles the economic system as whole – increasing returns as a 'macro-phenomenon', Kaldor would say – the possibilities of realizing learning opportunities are not only greater, but varies positively with the deepening of the process of division of labour in the economy.

Kaldor's conceptualization of increasing returns (static and dynamic), however, may be deemed exceedingly sweeping, encompassing pecuniary and non-pecuniary, tangible and intangible factors, level and rate effects (Bhattacharjea, 2010). This comprehensive conceptualization, while fruitful in order to apprehend the overall growth of industrial systems (and nations), poses some troubles for economic analysis. Firstly, it means that the precise mechanisms and channels involved in the realization of increasing returns – especially at the local level - are somehow obscured, in name of the 'macro-phenomenon' nature of the concept. Secondly, and as a direct result of the first point, Kaldor (and the Kaldorian tradition) did not clearly disclose which spatial scale is the more relevant one in order to assess and measure increasing returns – the city, region, province, nation or any else. For the scholar concerned with regional growth, this raises a burdensome obstacle. Recall that the Urban Economics approach has a well-defined unit of analysis – the city level or urban agglomerations. Thirdly, this lack of clarity on these matters implies that it becomes daunting for the Kaldorian literature to test empirically, at the local level (however defined), distinct

mechanisms responsible for the realization of increasing returns, and their relative importance. As we saw before, the regional Kaldorian literature has usually resorted to testing the validity of the KV Law at high levels of aggregation (US states, EU regions, Chinese provinces etc), which may conceal important dynamics and heterogeneities taking place some levels below. This is a direct consequence of the over-arching conceptualization of increasing returns by Kaldor.

The mainstream literature, on the other hand, has the advantage of dealing with more clear-cut perceptions on increasing returns: NEG explicitly models internal increasing returns in the form of plant-level fixed costs and the Marshallian ‘pecuniary’ external increasing returns. NGT and Urban Economics, in their turn, focus on intangible externalities, namely knowledge spillovers. This neater classification allow them to empirically test their theories with less hurdles, and in some cases the combination of all the three Marshallian externalities may be assessed (like in Ellison et al, 2010).

In addition, while Kaldor (1970) did mention the importance of transportation costs in regional growth, this has never received a more detailed treatment. As we know, transportation costs and its interaction with scale economies are at the heart of NEG, but that is an aspect largely overlooked by the Kaldorian tradition (Thirlwall, 2013). This omission also helps to explain the lack of a more careful analysis on dispersion forces, which were formally modelled in the NEG’s framework as centrifugal forces.

The most significant dispute between Kaldor and the mainstream, however, appears not to take place at the level of the conceptualization of localised increasing returns, but on the battlefields of pure economic theory. The post-Keynesian tradition main tenet continues to be the assertion that growth is ultimately demand-led. This view holds that the aggregate demand growth for local production is, therefore, a mandatory requisite for the realisation of increasing returns (localised or not). For the NGT and Urban Economics, growth is solely supply-side determined, and hence the relevant debates revolve around the accumulation of factor inputs like human capital and on the diffusion of knowledge (whether spillovers are mainly intra- or cross-industry, for instance). The frank neglect of the demand-side by NGT may have negative consequences on policy-making, because simply fostering the supply-side conditions, without due attention to demand considerations, may result in policymakers never

being able to harness the knowledge spillovers so stressed by them (Roberts and Setterfield, 2010).

Another key distinction comes on foreign trade. In particular, for Kaldorians exports play the key role of an autonomous demand component able to trigger the realization of dynamic increasing returns via the KV Law. For the mainstream (old and new theories alike), foreign trade is important in promoting international specialization, allocative efficiency and in enabling the purchase of foreign goods at lower costs than the domestic production. Moreover, balance of payments restrictions, so dear to the Kaldorian tradition, are simply inexistent for the mainstream (Bhattacharjea, 2010). Other competing views on economic theory will also manifest in this debate. While for the mainstream (either in the form of NEG or NGT) market clearing always occurs and unemployment is non-existent in the long-run, that is far from being the case for Kaldorians.

A final note worth of mention is on the methodology employed by both schools of thought. Mainstream endogenous growth theories use and abuse of the equilibrium referential, with micro-foundations⁴⁹ and inter-temporal maximization driven by atomized agents. Further, even amid a process of structural transformation of the economy (resources moving from agriculture to manufacturing, as in the case of NEG), preferences and technologies are assumed to persist unaffected. This is, to a great extent, a consequence of the steady-state constructs and methodology applied by the mainstream (Bhattacharjea, 2010). As we have seen, the Kaldorian tradition is more sceptical on the usefulness of equilibrium as an organizing concept if we are to properly appreciate economic growth as a historical process. This renders both approaches difficult to conciliate⁵⁰, and helps to explain the reluctance of many of the NEG main theorists to further recognize Kaldor (1970) and Dixon and Thirlwall (1975) as true forerunners of the field.

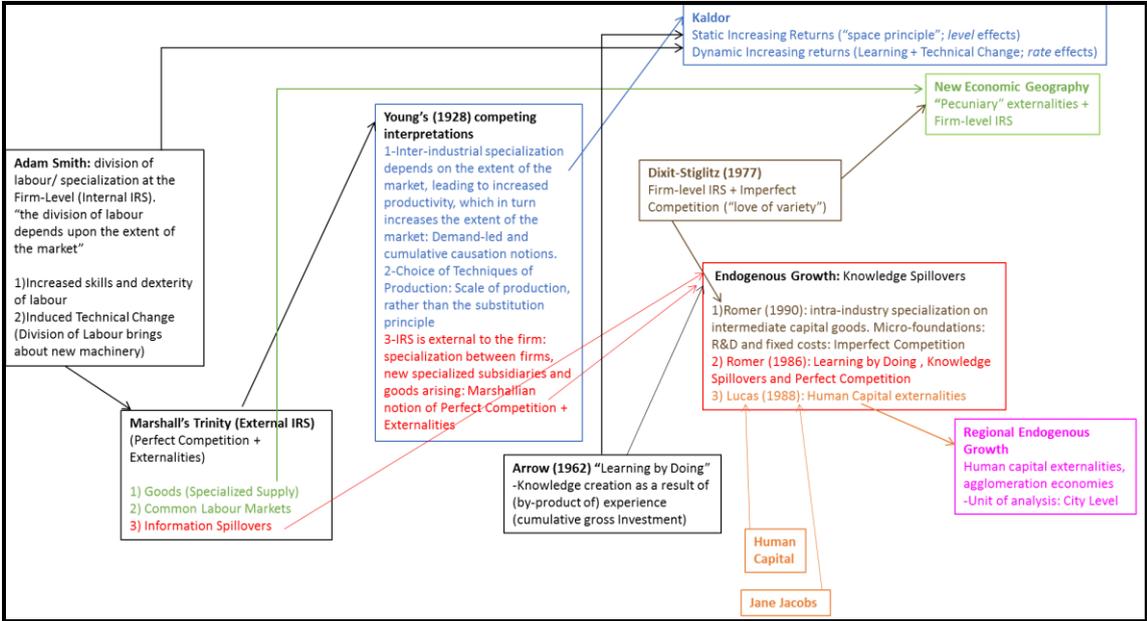
This overview on regional growth theories suggests quite plainly that, while there is a great convergence on the endogenous nature of technical change and economic growth, the debate

⁴⁹ On the particular topic of micro-foundations, it is convenient to quote Young (1928) for one last time: ‘Not much is to be gained by probing into it to see how increasing returns show themselves in the costs of individual firms and in the prices at which they offer their products’ (p.528). In light of the wide-spread usage of the Dixit-Stiglitz (1977) model of imperfect competition, Young’s statement works as an appropriate critique.

⁵⁰ Nevertheless, Bhattacharjea, (2010) argues that by the end of his life Kaldor became less critical of equilibrium solutions. Moreover, if one recalls Setterfield’s (1997a) distinction between the ‘equilibrist methodology’ and ‘equilibrium constructs’, it is not too far-fetched to recognize a possible point of convergence between the two traditions.

on particular mechanisms, triggers of the process and cause-consequence relationships are unsettled. It is difficult to disagree with Roberts and Setterfield (2010) when they state that ‘different mechanisms operate simultaneously, with the exact combination of mechanisms (and their net effect) being context dependent’ (p.445). Therefore, regional growth experiences should be perceived within the specific demand and productive structure they are embedded in. This partial conclusion leads us to a discussion on structural change and accumulation regimes, the topic of the next section. But before moving on, figure 2.1 summarizes the distinct conceptualizations on increasing returns to scale (IRS) offered by different schools of thought:

Figure 2.1: Increasing Returns and Economic Theory



Source: Own elaboration

2.5) Structural change

This section will aim to provide a plausible sequel to the debate on growth theories. Therefore, the Kaldorian tradition on structural change will be privileged, but studies from other theoretical traditions will also be presented in cases where it is deemed necessary. Moreover, this section will attempt to provide a logical theoretical bridge to the subsequent chapter of this thesis, on the importance of institutions to growth and development.

2.5.1) Structural change and economic growth

The literature on structural change is vast and comprehensive, and there are many reliable surveys and literature reviews available. Silva and Teixeira (2008) provides a good starting point, reviewing the distinct employments of the term, methodological considerations and finally providing a historical literature review, spanning from the early classical economists to the techno-economics paradigm. A caveat of their survey, however, is the lack of studies on the Kaldorian tradition. This lacuna is fulfilled by the recent survey conducted by Magacho (2017), whose work focuses on the key role of increasing returns, aggregate demand and cumulative causation for economic growth and structural change. Nevertheless, the narrow scope of his paper precludes a broader discussion of some key concepts related to structural change. Storm (2015), in his turn, provides an over-arching literature review on the main discussions revolving around the theme, approaching it from a more multi-disciplinary perspective. In particular, there is an in-depth discussion on the debate on agrarian change and its connections with successful cases of industrialization, and the author also covers, rather critically, the recent ‘rediscovery’ of the structural change debate by mainstream economics.

A natural consequence from one-sector models of economic growth, and their reliance on the idea of a steady-state balanced growth, is the absence of what can be termed structural change. This concept can have different interpretations, but one could briefly define structural change as the movement of labour and other productive resources from low-productivity activities to high-productivity ones. Structural change can render both static and dynamic gains in productivity⁵¹. The former relates to labour shifts across sectors (from agriculture to industry and advanced services, typically), while the latter refers to productivity growth *within* sectors, typically due to skills and technological upgrading, positive externalities, and accumulation of capabilities⁵². This is deemed to be one of the main aspects involved in the long-term process of economic growth, and, in particular, of catching-up. Its neglect is a serious caveat, thence.

The Kaldorian tradition has the advantage of placing the transfer of labour from agriculture to manufacturing - i.e., a change in the structure of the economy – at the crux of economic growth in the long-run. Indeed, for Kaldor industrialization leads to higher productivity growth in agriculture and services as well, as the secondary sector absorbs rural ‘surplus’

⁵¹ Do not conflate with static and dynamic *increasing returns*, as expose previously

⁵² Following a recent definition by UNCTAD (2016a)

workers (sub-employment or disguised unemployment) and promotes the diffusion of capital goods to agriculture⁵³. The decline in agriculture (measured either by employment or output share) is important because as labour moves from low-productivity agriculture to higher-productivity activities, average productivity in the economy automatically increases. But this movement has a secondary, and in the long-run even more important, beneficial effect: the higher incomes accrued at the industrial sector (in the form of higher real wages than in agriculture) creates additional demand for both manufactured goods and modern services, the latter being highly complementary to manufacturing (Storm, 2015). In other words, the operation of Kaldor's third growth law assures that the process of structural change may promote a productivity increase for the *whole* economy.

Furthermore, the extra demand associated with the movement of structural change towards industry allows even more leeway for the expansion of manufacturing. With the spur of this additional demand manufacturing activities are more likely to undergo a process of technological upgrading and promote the dynamic gains alluded before. If manufacturing is considered the 'engine of growth' of an economy, one may need to scrutinize technological progress *within* this sector. Indeed, one may justifiably narrow down the view of structural change towards solely the manufacturing sector itself, as the sector can be remarkably heterogeneous, encompassing from sub-sectors very dependable on agricultural raw materials (like textiles) to sub-sectors featuring great capital-intensity, like the aerospace industry. To frame it through our Kaldorian lenses, it may be said that the ability to promote and sustain technological progress differs widely *within* the manufacturing sector. Climbing the technological ladder, promoting skills upgrading, diversifying the manufacturing base and moving towards high-technology manufacturing will trigger and harness the dynamic increasing returns so pivotal to the Kaldorian tradition. It is this virtuous combination of static (across sectors) and dynamic (within the manufacturing sector) gains in productivity which explains why structural change is traditionally associated with higher and sustained growth rates over time.

In relation to the heterogeneity of the industrial sector, many studies attempted to tackle this issue through Kaldorian lenses. If what makes manufacturing the 'engine of growth' is its

⁵³ Thirlwall (1986) is an early model formalising these ideas, considering that on early stages of development agricultural growth represents the paramount source of demand for industrial growth, but in more advanced stages exports assumes this role.

ability to generate technical progress and realize increasing returns to scale, a sectorial approach would deem fundamental to measure the distinct degrees of increasing returns that different manufacturing sub-sectors possess. Precisely, McCombie (1985) has found that the degree of increasing returns to scale varies substantially within the manufacturing sector itself. To put it differently, the variation of the KV coefficient *within* the manufacturing sector cannot be overlooked. Therefore, one may claim that the long-run growth of a given country is heavily influenced by its specialization on a set of (sub) sectors marked by high increasing returns to scale. Angeriz et al (2009) has confirmed McCombie's (1985) previous results, showing that for the EU's industry-regions all industrial sectors are subject to increasing returns, but the latter varies significantly across sub-sectors: considering six manufacturing industries, the authors' found out that textiles feature the lowest degree of returns to scale⁵⁴ (1.37) while electronics lead the list with 7.12. More recently and consistent with the previous studies, Romero and McCombie (2016) indicate that high-tech industries display higher increasing returns than low-tech industries. Other studies from distinct theoretical traditions, in particular from the evolutionary and neo-Schumpeterian perspectives, also tend to highlight the heterogeneity existent within the manufacturing sector. Studies indicate that technology-driven and high-skilled sectors in general (Peneder, 2003), and sectors such as electronics (Amable, 2000; Fagerberg, 2000) in particular, present higher productivity growth.

Another fruitful line of research on structural change tackles the explicit creation of new economic sectors and the evolution of the aggregate demand composition on the course of economic development. These issues have already been alluded by the theoretical tradition first laid by Young and Kaldor – recall Young's emphasis on *qualitative changes* and the rise of *new* subsidiaries and auxiliary industries – but it is perhaps the work associated with Luigi Pasinetti (1981, 1993) that has best explored this avenue. Pasinetti's work is rich and insightful, and goes beyond the scope of this thesis to present it in full⁵⁵. Many models attempted to follow the path trailed by Pasinetti's contribution, and also amending some points which were regarded worth of attention. Saviotti and Pika (2004), for instance, formalise an economy in which the creation of new sectors is the main driver of total employment growth in the long-run. The model considers endogenous changes in the sectorial

⁵⁴ The authors calculate a composite index, encompassing both static and dynamics increasing returns, congruent with the Kaldorian tradition. The full list of sectors, organized by the increasing degree of returns to scale, is as it follows: textiles, chemicals, transport, other manufactures, food and electronics.

⁵⁵ For recent and reliable reviews on Pasinetti's contributions to structural change, see Pitelis (2016), Bellino & Nerozzi (2015), Garbellini & Wirkierman (2014) and Halevi (2016).

composition of the economy, with an increasing variety of goods being offered over time, and the composition of aggregate demand typically evolving along Engel's Law. Imbalances between productivity and demand growth, at the sectorial level, will lead to saturation of demand over time, which in turn induces the creation of new goods and sectors⁵⁶.

A number of studies aimed at introducing insights from different strands of the literature into the canonical Kaldorian cumulative causation model. For the scholar concerned with innovation and technical change, perhaps the KV Law looks exceedingly all-encompassing, and a Schumpeterian touch may be required. Leon-Ledesma (2002a, 2002b), for instance, expands the conventional KV Law, making productivity growth also dependable on the magnitude of the technological gap, the levels of capital accumulation and research intensity. Romero and Britto (2017) delve attention to gauging the importance of output growth and research intensity for productivity growth. It was found that higher research intensity engenders higher productivity growth *if* associated with growth of output. Lorentz (2015), in his turn, develop a multi-sectorial model, allying the evolutionary view on technical change and the Kaldorian approach to economic growth and structural change. The model links technological (micro) dynamics as well as demand-led factors in explaining economic growth and specialization. Still from a Kaldorian tradition, in Araujo and Lima (2007) Thirlwall's Law (TL) is extended to a multi-sectorial approach, with a model allowing for sectorial differences in the income elasticities of demand. On an empirical level, there seems to be certain evidence that sectors featuring high technological content display higher income elasticities (Gouvea and Lima, 2010; Gouvea and Lima, 2013).

Before moving to the next session, some remarks must be said about the service sector. Much of the Kaldorian tradition on economic growth and structural change delves upon the role of industry, and manufacturing in particular, as the 'engine of growth'. However, theoretically Kaldor has never been exactly a 'services-basher'. Rather, he divided services into traditional and advanced ones. The former – mostly urban informal employment in effect – performed a

⁵⁶ It is important to remember that the mainstream literature on endogenous growth (Romer (1990) and Aghion and Howitt (1998), for instance) have also incorporated the creation of new goods and sectors through the existence of a R&D sector, but in those models there is no *endogenous* changes in the *composition* of the economic system (Saviotti & Pika, 2004: 268). Moreover, it is stimulating to contrast this model with an early Kaldorian model of structural change, developed by Cornwall & Cornwall (1994). Here the growth rate changes according to the changing sectorial composition of the final output. In spite of that, each sector features *exogenous* productivity growth rates - they are simply given. Hence the model is not truly endogenous; sectorial growth rates may change considerably due to changes in technical progress.

role similar to agriculture in his framework: poor capacity of generating technical progress and a source of surplus labour for a growing manufacturing base. The latter, however, could be seen as complementary and ancillary to manufacturing: *industrial growth generates the demand for advanced services*, and consequently total employment in services tend to grow as a country industrializes (Kucera and Roncolato, 2016). In the past decades there were important organizational changes, with large manufacturing companies contracting-out many activities which were traditionally performed in-house. This process, often labelled ‘externalization’, implies that many specific services are now performed by specialized service companies, supplying their products to a large array of manufacturing (and otherwise) enterprises. With large corporations focusing on their ‘core capabilities’, activities like marketing, hiring and legal services, to name a few, tend to be supplied by independent (service) firms (Dall’erba et al, 2009). From a Kaldorian perspective, this is simply the division of labour being further extended, and as one could suspect, it is the extent of the markets which will enable such divisions to be economically viable.

From the above points, one can notice that manufacturing and services have become increasingly intertwined. Hence, one cannot tackle the services sector in isolation from the whole productive process. It is precisely the co-location of the plethora of actors involved in the production of high-value added goods that allows companies to explore the constant interactions between manufacturing and the providers of production related-services. The eventual loss of core manufacturing capabilities may even impair the realisation of new products concepts and designs, due to the inability of exploit the synergies between product and processes (Andreoni and Gregory, 2013)⁵⁷.

Notwithstanding such plurality and sometimes even certain fuzziness in the debate on structural change and economic growth, one may identify some common grounds and then wraps this discussion up. Firstly, it is fair to assert that the process of economic growth should not be formulated neither as steady (constant) nor balanced (same output composition), and therefore cannot be grasped by a one-sector aggregate production function. Secondly, structural changes observed in course of economic growth are essentially qualitative ones, not

⁵⁷ For recent empirical studies backing the hypothesis of manufacturing as the ‘engine of growth’ see McCausland & Theodossiou (2012) and Szirmai (2012). For studies backing the hypothesis of services as the main responsible for productivity growth in the long-run see Timmer and de Vries (2009) and Kucera and Roncolato (2012)

quantitative: the emergence of new sectors correspond to new technologies becoming available, and hence cannot be straight-forwardly compared with previous technological paradigms. Relatedly, this qualitative aspect of structural change is much more pervasive and penetrating than a simple reallocation of productive resources from one sector to another: it takes place at all levels of aggregation of an economy, and sub-industrial sectors themselves are very heterogeneous. Thirdly, it is fair to assume that specialization in sectors featuring higher income elasticities of demand, higher degrees of increasing returns and higher technological content are likely to yield faster long-run economic growth. As countries grow, the demand composition shifts towards products featuring higher income elasticities, and specializing in these sectors therefore translates to continuous robust demand, which, via an enhanced KV coefficient, will entail higher technical progress. Finally, it is important to note that the definition or classification of economic sectors will vary according to the theoretical tradition one employs to examine the process of structural change. A pure Kaldorian tradition will categorize sectors according to their distinct degrees of increasing returns to scale; a classification more narrowly based on TL will focus on distinct values for income elasticities of demand; a Schumpeterian-inspired view (Peneder, 2003) is more likely to focus on the technological content of goods produced by each sector. While these classifications follow distinct criteria, it seems they often overlap in actuality, even though the juxtaposition is not always guaranteed.

After reviewing the debate on structural change, we may now turn our attention to the discussion on accumulation regimes. As it will be seen, if one wishes to scrutinize local economic growth, it is mandatory to properly tackle the macroeconomic structure in which different localities are embedded in. A problem with most regional growth theories - especially (but not confined to) the mainstream ones - is its neglect of the macroeconomic environment which undeniably affects growth outcomes at the local level. Moreover, if one agrees that this macroeconomic environment, so to say, is subject to major shifts over time, the discussion on structural change comes to the fore of the debate and cannot be brushed away. Therefore, the following section will delve on the interconnections between accumulation regimes and structural change, and will ultimately indicate how economic growth at the local level is affected.

2.5.2) Accumulation regimes, inter-relatedness, and institutions

The attentive reader may well remember that on the previous chapter, on Kaldorian growth theories, the critique by Setterfield (1997b) on the canonical Dixon-Thirlwall model was presented. The author noted that the model features a very limited incorporation of history as an organizing concept – in fact, history was present only in the form of initial conditions, but would be totally absent *en course* of economic growth - a rather ‘un-Kaldorian’ feature. In addition, and almost as a consequence, relative growth rates evolve in a deterministic fashion, progressing in a self-perpetuating manner. Therefore, this canonical Kaldorian model failed twice: firstly, it did not allow history to influence long-run growth *throughout the whole trajectory* of economic growth, and secondly, it did not represent economic history faithfully, as the existence of growth reversals and catching-ups can be regarded as ‘stylised facts’.

Setterfield’s (1997b, 2002) answer to this dilemma necessarily involves the idea of qualitative changes throughout economic development and structural changes. In order to realize the dynamic increasing returns to scale alluded by the Kaldorian tradition a country must as a matter of course accumulate some specific types of capital - recall the existence of embodied knowledge in capital goods. There are, notwithstanding, also disembodied forms of knowledge, not to mention institutional and organizational requirements which enable the KV Law – a technical relation – to materialize and spur technical progress. The productive process, hence, is composed by distinctive components: fixed capital, human capital, technology, organizational structures and institutional arrangements. All of those components are *inter-related*, and must be combined in order to sustain a given productive process. *Inter-relatedness*, thus, can be defined as the interconnections between all the components of the productive process, and may be said to limit the possibilities for marginal adjustments of any given productive process - at a firm-, industry- or economy-wide level (Setterfield, 1997b). All of those components are established in the past and *en course* of economic development, i.e., they are path-dependent, and become crystalized in the existing productive assets of any given period. They are, therefore, *specific* to a given productive specialization, *historically-determined*, and *inter-related*. It is this final characteristic, in particular, which makes changes in any component alone difficult to be implemented. One cannot simply upgrade one component of a productive process leaving all the others unaltered – they must all be upgraded, so when combined once again they can produce a more advanced output.

Consequentially, shifts in the economic structure of a country request wide-ranging changes and important coordination efforts. The process of structural change – simply upgrading the output composition of a region towards a more elevated degree of returns to scale or income elasticity of demand – may be halted due to *inter-relatedness* issues. Conversely, to promote structural change is precisely to successfully upgrade all the components of a productive process – fixed and human capital, institutional and organizational forms – roughly in tandem, so that eventually the production of the more advanced output can be coalesced. When *inter-relatedness* problems become overwhelming one may well say that a region or a country becomes *locked-in* into a particular, specific, technique of production. The failure to upgrade the whole productive process may condemn a region to become forcefully specialized in sectors featuring low technological dynamism and long-run meagre growth prospects.

It follows from the above reasoning that initial rapid economic growth entails a certain productive specialization, and the inter-relatedness of all the components of the productive process guarantees the realization of dynamic increasing returns alluded by the Kaldorian tradition. Nevertheless, it is precisely this inter-relatedness that precludes *further* structural changes towards a more advanced composition of output, allowing an initially leading region to be overtaken by others which are upgrading their productive bases. Growth reversals and catching-ups processes are explained, thus, within a framework of cumulative causation and structural changes⁵⁸. The problem of ‘too much cumulation’ (Gordon, 1991), leading to ever-increasing gaps between rich and poor countries, is finally properly tackled, and here rapid growth may begets slow growth in the long-run (without recurring to neoclassical notions of diminishing returns)⁵⁹.

It is important to stress that this whole process described above comes to life endogenously, and that in order to explain such process, one must bring back in the notion of *qualitative*

⁵⁸ Methodologically, the conceptualization of economic growth as a path-dependent process, involving series of structural changes, call for what is termed a ‘traverse analysis’. The concept of equilibrium may be retained, as long as the adjustment path towards it influences the equilibrium position itself. Under such circumstances, structural changes are bound to occur in the meantime, and so the level and composition of the effective demand may be altered. The traverse is defined as the movement of the economy outside equilibrium positions, in tandem with various qualitative, structural changes (institutional, organizational, technological, and inter-sectorial). Hence, the process of ‘cumulative causation can be represented as a traverse path within a system that has a ‘centre of gravity’ acting as a weak attractor, and in which the traverse path itself affects the conditions and hence the position of this attractor’ (Setterfield, 2002: p.227). A comprehensive review of the concept of traverse can be found in Halevi et al (2012). For a methodological discussion involving the usefulness of the concept of equilibrium, refer back to Setterfield (1997a).

⁵⁹ Leon-Ledesma (2002b) model, on a rather Schumpeterian vein, includes lock-in effects and technological catching-up in order to tackle the ‘too much cumulation’ problem.

changes which take place throughout an economy's growth trajectory. Long-term growth, as seen, requires structural changes, but interrelatedness may prevent new industries and sectors to arise. This endogenously determined *lock-in effect* may diminish the elasticity of demand for the output mix produced and, following a lower demand, technical progress will stutter given a lowered KV coefficient. Path-dependence is claimed to play a full role here, with history operating as the core organizing concept of the approach⁶⁰.

Pushing further the centrality of history in economic growth, Setterfield and Cornwall (2002) and Setterfield (2002) make the point that economic growth takes place within well-defined historically-specific periods. Clearly echoing the main tenets of the French *régulation* theory (RT) (see, *inter alia*, Boyer 1988a; Boyer, 1988b; Boyer and Petit, 1991; Petit, 1999), growth is theorized as always embedded into a historically specific regime. Each growth episode can be characterized by the canonical Kaldorian cumulative causation scheme, which in turn is rooted into a historically specific institutional regime, or a given number of structural forms.

Before advancing the discussion on structural changes from the Kaldorian perspective, at this point it may be advisable to briefly sketch the main principles versing around the idea of accumulation regimes as posited by the *régulation* Theory (RT). Following the cumulative causation construction, productivity gains dynamics must be associated with demand dynamics. In particular, it is posited the existence of a productivity regime (PR) on the one hand and a demand regime (DR) on the other. The former concerns how productivity gains are generated – innovations, capital deepening, further division of labour and extension of markets – while the latter deals with how the productivity gains are accrued by wages and profits (i.e., functional income distribution) and divided into the major components of aggregate demand (consumption, investments, exports). It is the interactions between the PR and the DR which will enable, or not, economic growth to sustain itself over the course of history. Positive feedbacks between the two regimes may kick-start a process of self-replicating cumulative causation, whereas negative feedbacks may cause an initially fast growing economy to halt its growth process. In general, the sensitivity of aggregate demand growth to productivity growth must be higher than the other around, otherwise a phase of

⁶⁰ Recall that, to the extent the concept of equilibrium might be employed in this kind of analysis, all equilibria are *conditional*: 'There are not determinate outcomes but intermediate positions subject to potential revision by forces that are endogenous to the system. This keeps the possibility open that 'lock-in' might be avoided through human action or *institutional change*, including government policy' (Thirlwall, 2013: p.7, emphasis added).

relentless widening of growth rates differences would be observed (given distinct initial conditions), and we would be back to the ‘too much cumulation’ problem. The attentive reader will definitely notice the parallel with the discussion between the elasticity of aggregate demand to aggregate supply presented before. In a demand-led world, productivity growth (and the natural rate of growth) is an endogenous outcome of the actual rate of growth, which is driven by the aggregate demand.

More crucially, for the *régulation* theory (RT) both the DR and PR are embedded into a wider institutional, encompassing historical context. It is mandatory, therefore, to analyse the overall institutional apparatus in which both demand formation and productivity gains rest on. For Boyer (1988a), any given institutional form ‘denotes a codification of a main social relationship’ (p.71), and suggests a certain ‘invariant and abstract relationship’ (p.72), somehow giving light to the ‘social regularities which channel economic reproduction’ (p.72). Setterfield and Cornwall (2002) interpretation states that any given institutional regime can be defined as the ‘operating system’ (p.71) which provides the social infrastructure on which decentralized agents make their economic decisions. In sum, institutional forms may be understood as the manifestation of certain social relationships, which are relatively stable over time and historically determined. Institutional forms are detected, then, by observing the different institutional *stylized facts* of each historical period. It is within these institutional forms that actual growth episodes (regimes) takes place.

The interactions between the DR and the PR, embedded in a set of institutional forms, will yield a given accumulation regime, which may be captured empirically by stylized facts versing on economic growth in certain historical periods. According to Boyer (1988a), accumulation regimes can be defined as ‘the whole set of regularities which allow a general and more or less consistent evolution for capital formation’ (p.71). Any cumulative growth pattern may, thus, be characterized as relatively stable configurations of the economy. It is the institutional characteristics of a given epoch, thence, which will determine the key parameters of the cumulative causation equations. Some institutional arrangements will be more likely to yield higher values for the KV coefficient, for instance⁶¹, while other arrangements will be more likely to depress its value, along the *whole* accumulation episode. In other words, the Kaldor-Verdoorn Law itself may be subject to growth-inducing (or growth-depressing)

⁶¹ Others key variables include: the growth of the world’s income, the growth of autonomous expenditures other than exports, and the autonomous productivity growth.

institutional changes: structural changes towards new institutional forms work by (re)defining the PR and the DR, not by operating within them (it changes the ability of the economy to realize dynamic increasing returns). What needs to be emphasized here, as Petit (1999) does, is that economic growth takes place ‘in a specific institutional context, a configuration of structural forms’ (p.228).

Institutional arrangements tend to be stable to a certain extent, and are not altered in the same pace as short-run business cycles. Yet less frequently, *institutional changes*⁶² do occur, and with it the key parameters characterising specific growth episodes. When that happens, we may be leaping from one accumulation regime (embedded within a historic specific institutional framework) to another. In other words, when a given accumulation regime experiences a breakdown in the previous growth trends, we may be faced with what Boyer (1988a) dubs a structural crisis. This comes to be when the very functioning of the previous accumulation regime ‘comes into contradiction with the existing institutional forms, which are then abandoned, destroyed, or bypassed’ (p.76). With the accumulation regime – anchored on specific institutional forms - not being able to reproduce itself anymore, a structural crisis takes place.

Capitalist growth, therefore, may be thought as a progression of growth episodes, ‘each characterized by a Kaldorian cumulative growth schema embedded in a historically specific institutional regime’ (Setterfield and Cornwall, 2002: p.71). Typically, the RT will apply this rationale in order to understand the transition from the ‘Fordist Regime’ to a ‘Post-Fordist Regime’ in advanced economies. Mirroring this periodization, Setterfield and Cornwall (2002) aims to shed a light on the transition from the post-war growth period, dubbed the Golden Age (GA) period, to the slower growth track record of the subsequent years, dubbed the Age of Decline (AoD). As such, the two periods have as hallmarks distinctive *institutional stylized facts*, which in turn lead to distinctive growth performances.

Therefore, these broadly defined institutional arrangements tend to be the main conduits of economic growth in the long-run, as they have the power to determine the parameters of a discrete growth episode. In order to move successfully from one growth episode to another, then, conducive and suitable institutional forms are required. Bearing in mind that different stages of economic growth may require distinct institutional arrangements, *the idea of*

⁶² Institutional changes will be debated in full in the next chapter

structural changes becomes primarily institutional in nature, as it has the capacity of reorganize the broad macro-environment or ‘operating system’ within which the classical Kaldorian mechanisms of growth takes place.

Returning to the discussion promoted by Setterfield (1997b, 2002), it may be postulated that the problems arisen from interrelatedness can be interpreted as a source of negative feedbacks between a given PR and DR, which in turn block further structural changes. As a result, we are likely to observe a falling KV coefficient, which, given the lack of further alterations on all the components of the productive process – institutional forms included – will not be spurred again. A new accumulation regime is entailed, featuring lower levels of technical progress (a less dynamic PR) and output growth (a less robust DR). From Setterfield and Cornwall (2002) perspective, it is the lack of further structural changes involving all the components of the productive process which explains, endogenously, how the previously leading region now experiences sluggish performances. In Boyer’s (1988b) line of reasoning, it is the very success of a given regime which engenders a slow shift in key structural parameters, which will eventually lead to an unstable configuration of the system and a crisis of accumulation. The way forward out of this structural crisis is ‘neither automatic nor deterministic, but would depend upon innovations, social and political struggles, trails and errors, as well as chance’ (Boyer, 1988b: p.628).

The identification of distinct accumulation regimes, each governing dissimilar values for key parameters of each growth episode, has been widely adopted within the heterodox tradition. The typical example of the RT is, as hinted above, between the ‘Fordist’ and ‘Post-Fordist’ eras⁶³. Often it can be claimed that there was a structural crisis by the end of the first period, which provoked a fall in the value of the Kaldor-Verdoorn coefficient for all advanced economies. Recently, Ciarli et al (2017) expands this classical comparison, also employing structural and institutional determinants in order to distinguish one growth regime from the other and stressing the shifts between the two growth patterns. The novelty of this study is to model a multi-sectorial economy, with the structure of consumption (the composition of final consumption among different sectors) playing a key role in shaping the final sectorial concentration and functional income distribution of the economy.

⁶³ In Boyer (1988b) it is presented the succession of four stages of capitalist evolution: the late nineteenth century period, the inter-war period, the post-second world war period and the more current period initiated after 1973.

2.5.3) Accumulation regimes and regional growth

Tackling the local level, Roberts (2004) provides an important contribution. The scholar aims to study the growth performance of counties in Great Britain (GB) from 1977 to 1993. Roberts assumes that growth may be characterized by the typical cumulative causation scheme, but embedded into wider accumulation regimes⁶⁴, as discussed above. In particular, regions are assumed to feature heterogeneous structural characteristics, so that different regions may display different growth performances in distinct accumulation regimes. Following the overall shift in accumulation regimes the advanced economies arguably experienced after the crisis of ‘Fordism’, Roberts (2004) hypothesizes that in the early 1980s the UK also undergone a regime shift: firstly, the macro-policy swung from active stabilization macro-policies and state control and regulation towards liberalization and rules-based monetary policy; secondly, the technological paradigm witnessed the emergence of ICTs and the *pari passu* relative decline of traditional manufacturing. As a result, the GB started to experience increased regional inequalities, reversing the previous trend of relative regional convergence. The new emerging sectors, like legal and financial services and high-tech manufacturing, require higher levels of human capital, and counties endowed with higher human capital in the late 1970s (and also less specialized in the old blue-collar, traditional industries) could specialize into these emerging industries. This regional specialization in the emerging sectors of the British economy then set in motion a process of cumulative causation, with localised increasing returns reinforcing those initial advantages, by attracting more highly-skilled labour and enlarging its ‘home market effect’. The opposite, also cumulative process, took place in the laggard regions, featuring lower levels of human capital and then out-migration.

The study by Roberts (2004) illuminates how the idea of accumulation regimes can be fruitful when analysing economic growth at the *local level*. From the perspective of localities, macro-level policies and structural changes may be perceived as external variables, in the strict sense that it cannot be driven or shaped actively by decision-making at the local level⁶⁵. Moreover, it highlights that within a country regions are actually structurally different, and even if the

⁶⁴ The author employs the expression ‘growth regimes’, instead of accumulation

⁶⁵ Assuming, of course, the locality in case is small in relation to the national level, so it cannot influence the entirety of the macro-system.

Solowian process of convergence takes place, it is contingent to the match between the structural characteristics of localities and macro-level variables.

The sort of analysis accomplished by Roberts (2004) is a daunting task for the canonical neoclassical theory to promote, given the assumption of the non-existence of structurally different growth episodes in capitalism. The often quoted study by Glaeser et al (1992), for instance, omits precisely the shift in accumulation regimes and structural changes the American economy went through between the mid-1950s and late 1980s, the time-frame of their inquiry. Brezis and Krugman (1997), in their turn, are able to advance more when aiming to understand cycles of growth and decline of different cities. Applying the NEG modelling strategy, the authors assume cities face a life cycle, driven by the rise, maturity and finally the fall of technologies. A city leadership is explained by the localised learning externalities and agglomeration economies reviewed before, and hence productivity is modelled as an increasing function of cumulative experience within a city. Nevertheless, occasional new major technical changes may emerge, and these new technologies are assumed to be unrelated to previous ones. As a result, the preceding accumulated experience by industrial agglomerations becomes irrelevant within this new technological paradigm. Consequently, a fast growing city becomes a laggard.

The model is insightful in its attempt to connect changes in structural paradigms (technology, in the case) with the relative performance of localities. However, new technologies are assumed to be exogenous, as they appear as ‘manna from heaven’, and there is no clear conceptualization of technological regimes; moreover, there is no demand-side considerations on the model. Contrast this view with the one exposed by Saviotti and Pika (2004), in which structural changes are explained by demand saturation in previous sectors, with entrepreneurs seeking actively to develop new products and sectors. In Brezis and Krugman (1997) solely supply-side factors end up explaining the fall of regions: high wages, rents, and prices (congestion costs, in general) makes the exploitation of a new technology prohibitive; hence, given its accumulated experience, the city remains more productive with the old technology. Meanwhile, newer and cheaper locations emerge, employing a new techno-paradigm and forging the way ahead. To a certain extent, this is a regional application of path-dependent, multiple equilibria models by the mainstream. On the other hand, the models and rationale developed by Setterfield (1997b, 2002) seem to be richer and more complete. Here we have the cumulative causation schema leading to a virtuous circle, but this success creates inter-

relatedness of the *whole* productive process, and the region becomes locked-in into a given technological base. The reasons underlying the fall of regions are more complex and not simply explained by the random arrival of a new technology coupled with high costs in one region. In fact, as Brezis and Krugman (1997) admit, ‘it is somewhat unclear how to think about the *disadvantages* of existing cities and the reasons that such established centre do not themselves shift immediately to new technologies’(p.370, original emphasis)⁶⁶. The answer given by the Kaldorian tradition will delve upon the notion of inter-relatedness⁶⁷, and, more crucially for us, it builds the required theoretical bridges for a coherent discussion on the role of institutions and institutional changes in economic growth and development, as well as it invites the notion of *historically*-determined accumulation regimes, as discussed above.

2.5.4) Concluding remarks on structural change

The first part of this section (2.5.1) delved upon the importance of specialization in sectors characterized by higher degrees of increasing returns, income elasticity of demand, and technological content. Without this sort of progressive sectorial specialization, it may be argued, countries and regions most likely will face gloomy prospects on long-term economic growth. Nevertheless, one cannot hurriedly assume straight away that the best strategy is to promote sectorial policies aimed at one or another specific sector, like the electronics (found to be highly productive in the studies reviewed above). Fagerberg (2000) cautions that leading technologies change along history, as well as their entry conditions. Therefore, a country must fathom the actual requirements of entrance in one specific sector and analyse whether the existing national assets and capabilities are appropriate. Amable (2000), more broadly, underscores the role of distinct influencing determinants (like education) when implementing successful sectorial policies, calling for the notion of institutional complementarity in economic development. This last point works as a bridge to the second part of this section (2.5.2), in which the importance of *institutional arrangements* has been emphasized if a region wishes to break the negative effects of inter-relatedness and possible lock-in effects. In particular, institutions themselves are liable to suffer from lock-in effects, forestalling, thus, further

⁶⁶ Neary (2001: 550), reviewing the NEG literature, ironically remarks: ‘while costs may be fixed they are never sunk, so firms, industries, and even cities are always free to move. Footloose cities seem particularly odd.’

⁶⁷ The incorporation of accumulation regimes and inter-relatedness also allows us to better understand the ability (or otherwise) of cities and regions to reinvent themselves, enabling a locality that might have been depressed for years to breakout from a phase of continuous decline. In the UK, Glasgow is a case in point. Once considered the engine room of the British Empire, it was hit particularly hard in the 1970s, but from the late 1980s onwards it managed to reinvent itself based on services and more modern manufacturing.

technological advancements. A given dominant productive process may demand a specific institutional arrangement, which becomes very supportive of the prevalent productive process. However, in order to promote technical change and incorporate different (new) economic sectors, a distinct institutional arrangement may be required. In this sense, the economy may be found stuck in an ‘institutional lock-in’ effect (Setterfield, 2010). Finally, section 2.5.3 delves on the literature combining heterodox insights such as cumulative causation and accumulation regimes with regional growth. The contribution by Roberts (2004) is of paramount importance, because the author compares the growth performances of distinct regions within the same country, assuming there is a national level accumulation regime which is common to every single region, but each region differs from each other in their structural characteristics. Hence, the concept of accumulation regimes, traditionally employed at the national level, proves to be useful also when the scholar is concerned with the regional level. The ideas articulated by Roberts (2004) will be of great relevance for this thesis. The original analytical framework employed in this thesis, to be introduced in chapter five, relies to great an extent on the discussions presented in this section. But before introducing this framework, one needs to first examine the debate on institutions (chapter three) and on the specificities of the local states in China (chapter four).

2.6) Summary and conclusions

This chapter started with a broad review on growth theories and moved to a discussion on structural change. In both parts of the chapter, debates on regional aspects of the theories and related empirical studies sought to be emphasized, whenever possible. In relation to growth theories, the Solow growth model, mainstream growth theories and a heterodox (Kaldorian) alternative were presented. The focus on regional growth led this thesis to also review the literatures on urban economics, NEG and regional growth under Kaldorian growth models. Which insights each of these theories can provide to the scholar concerned with *regional* growth?

Adopting the Solow model perspective at the regional level, one can expect that a region characterized by a lower level of K/L ratio and therefore lower real wages would attract capital from more advanced regions. The best policy recommendation for a country would be to encourage as much as possible the free mobile of inputs. Under an ideal scenario (regions characterized by the same production function and freely available technology), the free

mobility of capital and labour would bring their K/L ratios together and the poorer region would catch-up with the richer one. Institutions and public policies in general have a very limited role to play.

The literature on urban economics innovates in that it works with localised increasing returns to scale, in particular in the form of knowledge spillovers. Human capital external effects are considered the main conduits for economic growth to take place, and human contacts and agglomerations the main mechanism responsible for containing economic growth geographically. It follows that public policies and institutions capable of enhancing a region's level of knowledge creation – normally through investments in human capital and in R&D – are essential. In order to facilitate the diffusion of ideas and knowledge, the literature also tends to emphasize the importance of the geographical agglomerations of human capital, suggesting the necessity of a region to concentrate highly skilled workers. Moreover, the debate on specialization vs diversification, yet inconclusive, seems to suggest that a region's productive structure matters for its ability to sustain economic growth. Whether or not specialization or diversification is the most important factor will depend on other sectorial, temporal and spatial characteristics (De Groot et al, 2009). As this strand of literature normally relies on cross-sectional analysis, the studies tend not to delve into the particularities of different structural configurations of many regions. A methodology reliant on case studies perhaps would be more suitable if one wishes to scrutinize the specific productive structure of a specific region.

The approach pioneered by the NEG literature emphasized other two sources of localized increasing returns to scale: common inputs for production and common labour markets. The literature tends to highlight the virtuous circles set in motion by these externalities, plant-level increasing returns and the reduction of transportation costs. 'First nature advantages' (favourable physical geography and resource endowments, and beneficial historical accidents) are considered to be important in determining where a successful economic agglomeration will initially take place, and once certain advantageous initial conditions are established the combination of localised increasing returns will work cumulatively and explain further industrial concentration in this region. Hence, regions featuring more advanced initial conditions will benefit more from lower transportation costs and the combination of agglomeration forces. When carrying out a comparative case study, it is expected that a richer

city will always benefit from the overall reduction in transportation costs and from the attraction of specialized suppliers and labour force.

The mainstream literature applied to China has normally tried to test the magnitude of the three Marshallian externalities in Chinese cities or other spatial units. Given the *hukou* system, which essentially represents a barrier to the free mobility of labour, one hypothesis is that cities in China may be undersized. Au and Henderson (2006), for instance, work with the idea of an inverted U-shaped function for cities, with a given city real output per worker being a function of the local non-agricultural employment. When the city's population is still small, all the three sources of Marshallian externalities can be exploited and the economy is below its optimal size, meaning the attraction of more workers would be translated into higher output. However, as the city grows diseconomies of scale and congestion costs kick in, and these negative effects eventually outweigh the positive externalities.

Au and Henderson (2006), working with data for 1997, found that 43% of prefecture-level cities in China lie to the left of their peak points, that is, 43% of cities are significantly undersized. Their conclusion is that the *hukou* system causes high economic losses nationwide, as populations in low-productivity locations are restricted in their ability to move to high-productivity locations and exploit fully the basic agglomeration economies inherent in urbanization.

This sort of study is interesting for the scholar working with the mainstream approach, but as seen before, many caveats can be levelled against this body of literature. Here it would be critical to highlight that the study assumes an unchanged K/L ratio – i.e., no technical progress. For the scholar concerned with the dynamic nature of economic growth this is a serious caveat. Recall the emphasis the Kaldorian literature gives to learning by doing and technical change (via the KV Law), reflected in the concept of dynamic increasing returns, and also the importance of structural change amid the process of economic growth (section 2.5)

Chan et al (2008) investigates whether the largest Chinese cities (Beijing, Shanghai and Tianjin) have diversified or specialized their productive structure. The authors found out that through the 1993-2001 period these three cities increased their absolute diversification, but as the whole country also diversified massively during this period, when one takes the

normalized index (weighted by the national total employment), these cities actually become more specialized, or less like the country in the aggregate. As seen before, in section 2.2.2, this sort of study is inspired by the debate over specialization vs diversification, and as the meta-analysis by De Groot (2009) suggests, the great regional sectorial and temporal heterogeneities means that this type of study can only provide very broad insights to the policy-maker. Moreover, the role of demand for economic growth and regional specialization, dear to the Kaldorian literature, is simply ignored. This point will be resumed in chapter five, when the original framework developed for this thesis is presented.

The Kaldorian alternative, in its turn, works with a more sweeping conceptualization of localised increasing returns, emphasizing learning by doing, specialization (further division of labour) and technical change. As seen before, this broader conceptualization underscores a the ‘macro-phenomenon’ nature of the concept, privileging the interlacing of all the sources of increasing returns rather than specific sources. Likewise, to tackle regional growth from this perspective means to work with broader concepts such as the KV coefficient and the KV Law. The empirical strand of this literature applied to regional growth in China has resorted to, as discussed in section 2.3.6, measure the degree of localized increasing returns in the country, the regional KV coefficient and the validity of the KV Law. Hansen and Zhang (1996) tested the KV Law at Chinese provinces between 1985-1991 and confirmed its validity. Wang (2009) utilizes provincial level data between 1985-2007 to test Kaldor’s three growth laws, with the advantage of controlling for spatial autocorrelation, and confirms the validity of the laws and the strong presence of increasing returns to scale in the industrial sector. The regional data allowed the scholar to gauge the significant spatial dependence existent in China: economic growth in one region favours neighbouring regions, even if central and western provinces cannot benefit much from spatial spillovers due to their relative lack of capital and skilled labour.

This sort of empirical study is still very broad and methodologically still reliant on cross-sectional analysis, obfuscating the details and specificities of each region. It is also unable to give one step further and inquire about the possible determinants of variables such as the KV coefficient. In order to so, the scholar must delve into the possible structural determinants of these variables, always emphasizing the demand-led nature of productivity growth (and the KV coefficient itself) and hence of economic growth. The Kaldorian approach suggests that

these key determinants of regional growth will ultimately depend on broader arrangements, governed by institutions.

As seen in section 2.5 (structural change), and chiefly in section 2.5.2, *institutions* play a crucial role if a region wishes to proceed with the process of *structural change*, undermining the negative effects of inter-relatedness and possible lock-in effects that are likely to manifest with time. This is because institutional arrangements must be compatible with a specific productive process (and its attached technological requirements), therefore for a region to sustain the process of structural change over time its institutional arrangements must evolve accordingly. In other words, institutional arrangements are required to boost the value of the KV coefficient for each growth episode.

It is important to recall Roberts and Setterfield (2010) conclusion that the mechanisms responsible for explaining regional growth are very context-specific, and therefore *regions should be analysed within their particular demand and productive structures* they are embedded in. That is another manner to say that, employing the RT terminology, economic growth will depend on the interactions between the DR and the PR. As the national aggregate demand may change over time, and new, more technologically advanced economic sectors arise continuously, the search for ‘one-size-fits all’ recipes for (regional) growth may become elusive. Methodologically, this invites the scholar to bet more on case studies rather than on cross-sectional econometric studies.

The work by Roberts (2004) is very significant in that it welds core notions introduced by the RT (such as accumulation regime) with economic growth at the regional level. Traditionally, the RT literature is mostly concerned with the national level. Roberts (2004) shows that the scholar must scrutinize the structural characteristics of a region and its match with the country’s national level macro variables. The analytical framework developed in chapter five will follow the footsteps of this type of reasoning, but some considerations must be placed before that.

Firstly, the debate on institutions, already introduced in section 2.5.2., must be extended. How to properly theorize institutions, and how to promote institutional changes? In particular, as seen, the RT underlines certain *institutional forms* in which both the demand and productive regimes are embedded in. Nevertheless, the discussion on institutions so far was very broad

and lacked specific details on the possible institutional forms and arrangements, and how they are related to accumulation regimes. The next chapter will aim to fill this lacuna. Secondly, one must leave the theoretical debate aside temporarily and delve into the specific debate about the role of local states in promoting economic development in contemporary China. This will be done in chapter four. In chapter five the discussion, both theoretical and China-specific, will be resumed, and the original analytical framework to employed in this thesis will be presented.

Chapter 3: Institutions

3.1) Introduction

The previous chapter, dedicated to growth theories and structural change, indicated in many passages that more than simply factor inputs and technological variables are necessary in order to an economy to grow at robust rates over time. While Solow growth model does not make any explicit reference to institutions and organizational arrangements, the new growth theory (NGT) suggests that without education and innovation a country cannot prosper. What is more, due to market failures in those areas, arising from the divergence of social and private returns, under-provision of knowledge and human capital is expected to be the norm in a market economy. Hence, governments may be called into action in order to ‘fix’ these market-failures. If one agrees with the preposition that we live in a ‘knowledge-driven economy’, then, market-failures are rife, and so are the opportunities of Pareto-improving government interventions. The NGT legitimizes state intervention in the narrow scope of the provision of education and innovative activities.

The notion of structural change, in its turn, provides a further rationale for state intervention. More specifically, the question is whether the process of structural change hinted previously will emerge as the outcome of the spontaneous forces of the market, or will require the conscious actions and interventions of institutions operating outside the pure market logic. Recently, even some mainstream economists started to advocate some activism by the state in this matter. Stiglitz and Greenwald (2015) argue that the process of structural change entails large-scale transformations, with the fading of old and traditional sectors and the rise of new and modern sectors. Resources having to move from one sector to another means firms facing large sunk costs, and hence typically suffering large capital and income losses. Moreover, due to capital markets asymmetries, firms usually will face a credit constraint when trying to move across sectors, or, even worse, new firms, from the urban-modern sector, may face credit constraints in their initial phases, aborting their emergence. Finally, the workforce typically employed in traditional sectors will not be adequately suited to perform certain tasks at the modern sector – this lack of appropriate skills may impede or drag down the process of

structural transformation. Overall, the combination of a whole set of market failures, such as increasing returns to scale, externalities, coordination failures and information asymmetries means that the social returns to industrialization by far exceed private returns to private investors, opening the door for state activism.

It is not simply a justification for the state to act that matters, but in fact the acknowledgement that distinct organizational and institutional arrangements other than the market *per se* may be fundamental causes of capitalist growth. In other words, the free interplay of self-interested individuals aiming to maximize their utility functions, bereft of any institutional or organizational framework (other than an idealized free market) cannot explain or even account for long-term economic growth. Institutions matter, and must be incorporated into the discussion of economic growth.

Framing the question from the Kaldorian perspective, an economy may get ‘stuck’ into certain sectors/technologies inherited from the past. This might happen as a result of the *inter-relatedness* of different components of a given production process (physical and human capital, specific knowledge involved, and the type of public goods available). This sort of inter-relatedness creates barriers to change one component of the productive process without altering (all) the others. Therefore, technical change may become overly expensive and unfeasible to be coordinated by decentralized agents, as rational as they can be. The economy has, thus, become ‘locked-in’ in a particular technological base. That is a clear example of how a given set of initial conditions and the ‘path-dependence’ generated from it may upset the process of structural change towards sectors featuring higher increasing returns to scale. The same rationale can be applied to institutions: a given dominant productive process may demand a specific institutional arrangement (say, a particular mix of public/private R&D expenditure, supply of collective goods, laws on intellectual property rights and specific regulations on market structure), which becomes very supportive of the prevalent productive process. However, in order to promote technical change and incorporate different (new) economic sectors, a distinct institutional arrangement may be required. In this sense, the economy may be found stuck in an ‘institutional lock-in’ effect (Setterfield, 2010). In spite of a different reasoning in relation to the nature and mechanics of long-term economic growth, the Kaldorian perspective shares with some NGT and mainstream economists the need to integrate the debate on institutions into a coherent framework of long-term growth. Both

traditions recognize the importance of institutions on growth, but do not have an explicit institutional foundation.

Aiming at tackling this shortcoming, different theoretical schools have emerged, in different periods of time, with the objective to deal with the thematic of institutions heads on. Gagliardi (2017), the editor of the special section on institutions and economic change issue published recently by the Journal of Comparative Economics⁶⁸, opens the issue by classifying the scholarship on institutional concerns in economics into two broad approaches: one, pioneered by Douglass North and other scholars associated with the New Institutional Economics (NIE) camp, and a second one associated with Masahiko Aoki and termed ‘comparative institutional analysis approach’. Needless to say, that is not the only possible categorization available, and certainly there are other strands of thought in the economics profession (not to mention important contributions on institutions made by non-economists)⁶⁹. However, the proposed dichotomy fits well the scope of this thesis and the purpose of this chapter. After this introductory section, the chapter will move to a brief review on the contributions made by the broad camp of NIE and then will proceed to a review on the work associated with the notion of ‘institutional complementarity’, related mainly with the ‘comparative institutional analysis’ approach. The last section will concisely summarize the main take-home messages of the chapter and broach the subject of the next one.

3.2) The New institutional economics (NIE)

The New Institutional Economics (NIE) approach is considerably broad and it would be foolish to attempt a thorough exegesis on this body of literature. The approach, often associated with the works of, *inter alia*, Douglas North, Oliver Williamson, Mancur Olson and Ronald Coase, is extensive and far-reaching, and may even be claimed to be interdisciplinary. Here it will be attempted an overall exposition of what I believe are the main tenets, concepts and rationale governing this school of thought.

⁶⁸ The issue is available on-line at <http://www.sciencedirect.com/journal/journal-of-comparative-economics/vol/45/issue/1>

⁶⁹ For instance, the contributions of evolutionary economists on (national) systems of innovation can be placed under the broad umbrella of institutions (see, for instance, Freeman (1995)). Outside economics, geographers have long incorporated institutional elements on their understanding of economic geography (Amin, 2001)

Dosi et al (2016) provides a reasonable starting point, in their recent review of the scholarship on institutions and economics. The mainstream, NIE approach, starts with a set of ‘primitives’ (or assumptions) from which institutions and institutional change are derived from. The basic initial assumptions of the NIE, roughly stated, are individual preferences, given endowments and given technologies. Individuals are rational, and meet in the market in order to establish win-win exchanges. However, they may encounter some obstacles when crafting their trade deals (for instance, contract enforcements problems or lack of information). In order to overcome such obstacles, rational individuals devise some specific institutions to deal with those specific problems and thus enable trade to ensue more smoothly and efficiently.

From the onset, one can notice the centrality and ever-existence of markets (Williamson’s famous dictum, ‘in the beginning there were markets’). Individual behaviour is assumed to be driven by market rationality, and it is the economic self-interest the chief (if not the only one) motivational purpose individuals have. Markets alone have the potential to always fulfil the economic needs of individuals, but in case market failures exist (i.e., rendering a sub-efficient allocation of resources), rationally devised organizations and institutions are brought to life. Markets, thus, are theorized as the most efficient institutions by default, with other institutions playing the role of a second-best. This last point also reveals the functionalist approach to institutions NIE employs: institutions emerge due to specific problems individuals perceive, and are created specifically and simply in order to subdue them. The take-home message is simple:

‘in order to understand institutions we need to reconstruct the fundamental economic problem that they are addressing and to reconstruct the interactions among fully rational, self-interested individuals that has brought them into being’ (Dosi et al, 2016: p.4).

If markets are placed at the heart of the NIE paradigm, and market failures the originators of institutions, one must scrutinize, theoretically, the precise mechanisms governing the interaction among individuals within the market. Essentially, it is posited that the usage of the market, or, more precisely, the price mechanism, is not cost-free. Following Ronald Coase, this cost is conceptualized as a transaction cost⁷⁰. They can assume a multitude of facets, like enforcement, searching and information, or bargaining costs (Ankarloo, 2002). Fundamentally, transaction costs are deemed to be very pervasive, and a world with zero

⁷⁰ There are different definitions of transaction costs (and, as it will be seen later, this poses a problem to the whole NIE theoretical framework). North and Wallis (1994), for example, define it as ‘the cost of purchasing inputs, monitoring the production process, and selling output’ (p.609).

transaction costs is presumably unreal. In such a world, the economy would be frictionless, and the existence of core capitalist institutions like the firm simply would be pointless. Institutions, then, are created with the explicit objective of lowering or circumventing transaction costs inherent in economic exchange. Transaction costs are indeed the conceptual cornerstone in which the NIE theoretical architecture rests on. But notwithstanding its paramount importance, there are other auxiliary concepts.

Property rights, and in particular ownership property rights, also plays a major role in the NIE tradition. Any asset by definition is governed by an associated right to its ownership. The right of ownership of any given asset consists in the right to use, appropriate returns and exchange it (Ankarloo, 2002). The exchange and trade of goods and services, hence, is actually the exchange of certain ownership property rights by others.

Property rights, however, may assume different forms, ranging from a communal or collective structure to private individual property rights. It is often argued that throughout history some *specific* forms of property rights emerge in order to minimize transactions costs. *Private and exclusive* property rights, in particular, are believed to have emerged due to its ability to lower the negotiating costs associated with the previously prevailing communal property structure (Meramveliotakis and Milonakis, 2010). However, this invites the question of how the private and exclusive property rights will be guaranteed in practice. The answer is that society also needs to devise institutions which will delineate a compatible property rights structure, protected and enforce it, punishing agents who bend the rules. Therefore, an appropriate property rights structure and appropriate institutions will minimize the overall level of transaction costs, allowing the benefits from trade and exchange to materialize to all the parts involved.

This last point logically leads to the discussion of institutions, as they are seen as the engine capable to delineate and enforce property rights, hence affecting transaction costs and ultimately economic growth. As institutions are animated by the actions of rational agents aiming at easing their operations at the market, it is fair to regard institutions as a sort of an assortment of guidelines and protocols presiding over the interactions of agents in their exchange undertakings. Indeed, the classic definition is given by North (1990): ‘Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction’ (p.3). Hence, institutions are a set of rules devised by rational

actors who created them in order to reduce transaction costs. However, once these institutions (the rules of the game) are set and are fully working, they also affect individuals who are up to play the game. From this reasoning it follows another key concept in the Northian world: that of organizations, defined as the ‘players of the game’. In North’s (1994) words: ‘...organizations and their entrepreneurs are the players. Organizations are made-up of groups of individuals bound together by some common purpose to achieve certain objectives’ (p.361). This dichotomy between institutions and organizations is pivotal for many NIE scholars. As Meramveliotakis and Milonakis (2010: p.1051) describes, the former concept examines the ‘background conditions’, the ‘institutional environment’, while the latter examines the ‘mechanisms of organizational structures’, the ‘institutional arrangements’. North is mostly concerned with the former, and Williamson mostly concerned with the latter⁷¹.

As one could expect, several criticisms have been levelled against the NIE approach. Here it would be worthwhile to follow Dosi et al (2016) in his characterization of an alternative approach to institutions, which he dubs generically ‘strong institutionalism-cum-political view’. This approach broadly encompasses the tradition initiated by the ‘Old Institutionalists’, like Thorstein Veblen, followed by John Kenneth Galbraith, Karl Polanyi, many evolutionary economists and more recently by Geoffrey Hodgson. Here the ‘primitives’ of the theory are quite different, and to some extent even opposite to the NIE perspective: a key assumption is the ever-existence of ‘factors of socialization’, comprising institutions of many kinds (families or tribes, for instance). So instead of the Williamsonian premise of ‘in the beginning there were markets’, with institutions emerging as derived entities from individuals, here the rationale is almost the opposite: there have always been some sorts of institutions, which have the property of influencing the preference of individuals. The gist is to perceive institutions as comparably invariant and path-dependent over time, and individuals’ preferences and motivational purposes being reflexive and adaptive to the environment there are embedded in, i.e., to the main institutions in case. The whole NIE’s emphasis in exchange relations and self-seeking economic interests is relaxed. In fact, *non-exchange* mechanisms of interaction among agents are usually highlighted, with the customary assumption that, while exchange relations have always had its role to play (with its degree of importance varying over time), it has never been the only one (not even nowadays), and perhaps not even the dominant one. This pluralist view on the motives of human interactions allows the ‘strong institutionalism-

⁷¹ Williamson’s discussion on firms’ decision on the most efficient organizational form, like the M-Form or the U-Form, is a classic example.

cum-political view' to take concepts such as authority, violence and power more seriously, i.e., scrutinizing these topics in their own terms, and not as simply a derivation from other basic premises governing the interactions of maximizing individuals.

Take the idea of power, for example. For the NIE, recall that the basic unit of analysis is still that of transactions, and hence 'power' does not have an independent, autonomous analytical stature – it is still a *derived* category, from the basic 'primitives' of the theory. It is often perceived as the apparent *result* of certain asymmetric transactions, entertained at an *interpersonal level* and among *asocial maximizing individuals*. The alternative view, on the other hand, comprehends this concept as a fundamental aspect of institutions and organizations, governed by different mechanisms other than that of exchange relations. Power, to be properly tackled as a concept, must be perceived as embedded in certain social structures and within broad social relations. Consequently, power is an analytical category *per se*, and not simply a derivation. It is posited that the narrow-minded focus of NIE on exchange relations prevents it to actually appreciate the dynamics and evolution of organizations and institutions (Dosi et al, 2016) and thus (historically determined) relations of power and conflict are excommunicated. Essentially, the alternative view holds that authority and the wielding of power are pivotal characteristics of institutions and organizations, and they cannot be explained solely by exchange mechanisms and the transactions rationale.

In sum, the alternative view holds that institutions are the 'primitives' of the theory, and the basic unit of analysis are the organizational forms *per se*, with their routines and associated behavioural patterns. In this sense, even the idea of rationality and self-interest – central to neoclassical and NIE – are derived matters, contingent on (very) specific historical formations. Institutions, in their turn, are formed partly unintentionally, resembling a self-organization process, and not as the rational response to some type of cost minimizing calculation. They are fundamentally the 'carriers of history' (David, 1994), reproducing themselves over time regardless of their efficiency attributes (Dosi et al, 2016).

In spite of all the aforementioned caveats and limitations, the NIE rationale has been employed in order to investigate historical cases of institutional change and its relation with economic development. It would be futile to try to cover all the existing literature on this regard, so here it will simply be reviewed one of the currently most popular avenues of research attached to NIE, led by Daron Acemoglu and his associates (see, *inter alia*,

Acemoglu, Johnson and Robinson, 2004; Acemoglu and Robinson, 2012). Acemoglu et al (2004) provides a summary of their main argument: Briefly, economic institutions shape the structure of incentives individuals in any society face, determining, therefore, the potential output of the economy as well as its distribution among different segments of society. Economic institutions, however, are endogenous, and set by political institutions. This distinction between economic and political institutions can be regarded as an innovation within the NIE paradigm (Dosi et al, 2016), but in fact both obey the same logic: political institutions are the rules governing the power of different social groups, operating in a manner to ‘determine the constraints on and the incentives of the key actors, but this time in the political sphere’ (Acemoglu et al, 2004: p.4). Political institutions, in their turn, are endogenous to the political power of distinct groups in society. Political power can be divided into two headings: ‘de jure political power’, referring to that power emanating from the prevailing political institutions, and ‘de facto political power’, referring to the ability of segments in society, regardless of being contemplated by any given political institution, to ‘revolt, use arms, hire mercenaries, co-opt the military, or use economically costly but largely peaceful protests in order to impose their wishes on society’ (Acemoglu et al, 2004: p.4). The latter has two sources: the ability of acting collectively (i.e., solving its collective action problem) and the actual economic resources the segments controls.

In sum, *political institutions* and the *distribution of resources* are the variables determining economic institutions and hence economic performance. There are two channels operating: Firstly, political institutions have the ability of shaping the distribution of the ‘de jure political power’, which in turn will mould the preferences for economic institutions. Those in privileged positions of political power most likely will devise rules of the political game (the ‘de jure political power’) which allows them to maintain their prevailing hierarchical position. In case a narrow elite captures most of the power, it will oppose the establishment of clear and well-defined property rights (as it may empower a broader segment of society). The lack of clear and well-defined property rights, however, undermines economic performance. There is a clear mechanism of path-dependency here, with an initial situation of wealth inequality being reproduced over time. Then only the ‘de facto political power’ can break the cycle. Precisely, the distribution of resources corresponds to the second channel: it affects the distribution of the ‘de facto political power’ in society, influencing the ability of certain groups to challenge (or not) any given status quo.

Against this background, one may follow up with a number of critiques on the NIE paradigm. Firstly, and alongside with the whole neoclassical reasoning, there is the ever-standing issue of methodological individualism. Organizations and institutions (including the state) are often treated ‘as if’ they were individuals, relentlessly maximizing welfare, subject to transaction constraints. Accordingly, institutions seem not to be treated in their own terms, and are therefore unable to meaningfully shape the behaviour of individuals. Once institutions are in place, their influence on individuals’ preferences and behaviours is achieved by simply constraining or parameterizing individuals’ actions (Meramveliotakis and Milonakis, 2010). Hence, the idea of ‘reconstitutive downward causation’ (Hodgson, 2000a) - the actual shaping and moulding of individual behaviour by institutions - is ruled out. The point is not to defend the direction of causality simply running the other way round, as in reality we observe, as often in economics, bi-causality (and one could possibly incur in the mirror error of structural determinism, i.e., treating individuals as totally bereft of agency). The problem is that NIE’s adherence to methodological individualism blocks a meaningful conceptualization of institutions affecting individuals. As Hodgson (2000a) encapsulates:

‘a problem with this analysis is that it cannot deal with the genuine evolution and fundamental development of the individual. It attempts to make all explanations of social phenomena reducible to the given individual, but in doing so it has to make the individual preference function immutable’ (p.327)

Secondly, and following from above, the lack of ‘reconstitutive downward causation’ by NIE precludes it to properly conceptualize learning (Hodgson, 2000a). Recall Glaeser’s (1999) model of ‘learning in cities’: learning takes places when individuals meet, and the higher the density of a region the higher the likelihood of learning to take place. Similarly, in Arrow’s (1962) famous model of learning by doing, learning *appears as the result* of a certain cumulative and repetitive process, which eventually leads to the discovery of a more efficient technique of production. Those conceptualizations may have some credit, but they miss the point that learning occurs *within* certain social structures and institutions, which often establish the norms and patterns governing the learning process. Hence, the idea of institutions (like firms, universities and systems of innovations) shaping the behaviour of individuals is essential, otherwise learning becomes a simple outcome of a ‘black box’.

Thirdly, the central assumption of the ubiquitous existence of markets since the ‘beginnings’, in tandem with the conceptualization of transaction costs, can be disputed on historical and logical grounds. As Ankarloo (2002) puts it, markets are treated as the ‘universal and eternal

yardstick' (p.21). In fact it is not only the market, but in general *specific capitalist features* that are actually extended retroactively in history. So the 'free', rational and maximizer individual typical from NIE's framework is assumed to be present even when there was no capitalism (or when markets were not the key institution governing society's allocation of resources). In NIE's logic, those assumptions are vital, because institutions are believed to evolve, emerge and fall as the consequence of rational responses to changes in relative transaction costs. However, transaction costs related to market contracting presupposes the existence of relatively well-defined property rights and an operating market system (i.e., assumes a pre-existing institutional environment) in which transactions and exchange can take place. Markets, none the less, cannot be operational without rules governing exchange. In other words, the 'rules of the game' (institutions) precedes the market. Moreover, the type or structure of property rights are involved in the generation of transaction costs, so market functioning assumes pre-existent institutions and certain property rights. In other words, NIE's historical interpretation of the emergence of key institutions of capitalism appears to be to certain extent tautological. It *assumes* it already from the beginning, and thus, as Ankarloo (2002) aptly notices, 'economic history must be totally revised from being the history that leads to capitalism, into a history of capitalism' (p.20).⁷²

Fourthly, and regardless of conceptual and historical difficulties, the empirics and operationalization of the NIE approach seems to be rife with complications. The concept of transaction costs – lying at the heart of this paradigm - can only be meaningful if possible to be measured and operationalized. If rational individuals are assumed to establish institutions and organizations precisely in order to save in transaction costs, the same individuals must be able to compare the different levels of transaction costs associated with alternative institutional arrangements. Nevertheless, the empirical scholarship on the quantification of transaction costs has presented only controversial and limited results, and usually failing to reveal economy-wide quantifications (Meramveliotakis and Milonakis, 2010). In fact, variables such as bargaining costs, uncertainty and asset specificity may be nebulously manifested in market-prices and hardly possible to be observed. Therefore, with a lack of empirical verification on the level transaction costs assume under alternatives contractual

⁷² Ankarloo (2002) provides his critique on NIE based on the historical contributions by Karl Polanyi. Another critique demonstrating the limitations of the NIE approach in dealing with history more generally and in particular with the transformation from one economic system to another can be found in Smyth (1998). The author analyses the transformations undertaken by former centrally planned economies in the late 1980s and early 1990s, and highlights the theoretical insufficiency of NIE in providing policy guidelines for those countries.

forms, it becomes unfeasible to believe they can be at the heart of the explanation on the emergence of efficient institutions⁷³.

But the empirical and measurement problems NIE faces are not simply confined to the concept of transaction costs. Williams and Siddique (2008) conducted an extensive and careful survey on the indicators of institutional quality and governance usually adopted by the scholarship. If there is a strong connection between institutions and economic growth, after all, one should be able to observe this relationship empirically. It turns out that the applied research made within the broad NIE approach has encountered enormous hurdles. Overall, the literature is replete with issues involving the endogeneity⁷⁴ of institutional variables in relation to economic development. It seems to be unsuccessful in going beyond the mere association of variables: it can identify that ‘good institutions’ (as defined by NIE) are overall associated with higher levels of economic development⁷⁵, but it faces difficulties in looking at *changes* in governance variables over time, thus cannot make reliable predictions (undermining, consequently the thrust of its policy advice). As it is the case in many empirical studies in economics, the old debate of which direction does the causality between two variables runs re-emerges again. Apart from those general problems, the indexes and indicators normally employed in order to measure certain institutional characteristics are not without limitations: some, like the Economic Freedom Index, blurs governance measures (e.g., legal structure and property rights) with actual outcomes (monetary policy and price stability, for instance), undermining its usefulness. Others, like the worldwide governance indicators (WGI)⁷⁶ developed by Kauffman et al (2010) and widely influential, suffers from being a very

⁷³ It is important to point out that North and Wallis (1994) admit transaction costs cannot be observed and therefore institutions do not come to life in order to save on transaction costs. In their words (1994): ‘A critical element in this framework is that institutions do not exist to minimize transaction costs...There is not, and should not be, a one to one identification between institutions and transaction costs’ (p.622). Meramveliotakis and Milonakis (2010) call attention to the fact that, North and Wallis’s (1994) acknowledgment notwithstanding, the concept of transaction costs has never been ditched by North himself and the NIE more broadly.

⁷⁴ The use of instrumental variables in order to overcome endogeneity issues is not an unanimity even within mainstream economics: the usage of settler mortality, often employed by Daron Acemoglu and his associates may be deemed inappropriate, because the strategy seems to suggest settlers brought (‘good’) institutions with them (when the settler’s mortality rate was low), but according to Glaeser et al (2004) settlers actually brought human capital, a conceptually distinct variable from institutions.

⁷⁵ And even in this case we encounter some anomalous classification of countries. For instance, in 2000 Sierra Leone had a higher score than Ireland for corruption, according to the international country risk guide (Williams and Siddique, 2008: p.138-9).

⁷⁶ See <http://info.worldbank.org/governance/wgi/index.aspx#home> for the WGI webpage.

recent effort, so not beneficial for time-series analysis, and also from its ‘composite’ nature, rendering it improperly influenced by any given individual dataset⁷⁷.

Finally, Vries (2012) provides a very critical review on the most popular work by Acemoglu and his associates (Acemoglu and Robinson, 2012). The work is accused of important bibliographical omissions (both on other institutionalists and on specific historical case studies); neglecting alternative explanations to economic prosperity (both ‘proximate’ and ‘ultimate’ causes); being very superficial in some historical comparisons, and lacking a real understanding of international political economy and its role on the causes and poverty of nations (the study fails to consider that states with ‘good institutions’⁷⁸ often support the ‘wrong’ institutions abroad⁷⁹). But perhaps the main critique is levelled against the central message of the study, which sustains that ‘good institutions’ cause prosperity. Vries (2012) defends that:

‘countries during their take-off almost without exception were quite authoritarian and often even became *increasingly* authoritarian. They in any case were not exactly democratic. In most developed economies industrialization came from above’ (p.90, original emphasis)

This description is diametrically opposite to the definition of good institutions which Acemoglu and Robinson (2012) work with. Indeed, the ‘main’ case study scrutinized by the authors – the British Glorious Revolution and the subsequent capitalist development in the UK – is questioned by Vries (2012), who is not convinced of a close connection between institutional change and industrialization in this case, and points out to the existence of monopolies and state regulations in the British economy after the Revolution, and sustains that wealth and income distribution were very unequal, labour subjected to harsh discipline and bereft of many rights. The British state, overall, was very interventionist, going much beyond of providing the ‘right’ incentives and creating a level playing field.

But perhaps most imperatively for this thesis, the most important caveat of the NIE is the neglect of the influence of institutions on regional growth and development (Rodriguez-Pose, 2013). Conceivably, one of the reasons for such disregard is the excessive focus on formal,

⁷⁷ If technical issues on some indicators used by the World Bank were not enough, recently we learned that apparently the institution may be consciously manipulating some data on its ‘doing business’ rank. At least it is what the current Chief Economist of the institution, Paul Romer, has suggested. See Reuters (2018).

⁷⁸ Acemoglu et al (2004) define good economic institutions ‘as those that provide security of property rights and relatively equal access to economic resources to a broad cross-section of society’ (p.9).

⁷⁹ With the exception of pre-independence, colonial situations, which are covered

‘de jure’ institutions, like property rights and rule of law, which tend to be national-wide determined. Storper (2010) underlines that data versing around ‘de jure’ institutions and legal structures usually is organized and systematized at the national level, allowing for *cross-countries* comparisons. The same type of data is comparatively seldom available for metropolitan or sub-national areas. This excessive focus on formal ‘de jure’ institutions has as a side-effect (even if unintentionally) the ‘blurring of the regionality’, and often localities are treated just as the same as the national level⁸⁰. Those limitations have also entailed policy advices to follow the typical ‘one size fits all’, or ‘isomorphic’ approach: policy-makers following general blueprints and the attempt to copy certain regional strategies from one locality to a completely different one, regardless of their own particularities (Rodriguez-Pose, 2013)

To be sure, there is a lively literature on the role of *informal* institutions on local development, focusing on variables and concepts such as ‘social capital’, ‘institutional thickness’ and actors’ networks⁸¹. Nonetheless, this body of scholarship is also rife with its own problems, and others which are similar to the ones NIE faces (Rodriguez-Pose, 2013): the issues revolving around endogeneity and causality emerge here as well. Informal institutions are particularly tricky to be conceptualized, measured and operationalized, and it is fair to assume the task is even more daunting when compared to formal definitions such as property rights. Ideas such as ‘institutional density’ and ‘institutional mix’ (Storper, 2010), especially, are very knotty and will expectedly face hurdles in identification attempts. What is more, informal institutions are highly context- and geographic-specific. What works in one place may not work in another. Local intangible factors and circumstances play a decisive role.

This is not to say that NIE has never been concerned with local development, or the importance of local institutional arrangements for economic development. In fact, there is a sub-branch of the literature which is worth mentioning, especially because it has been extensively applied to China. It is not about local growth and development *per se*, but about the importance of the division of tasks between different government spheres, and how the autonomy of local states may be conducive to the overall development of a nation. Key NIE

⁸⁰ Recall that this critique of mainstream economics treating the ‘regional’ just like the national level had already been levelled against NEG, as seen in chapter two.

⁸¹ This literature does not always falls under the broad NIE paradigm. In fact, often it is conducted by academics from different disciplines, like geography. See Storper (2010: p.2138-40) for a brief review.

concepts such as commitments and constraints on governments will be redeployed on an intra-governmental framework.

In the preceding theoretical framework, by Acemoglu et al (2012), the ideas of commitment and credible constraints on the use of political power play a central role. The distribution of resources, one of the crucial variables discussed above, is fundamentally a conflictual and political process. Only political institutions placing credible mechanisms of checks and balances on power holders will guarantee they do not craft economic institutions which perpetuate an initial state of (unequal) resources distribution. Without those mechanisms, there is no reason to believe power holders will secure property rights for a broad segment of society⁸². Acting unrestrained, they will systematically devise self-serving policies, assuring them rents from predation and expropriation i.e., a structure of resources distribution for their own advantage. Therefore, in order to promote secure and well-defined property rights to a broad segment of society, the state must crystalize these changes in ‘de jure’ political institutions, hence avoiding future setbacks and backlashes. Weingast (1995) articulates the same problem in a slightly different way: ‘the fundamental political dilemma of an economic system is that a state strong enough to protect private markets is strong enough to confiscate the wealth of its citizens’ (p.24). In other words, for ‘good economic institutions’ to arise, power holders must be constrained in their exercise of power; and while they are not, we always will be under a sub-optimal institutional setting. The particular format of those constraints and checks and balances can assume different forms, but an important branch of the NIE literature focus on the role of local states and the intra-governmental balance of power. Weingast (1995) borrows on notions of federalism and fiscal decentralization in order to envisage a theoretical framework which proposes a sort of political institutional arrangement able to guarantee a continual commitment to a limited government, i.e., a government that can secure property rights but will not encroach into the markets, providing, therefore, a political foundation for markets to develop. The idea, which became known as ‘market-preserving federalism’ (MPF), was widely applied to China, and influenced important contributions made by scholars to scrutinize the country’s reforms and spectacular growth rates. As such, a proper review of this literature, and its applications to the Chinese case, will be offered in the next chapter, dedicated to China’s local state and central-local

⁸² i.e., no reason to believe power holders will establish ‘good economic institutions’, as defined by Acemoglu et al (2004)

relations. Now the following section of this chapter will be presented, designated to introduce an alternative view on institutions.

3.3) Institutional complementarity and comparative institutional analysis

3.3.1) Institutional complementarities and comparative capitalisms

Given the caveats and shortcomings associated with the broad NIE approach, one must analyse the role of institutions on economic development under distinct theoretical lights. For the sake of exposition, a compelling strategy might be to take one particular case study from the real world in which the mainstream approach seems to provide only limited wisdom and then to proceed with the development of a more appropriate theoretical framework. Aoki (1994) observes that modern production is based on a ‘team characteristic’, i.e., the cooperation among distinct workers is so ubiquitous that it is difficult to break down the individual contribution of each of them in the final output. Of course, this gives rise to problems of moral hazard and free-riding. In a canonical Western economy this problem is mitigated by competitive markets for corporate control, higher specialization of jobs and principal-agent monitoring mechanisms. In Japan, however, these ‘Western characteristics’ were not so prominent, especially during its period of fast growth after the Second World War. What is more, Aoki (1994) observes, ‘the team characteristic of production is relatively more prominent in Japanese organizations than elsewhere’ (p.658), and the country featured imperfect labour markets and a financial system dominated by banks, with a low level of securitization. How could Japan perform so outstandingly given these deviations from the Western-centric, idealized efficient institutions?

For Aoki (1994, 1997) the answer lies precisely on these institutional anomalies. A set of institutions, lying outside the pure realm of work organization, acted in tandem to counteract the negative effects of internal moral hazard problems. In particular, imperfect labour markets (lacking in flexibility) and a ‘unique’ monitoring agent (the main bank system) performed ‘a system of complementary institutions that are effective in enhancing the productivity of team-oriented production’ (Aoki, 1994: p.658). Banks were the major source of finance to firms, and often both parts engaged into a unique long-term relationship, attained by mutual stockholding. This system made firms somehow dependent on banks’ finance, which in turn allowed the latter to monitor and punish bad performing firms. When companies were

presenting good financial results, the banks would not wield its power, but when faced with poorer financial outcomes the bank would act: in case of temporary financial problems the main bank would rescue the firm, but in case of more grievous negative results a process of liquidation would ensue. Moreover, the likelihood of upward mobility of workers *across* firms was reduced, so in case of liquidation workers would most likely be placed at lower levels in different firms. This system functioned as a credible threat to workers and managers, acting as a proper incentive against potential moral hazards problems in companies characterized by a strong team nature, featuring joint responsibilities and cross-functional interactions. In sum, this system of *ex-post* intervention, contingent on the firm's results, engendered an appropriate monitoring schema to the Japanese firm. Both imperfect labour markets and a financial system not reliant on short-term finance and securities combined together to effectively control the free-riding problem in team production.

The exposition above invites the notion of institutional complementarity: the idea that there exists mutually reinforcing effects among distinct institutional realms, to the extent that the effectiveness of a certain institutional arrangement (say, on corporate governance) must be supported by institutional arrangements in different realms (for instance, on labour markets and financial systems). Amable (2016) defines the concept in the following way:

‘the idea that certain institutional forms, *when jointly present*, reinforce each other and contribute to improving the functioning, coherence or stability of specific institutional configurations, varieties or models of capitalism’ (p.79, original emphasis)

Although simple, the concept begets not negligible consequences. First and foremost, any idea of the existence of a ‘one-size fits all’ institutional approach must be seriously questioned. If in order to attain the maximum of its effectiveness an institutional arrangement must be combined with other arrangements, the whole idea of (universal) ‘best practices’ becomes devoid of real meaning. As Aoki (1994) concludes, ‘neither the Western nor Japanese system seems to have an absolute advantage, but only a comparative advantage determined by market and technological conditions of industries’ (p.675). In the case of Japan, its financial system was highly complementary to its work organizational pattern, whereas in the USA the complementarities in case are between a financial system based on short-term incentives and a work organization based on highly individualized rewards. This opens a possibility for the existence of alternative institutional arrangements, equally effective or efficient, but orchestrated along dissimilar lines.

Indeed, the Varieties of Capitalism (VoC) approach, pioneered by Hall and Soskice (2001), works with the dichotomy between two alternative set of institutional arrangements, each of which characterized by complementary institutional forms which reinforce the efficiency of each other, thus leading to the emergence of distinct coherent systems at the national level. The *raison d'etre* of the VoC approach, one may say, it is (was) to highlight that (an idealized) American-style liberal capitalism is neither the only nor the most efficient institutional composition in modern day capitalism. VoC opposes a canonical liberal-market economy (LME), represented mainly by the US, with a coordinated-market economy (CME), represented chiefly by Germany⁸³. That is a firm-centric approach, and the main criteria distinguishing LMEs from CMEs is the dominant manner in which firms are coordinated among themselves and with other actors. In LMEs markets mechanisms exert a predominant role, whereas in CMEs non-market mechanisms take the leading role. In the former, there is a reliance on general skills, deregulated labour markets, securitization and venture capitalists allied with a strong competition policy, rendering fast adaptation to changing market conditions. In the latter, contrariwise, one observes accumulation of specific skills, stable employment and wage moderation, banks playing a central role in the financial system and patient investment, allied with inter-firm cooperation, allowing for long-term industrial strategies. The fundamental aspect to be highlighted is the complementarity of all of those facets in each model. As Hall (2005) sums up, the central idea is that ‘one (or more) institution(s) may enhance the effects of another institution (or of several others)’ (p.373).

It is fair to say that VoC achieved its main objective – demonstrating the feasibility of an alternative model of capitalism other than the canonical Anglo-Saxon one. However, the approach also accumulated important caveats and suffered from serious critiques. For Boyer (2005a), the VoC research ends up – consciously or not – using LMEs as the proper standard against which the alternative one (CMEs) must be assessed. In this sense, CMEs could be perceived as a sort of ‘second-best’ alternative version of a LME, but the opposite might not be true⁸⁴. Further, the conceptualization of two diametrically opposed models seems overly narrow, as it becomes daunting to fit all other advanced capitalist economies (let alone the

⁸³ These are, of course, ideal-types. In the case of the US, for instance, there is a convincing body of literature arguing that the state has historically been playing a predominant role in the success of the American economy. See, *inter alia*, Block (2008), Ferleger and Lazonick (1993) and Mazzucato (2015).

⁸⁴ In the *early* work of Aoki (1994), the author explicitly states that the Japanese institutional arrangement is a ‘second-best’ in relation to the ‘western’ model. Aoki is not affiliated to the VoC approach, but in this particular case the same critique applies.

developing world) into one of the two cases. There are many intermediate cases that surely deserve a label of their own sake, instead of being understood as ‘imperfect’ forms of one of the extremes. This is perhaps a consequence of VoC’s strategy of using a single axis of comparison – coordination via market vs. non-market mechanisms. In fact, there are a multitude of market logics of coordination, as well as a multitude of non-market mechanisms which, in tandem with the market, may successfully coordinate a capitalism economy. Boyer (2005a) calls attention to the existence of a broadly defined civil society, whose role in coordination must be perceived in partnership with both the market and the state. Hence, there is a need for a multifaceted approach, relinquishing the market (and the vaguely defined ‘non-market’) as the sole reference. No wonder why certain specific national experiences, like South Korea and Spain, sit uncomfortably in the VoC framework⁸⁵.

Institutional complementarities, however, has been applied by other schools of thought. Here it might be appropriate to resume the discussion centred on the *régulation* theory (RT), presented on the previous chapter (section 2.5.2). As Amable (2016) and Boyer (2005b) aptly observe, the concept of institutional complementarities initially was not explicitly present in the works of the RT. However, the idea was implied in some of the early works, and the later research efforts of the RT clearly incorporated the concept.

Recall that for the RT economic growth is theorized as always being embedded into a historically specific accumulation regime. The latter, in turn, is characterized by the canonical Kaldorian cumulative causation growth scheme, and both the demand regime (DR) and the productivity regime (PR) are thus embedded into a wider, encompassing historical context, which assumes a certain number of specific institutional or structural forms. Recall, still, that an institutional form may be understood as the basis of certain social regularities we observe, denoting ‘a codification of a main social relationship’ (Boyer, 1988a: p.71), which is deemed relatively stable over time and historically determined. It is within these institutional forms that actual growth episodes take place. Therefore, these broadly defined institutional arrangements tend to be the main conduits of economic growth in the long-run, as they have the power to determine the parameters of a discrete (Kaldorian-defined) growth episode. It is mandatory, therefore, to analyse the overall institutional apparatus in which both demand formation and productivity gains rest on.

⁸⁵ We will come back to a critique of the VoC approach later, when problems related to its exclusive focus on the national scale will be discussed.

The *régulation* theory (RT) will traditionally emphasize five distinct, but interconnected institutional forms. Boyer (1988a) provides a summary: firstly, *the monetary and financial regimes* revolve around the mode of financial interaction between separate economic agents. It can assume several configurations, depending on the role of credit on technological innovations and on the degree of sophistication of national financial systems. Secondly, *the wage-labour nexus* mainly defines the relationship between capital and labour, roughly encompassing issues related to work organization and the living standards of wage-earners. Wages setting, in particular, can be achieved by very decentralized and competitive mechanisms, or by centralized agreements, with collective bargaining having a prominent role. Thirdly, *types of competition* deal with the main strategies and forms which capital devises to accrue higher profits. It can assume the form of aggressive price-competition, based on cost-reductions, or on product differentiation and innovation. Fourthly, the *type of adhesion to the international regime* deals with the rules and conventions governing the international exchange of goods and services, policies presiding over foreign invested enterprises and the financing of external imbalances. Finally, we have the *forms of state intervention*, which is concerned with the manner in which the state operates in the socioeconomic fabric, ranging from distinct laws and regulations to its sheer ability to tax and spend, in different areas (from public services to science and technology to infrastructure).

The striking theoretical aspect is not that much the definition and nuances of each institutional form in isolation, but actually their interconnections, i.e., the complementarities among all the five institutional forms which yield system-level coherence, lending the required institutional support for an accumulation regime to materialize. As Petit (1999) puts it, in order to the *coordination* of capitalist economies to be successfully achieved, it is required ‘a fabric of institutions to get a coherent evolution out of decentralized initiatives’ (p.221). The viability of any accumulation regime will depend on the harmony (or otherwise) between the five institutional forms presented above (Amable, 2016). The classical example of the RT, the so-called ‘Fordist’ period, usually will posit that those five institutional forms were highly complementary to each other, and as a result a macro-efficiency emerged, crystalized by full employment, high profits, and a progressive betterment in living standards.

Initially, the RT approach was mainly concerned with the conditions underlying the viability of certain historically-bounded periods of capitalist accumulation, and as such its original

works focused on distinct stages of capitalist history. ‘Fordism’, indeed, is only one of them. It is preceded by the nineteenth century period (featuring moderate increasing returns to scale and investment-led growth) and the inter-war period (featuring higher increasing returns and demand-led investment); and after its crisis a debate was sparked within the RT on the likelihood of new growth regime to arise. The subsequent research conducted under the banner of the RT, however, shifted its focus to the actual variety of institutional arrangements prevailing in each historically-bounded accumulation period. To exemplify, the underlying institutional conditions of ‘Fordism’ in France were rather distinct than the ones in the US. In other words, the diversity of institutional arrangements by distinct *national* capitalist economies came to the fore of the agenda. This shift is not disconnected from the debate in which VoC has engaged with – the necessity of questioning the view that with the fall of the Soviet Union and the intensification of globalization national idiosyncrasies would slowly fade away in favour of a certain Anglo-Saxon ‘pure’ form of capitalism, touted to eventually prevail everywhere. A body of literature delving on the existence of diverse forms of capitalisms, superseding the simple CME-LME dichotomy posited by the VoC approach, has surfaced from the mid-1990s onwards (Boyer, 2005a).

This is not to suggest, of course, that in reality we observe one variety of capitalism for each nation. Conversely, it is not *any* combination of the five institutional forms which will enable a specific variety of capitalism to emerge. To be empirically meaningful (i.e., a category in its own right), any given brand of capitalism must combine institutional forms in a manner in which their interrelationships are theoretically explained, highlighting, thus, the mechanisms responsible for substantiating any proposed complementarity⁸⁶. Indeed, research in this area has usually found a very limited number of brands of capitalisms, albeit higher than two. Boyer (2005a) posits the existence of four types of capitalism: a ‘market-oriented’ one (for e.g. the US and the UK), a ‘social-democratic’ model (for e.g. Sweden), a ‘state-driven’ (for e.g. Germany and France) and finally a ‘meso-corporatist’ (for e.g. Japan and South Korea). Amable’s (2003) study defines five types of capitalisms, greatly juxtaposing Boyer’s (2005a) classification. The main difference is the category of ‘Asian capitalism’ roughly replacing the ‘meso-corporatist’ label, and the addition of the brand ‘South European capitalism’ (for e.g. Spain).

⁸⁶ As Boyer (2005a) puts it: ‘It is within this framework that the concept of institutional complementarity shows its true power’ (p.520).

The classification of each capitalism is determined by the specific institutional complementarities identified by the authors in case. Ergo, it is important to notice that the selected institutional forms themselves change according to each author, and indeed there is no such a thing as a pre-defined list of institutional forms that must be always considered. Once again, however, that does not mean that *any* institutional form may be chosen, and a brief review of the literature indicates a great parallelism and a certain degree of convergence among distinct classifications. Very often, a specific institutional form in one study will be replaced by a similar category in another study. Table 3.1 aims to provide a comparison among the selected institutional forms by different authors/theoretical affiliations that employ the notion of institutional complementarity. Needless to say, the table do not ambition to offer an exhaustive list of relevant studies.

Table 3.1: Selected institutional forms by distinct studies

	Study			
	Boyer (1988a)	Hall and Soskice (2001)	Aoki (1997)	Amable (2003)
Institutional Forms	Types of competition	Inter-firm relations	Industrial Association	Product-Market Competition
			Suppliers network	
	Monetary and financial regimes	Corporate governance	Banks and Governance Structure	Financial Intermediation and Corporate Governance
			Stockholder structure	
	Wage-labour nexus	Industrial relations	Workers' organization	Wage-Labour Nexus and Labour Market
		Firms' relations with employees		
		Training and education		Education Sector
Forms of state intervention			Social Protection	
Type of adhesion to the international regime				

Source: Own elaboration

One can realise that some categories, for example Boyer's (1988a) 'type of competition', seem to be present (under distinct names and featuring specific nuances) in all the four studies. Other categories, like Hall and Soskice's (2001) 'training and education', find obvious correspondences, like in Amable's (2003) 'education sector', but do not find any overt parallel in Boyer's (1988a) and Aoki's (1997) studies. Finally, some categories seem to be

very unique and specific, like the ‘type of adhesion to the international regime’, featured in Boyer (1988a). Of course, that is *not* to imply that in the other studies connections with the international regime are simply wiped out; rather, the category simply did not receive an unique and distinguishable treatment *per se*. Theoretically, what is important is the adherence to the principle of institutional complementarity: regardless of the selection of specific institutional forms, one must explain how one form influences another, either through reinforcing its previous attributes or making up for its deficiencies, adding, thus, to a common outcome at the level of the economic system.

3.3.2) Political economy and institutional change

The previous discussion focused mainly in presenting the definition and applicability of the concept of institutional complementarity, as well as how different authors and schools of thought employ the concept. A strict adherence to the principle of institutional complementarity, however, could mistakenly lead one to believe that institutional change may become an event nearly impossible to be materialized. If the concept entails the idea of a mutual reinforcement among an array of institutions, driving superior performance thanks to the complementarities in case, a sort of ‘perfect fit’ is implied. Under these circumstances, any ‘external shock’ or disturbance would be assumed to be easily repealed by the whole institutional fabric, given its ‘tight’ coherence. Following this line, the only change feasible to be envisaged is towards reinforcing even further the complementarity of the system. Alternatively, one may reason on the opposite direction: given the tight interlacing of institutions, any minor disturbance could potentially drive the disarray of the system, as the loss of any local complementarity triggers change in another institutional realm, which in turn provokes further changes like a domino effect, eventually leading to the dissolution of the whole system. If on the first case institutional change is virtually impossible and the system is remarkably resilient, on the second institutional change is expected to materialize almost instantaneously and the system is actually very fragile (Amable, 2016).

Given actual experience, one can safely assert that both interpretations are not accurate. In reality it is observed institutional changes to a degree in between the ‘immutable’ and the ‘catastrophic’ views exposed above. Incidentally, the underlying rationale behind the concept of complementarity, overtly or covertly, revolves around the idea of *functionality*. It is precisely the *functional performance* in one realm which is improved (or undermined) by the

existent linkages with another institutional realm. For instance, a team-oriented work pattern has the benefit of enhancing the information-processing capabilities of workers on the shop-floor, enabling the adoption of methods of inventory control (the ‘kanban system’). However, it also augments moral hazard and free-riding concerns. The main-bank system, in tandem with its contingent governance structure (as described in the previous section), is able to impose an external discipline on employees, curbing free-riding behaviour (Aoki, 1994, 1997). This ‘financial-cum-governance’ set of institutional arrangement is able, thus, to enhance the positive *functions* in the workers’ organization institutional realm.

In order to theoretically make sense of institutional change under the aegis of institutional complementarity, one must employ a conceptualization which assumes a ‘loose enough coupling’ (Streeck 2005: p.366) between institutions, so that institutional change becomes intelligible. Thus, institutional change acquires the form of limited adjustments, instead of a total break-up of the system or perfect immutability. The challenge, hence, becomes how to conceptualize this ‘loose enough coupling’. From the onset, while recognizing the importance of the *functions* institutions play, as well as the *form* they assume, one must give one step back and scrutinize the *nature* of institutions, how they historically evolve and how complementarities are normally shaped.

The approach to be employed here will argue that institutions essentially ‘represent a compromise resulting from the social conflict originating in the heterogeneity of interests among agents’ (Amable, 2003: p.10). If one accepts this assertion, it follows that institutional change should be perceived as a political economy matter. Hence, *contra* NIE, efficiency (let alone transaction costs minimization) cannot be held as the main criteria in explaining the emergence and evolution of institutions. Fundamentally, the reason why one finds a diversity of institutional arrangements, and indeed of capitalisms, is the diversity of political compromises among various groups, and the idiosyncrasies of social and political struggles existing in different areas of the world (Boyer, 2005a). Efficiency (however defined) can be the outcome of several institutional forms, depending on the specific political compromise crafted, and is usually (if not always), found *ex-post*. Institutional complementarity thus must play a central role in the economic performance of nations, allowing for distinct (politically-driven) institutional arrangements to be combined in manners that render (or not) efficient *aggregate* outcomes. As Amable (2003) encapsulates: ‘what we consider to be different

economic ‘models’ are therefore based on specific social compromises over institutions’ (p.10).

From the onset, one must assume the ubiquity of power asymmetries and conflict of interests. Social differentiation and uneven positions in the social structure will entail heterogeneity of demands and interests, and institutions emerge as the outcome of the conflict between unequal agents. Depending on the relative power distribution of different groups, distinctive compromises will be established, shaping the particular institutional form which external observers are able to identify. Hence, institutional forms, and institutional complementarities in particular, cannot be perceived as a ‘technical’ issue, subject to the careful work of an enlightened social engineer. Rather, it is the stability of certain socio-political compromises, embroiled by the heterogeneity of the demands of the relevant social groups, which will define and set different institutions. The particular forms they will assume (i.e., institutional forms) is a consequence of a much deeper socio-political process.

Accordingly, institutional complementarity, albeit being defined on a functionalist fashion, can only be properly grasped as a manifestation of certain socio-political compromises, involving different social groups. In fact, there is an agreement among the different authors working with the principle of institutional complementarity that the latter is always found *ex post*⁸⁷, so that any reference to institutional *functions* must not prevent one to appreciate the historical, and often accidental, roots of complementarity. Sometimes envisioned complementarities are conflicting in nature and cannot be implemented simultaneously. Amable (2016: 94-5) gives an illustrating example: for capitalists, a liberalized financial system and a deregulated labour market may mutually boost profit margins, showing great complementarity. For the working class, on the other hand, centralized wage bargaining and a social protection system may mutually offer stronger labour rights and more generous protection. Hence, to the extent the concept of institutional complementarity hinges upon the

⁸⁷ Aoki (1997) claims that the organizational practices and institutional framework which underpinned the Japanese fast growth period after the Second World War was an ‘unintended fit’: initially, the government had developed certain institutional arrangements for different purposes (centralized resources control), but with time they were transformed and co-evolved with the actions of other agents (workers, business association etc.), giving rise to a system of complementarities which, while not planned by anyone, was actively shaped (in different ways, and following different logics) throughout the period. For Amable (2016), there is never a ‘system builder implementing a grand scheme’ (p.82). For Streeck (2005), complementarities take place by ‘discovery, improvisation or serendipity’ (p.364). Boyer (2005b) states that institutional forms continuously adjust and co-evolve, and the resulting mode of regulation only retrospectively appears as coherent. Hall (2005) also agrees that the reasons why one establishes an institution often do not coincide with the reasons why complementarity emerges; institutional experimentation plays a major role in the shaping of complementarities.

functions performed, these functions are perceived differently depending on the social group under scrutiny. The particular form a set of institutions will acquire will be contingent on the tortuous conflicts for political power. As Boyer (2005a) sums up: ‘...social and political battles may be one source of institutional forms, but the imperatives of economic reproduction are what decide which configurations are going to be viable...’ (p.512)

An ancillary concept, significant for the RT in particular, is that of institutional hierarchy. It may be defined, following Boyer (2005b), as an institutional configuration in which ‘particular institutional forms impose their logic on the institutional architecture as a whole, lending a dominant tone to the mode of regulation’ (p.367). It follows that, given a certain hierarchically superior institutional form, the design of other institutions will be constrained by the former, but not vice-versa⁸⁸. Moreover, the shift of a hierarchically superior institutional form will have the ability to govern the transformation of the remaining institutions, drifting them towards its own (new) logic. Hence, a change in a hierarchically superior form is likely to entail a challenge to the whole institutional architecture and indeed to the socio-political compromises substantiating it (Amable 2016). Petit (1999), for instance, suggests that the ‘labour-wage nexus’ was the hierarchically superior institutional form prevailing under ‘Fordism’. The challenge it suffered from the 1970s onwards meant a gradual change in all the other institutional realms, and eventually the ‘forms of competition’ assumed the role of the hierarchically superior institutional form during the ‘post-Fordist’ growth regime.

Institutional change, thus, comes about when the social-political compromises sustaining a given set of institutions is shaken, disrupted, or challenged, to varying degrees of intensity. It will be the wrestle undertaken by the political leadership to amend, stabilize or renew a socio-political pact which will drive institutional change (Amable, 2016). Institutional forms, and their respective functions and outcomes in terms of economic performance are the consequences of the ‘social and political battles’ mentioned by earlier.

For the RT, any given institutional architecture, historically delimited, is subject to inner tensions, even when the complementarities in case seem to be delivering good economic outcomes. The fit among institutions is always understood as partial and transitory, leaving

⁸⁸ At least not to the same degree

enough space for both endogenous changes (stemming from the internal conflicts generated by the development⁸⁹ of the specific accumulation regime in case⁹⁰) and for the role played by exogenous ‘shocks’ (with ‘imported’ institutions driving a re-adjustment of the whole system of domestic complementarities). Recall that for the RT there are always several possible adjustments between the productivity regime (PR) and the demand regime (DR) – a given institutional architecture may or may not yield a virtuous (spurring growth rates) adjustment between the PR and the DR. The most severe case of dis-adjustment or mismatch between the DR and the PR is when the very functioning of the regime of accumulation comes into contradiction with the existing institutional forms – that is the case of a structural crisis, and ‘the system can no longer reproduce itself in the long-run, at least on the same institutional and technological basis’ (Boyer, 1988a: p.76). Nevertheless, a dis-adjustment or mismatch may entail a process of ‘hybridisation’, in which some previous institutional forms persist, while others are transformed. It often is related to ‘external shocks’, with ‘imported institutions’ affecting the system coherence as a whole, albeit not dismantling it. Hybridisation leads to the creation of new complementarities, instead of threatening the *whole* coherence of the system (Amable, 2016; Boyer, 2005b). But in either case – structural crisis or hybridisation – it will be political and social factors which will play a decisive role in altering established compromises and thus (re)shaping the institutional complementarities for the whole economy. In a nutshell, the concept of institutional complementarity developed here allows for the ‘loose enough coupling’ hinted by Streeck (2005), and transcends the mere *forms* and *functionalities* institutions assume, highlighting the political economy lenses one must wear in order to properly address institutional changes.

It is also beneficial to this discussion to contrast the stance on institutional change exposed here with the position offered by mainstream economics. Chang (2011) divides the latter’s understanding into two broadly defined categories: the first supports the view that institutional ‘global standards’ can be directly implemented by any country, in a typical ‘one-size fits all’

⁸⁹ Recall from chapter two that economic growth almost never is ‘balanced’ or ‘steady’. Translating into our political economy view of institutions presented here, it means that growth is seldom ‘distributional-neutral’: It entails changes in the relative income distribution and on the balance of power among distinct social groups, potentially endangering previous socio-political compromises.

⁹⁰ Petit (1999) asserts that the successes of Fordism allowed for a growing individualism among the population, changes in the sectorial composition of employment and higher availability of new intermediary services; these changes eventually challenged the old wage-labour nexus. Moreover, the increasing internationalization of the economies – resulting from the economic advancements during the Fordist period – could not be matched by the then prevailing institutions, leading to changes on the forms of state intervention and the type of adhesion to the international regime.

spirit. It is implied that, as ‘best’ (or the most efficient) institutions can be easily identified and selected internationally, it is a simple matter of political will to implement them. According to the scholar, this view is based on crude ‘voluntarism’, precisely because it presumes that if political leaders are genuinely aiming at improving the economic performance of their countries they will inevitably adopt the institutions recommended by NIE. The second category is dubbed the ‘fatalist climate-culture school’. Here institutional change is almost impossible to be achieved, because institutions are perceived to be embedded into a deeper culture or (political) tradition, which are nearly immutable. Hence institutions are essentially inherited from the past, and only ‘epoch-making’ external shocks (e.g., colonization) can have a real impact on the prospects of change. These two views, while paradoxically opposite to each other, suffer from a general similar shortcoming: it is either assumed that agents are solely driven by economic exchange motives, and therefore institutions are destined to acquire a certain (unique) welfare-maximizing form which can be identified by (all) rational individuals, or agents are simply the carriers of ‘cultural memes’ which are themselves interpretable uniquely in an one-dimensional way. In both cases there is no real choice and human agency (Chang, 2011). This final point leads us to a discussion on the underlying assumptions about rationality and agency in the theory of institutional complementarity.

3.3.3) Of rationality and agency

Perhaps now it is time to come back to the writings of Masahiko Aoki, whose work opened section 3.3 on institutional complementarities. Aoki (2001, 2007) frames the question of institutional complementarities and institutional change through a game-theoretical language. To be sure, one should notice the difference between a ‘game-form’ and game-theoretical mathematical models, mostly employed by mainstream economists. The game-form employed by Aoki is, in a first level of abstraction, ‘utility-independent’, and is ‘meant to capture only the objectively identifiable parameters of the game’ (Aoki, 2007: p.3n2), without the necessity of attributing numerical pay-offs and utility functions to the players of the game⁹¹.

⁹¹‘Viewing social interactions among agents as a ‘game’ should not be regarded as idiosyncratic to mathematical game-theorists who have developed elaborate analytical tools...Such a view, albeit informally, can be traced as far back as to the writings of Adam Smith...’ (Aoki, 2007: p.4).

The game is played by agents who presumably are not fully aware of other agents' intentions, but must make choices based on his/her expectations on others' actions and correlated outcomes. Moreover, an agent's choice or plan of action is conditioned by perceived external constraints, like institutional parameters, available technologies, rules and the legal system, and the agents' own given set of skills and capabilities, accumulated collective knowhow, and perceived scope for collective action (Aoki, 2007). Agents, thus, are bounded-rational (face a limit in their capacity to analyse the objective structure of game) and strategic (take into consideration other agents' (perceived) actions in order to decide on a desirable course of action). Given their bounded-rationality, one may wonder how it is possible to act strategically. The answer provided by Aoki (2007) is that it is sufficient for agents to 'know only the *salient* features of the ways the game is being repeatedly played' (p.6, emphasis added). In other words, agents are able to form a common perception of the game's nature and how it is executed.

This common perception is able to be formed and grasped because there is a minimum level of knowledge which is common (i.e., shared by all) at a stable state of the game. Here the aid of the concept of 'common knowledge' is required. For Aoki (2010), common knowledge 'represents the knowledge or belief that even the least informed player knows about the true game situation' (p.142). Therefore, a state of common knowledge is able to seize the *salient* features of the game (its nature and how it is played) and can also offer each agent rough expectations about other agents behaviours. When a game is played repeatedly and its outcomes are stable enough over time common knowledge may be systematized into rules. The latter, thus, is not an *a priori* assumption, but emerges by the repeated equilibrium plays of game, in which each time the common knowledge and its representative or systematized form (rules) are reconfirmed. In order to common knowledge to surface it is *not* necessary that each player is fully aware of all the choices of all other players. Rather, agents simply need to share some rough ideas about how the game is repeatedly played - every agent must know that a certain proposition is true and that everybody else knows that it is true (Aoki, 2007).

Institutions, then, arise when the salient patterns of agents' interactions are repeated in a self-sustained way. Those salient patterns eventually assume the form of rules which every agent is aware of and are *absorbed as shared beliefs* regarding how the game is played. Therefore, one reaches Aoki's (2001) 'rules-cum-beliefs' definition of institutions as 'shared beliefs

about the salient ways in which the game is repeatedly played' (p.26). Most importantly for our case, however, is the fact that agents play games in different domains, and in each of them there are particular, domain-specific, interactions among agents.

Institutions will arise in each domain as a response for each particular pattern of interactions. For Aoki (2007), a domain is the composed 'set of agents mutually interactive in certain kinds of interactions and the sets of activated action choices for each of them' (p.3). Notwithstanding each domain's own specificities⁹², an equilibrium solution for a game 'may neither arise nor be sustained in a *single domain independently of other domains*' (Aoki, 2007: p.14, emphasis added). It follows that institutions usually envelop different domains, and institutions in different domains most likely co-evolve, in the sense that the evolution and change experienced by an institution within a particular domain affects and is affected by the evolution and change experienced by an institution in a distinct domain.

This system of co-evolution becomes possible due to inter-domain game linkages and institutional complementarities (intra and inter-domains). It is assumed that players coordinate choices across more than one domain (i.e., games are linked) and that they mind institutions in distinct domains as parameters and hence they forge strategies in the original domain contingent on that (i.e., they include institutional complementarities when playing). In this context, institutions in different domains evolve in a mutually reinforcing fashion and interdependently. Perhaps the main consequence of this approach is the clear possibility of the existence of multiple, non-Pareto-optimum equilibria, boosting the diversity of institutional arrangements observed in general. Therefore, Aoki provides a neat explanation for the persistence of a variety of institutions, even if features like technology, skills and endowments are very similar across different regions. According to the author (Aoki, 2007), the advantage of framing it through game-theoretical lenses is the greater analytical tractability of notions such as institutional interdependencies and path-dependence.

Given this theoretical framework, one may now turn once again to the issue of institutional change. The inner development of a player's skills, capabilities, or external changes in the overall environmental conditions (like new laws or higher external competition) will change the game-form players identify. Ergo, agents will adjust the way they play, and with time and

⁹² Aoki conceptualizes four domains: economic, political, organizational and social

repetition cumulative outcomes of the repeated plays will create inner inconsistencies within the prevailing institutional environment, leading to a questioning of the perceptions of the way the game is played. Hence, the shared beliefs about the salient ways in which the game is repeatedly played are put under suspicion, and the gates for institutional changes are open. Just as agents' held shared beliefs are shaken, a new pattern of plays starts to become predominant and eventually accepted *en bloc*. If agents' new choices are able to yield an adequate pay-off we are already witnessing the works of a new institutional arrangement. (Aoki, 2007).

Aoki's game-theoretical framework provides an analytical foundation for the ideas on institutional complementarity and institutional change discussed earlier. Recall that for the RT the very notion of regimes of accumulation implies 'a whole set of *regularities* which allow a general and more or less *consistent evolution* for capital formation' (Boyer, 1988a: p.71, emphasis added). These regimes and modes of regulation, however, are abstractions constructed *a posteriori*; they are theoretical constructions which include the behaviour of all individual and collective agents responsible for reproducing certain basic social relationships. These abstract constructs (*ex-post* discovered) are hardly apprehended in their full coherence and completeness by all sort of economic agents who actually make the relevant economic decisions⁹³ ordinarily. To ensure that the plethora of decentralized decisions - made by agents who are not fully aware of the existing systemic complementarities and adjustment mechanisms – actually end up reproducing a set of basic social relationships (crystallized in certain institutional forms) we need a conceptualization of agents behaviour under bounded rationality and social interactions characterized by complementary links. This is offered by the analytical, game-theoretical, work by Aoki.

Amable's conceptualization of institutions as a sort of political economy equilibrium forged by the compromise between conflicting social actors also sits comfortably with Aoki's theorization. This stance allows us to analyse how agents' strategies in one institutional realm (or domain) is complementary or conditional to outcomes and strategies of other agents' behaviour in other domains or institutional realms. Institutional change, understood as the outcome of strategies aimed at improving the situation of at least some (or all) components of

⁹³ As Boyer (1988a) puts it: 'Actually the process of fitting production and social demand in a given set of structures and institutions is always an uneven, unbalanced and usually contradictory consequence of very *partial rationalities and strategies*, however integrated modern corporate economies may seem' (p.68, emphasis added).

a given socio-political compromise, also becomes more deeply grounded within Aoki's framework. The same goes for the actual result of institutional diversity in modern capitalism – Aoki shows that societal games have multiple solutions, and their viability depends on the co-evolution and complementarities across different domains. The observed varieties and diversity of capitalisms can be seen as the epiphenomena of more basic, abstract, multiple-equilibria outcomes stemming from repeated games. An important difference between the RT/Amable and Aoki's view, however, revolves around the issue of institutional hierarchy. For the latter, institutions normally overlap different domains, and dynamic institutional complementarities guarantee a process of institutional co-evolution, with no particular hierarchical ordering. Therefore, for Aoki there is no such direct causation from one domain to another. One cannot say that decisions in a specific domain or institutional arrangement will unequivocally determine the institutional forms in others⁹⁴.

3.3.4) On Aoki's methodology and on the 'exogenous-endogenous' and 'constraint-enabling' dichotomies

A final note on some methodological issues and comparisons with NIE is due. For Aoki, an institution may appear as exogenous in the sense that, once established, it works as an external constraint to individual action, specifying the parameters of an agent's consequence function. This is very similar (if not identical to, the NIE approach). However, for institutions to actually emerge and last, they need to be continually reconfirmed via repeated games played by the relevant agents. In this sense, institutions are endogenous and are responsible for 'enabling' agents to set mutually consistent choices. Aoki (2011) makes use of the concept of 'institutional substantive forms'⁹⁵. These are responsible for *mediating* between the salient patterns of social interactions and individual behavioural beliefs. As such, it performs the role of a 'guide' for agents, in the sense that it allows the bounded-rational agent to take some given common knowledge for granted and therefore allowing him/her to ease the information-processing burden. Only through this 'enabling' role played by institutions – it provides a rough idea of how the game is normally played – rationally bounded agents are able to

⁹⁴ Paradoxically enough, here one may find a similarity between the RT and NIE: both approaches assume *some* form of hierarchy across institutions. For the NIE, in particular, it is often presumed that political institutions determine the institutional forms in the economic and organizational realms, like in Acemoglu et al (2004). For the RT, recall the discussion on institutional hierarchies presented earlier.

⁹⁵ These may assume the forms of statutory laws, social norms, rule-based public and private organizations, contracts, addresses of political leaders and campaign slogans of political parties, emergent social icons, new modes of organizational architecture, media reports and so on. In general and in a more abstract term, it could be referred to as 'social cognitive artefacts' or '(quasi)-public representations' (p.22).

overcome their limits on information-processing and achieve consistent choices, enabling the social fabric to operate in a somehow regular, coherent logic in the absence of a grand social engineer.

Methodologically, institutional substantive forms play the central role of welding individual behaviour and the broader social structure, external to the individual. Hence, it represents a critique to a crude form of methodological individualism, often dear to NIE. To quote Aoki (2011) at length:

‘the substantive form of an institution is created by agents all together, not by a single agent such as government, and existing as a societal artefact not reducible to agents’ individual attributes. Shared belief in the sense of an identical belief up to the commonly cognizable state is its induced consequence within individual minds and cannot emerge by itself...Equilibrium correspondence between physical states of play and cognitive states of individual agents cannot be constructed only through decentralized decisions of fictitious Homo Economics who hold a priori beliefs and intentions prior to societal interactions’ (p.25-26.).

With that note in mind we may come back to the ‘exogenous-endogenous’ duality. Categories such as institutional substantive forms, common knowledge and shared beliefs can only be animated and embody meaningful prescriptions if they are supported and (re)confirmed by the continual plays of the game, i.e., they are endogenous and not the mere aggregation of individual behaviour. It would be very tempting to assume Aoki is working with the notion of ‘emergent properties’ - the idea that ‘novel properties may emerge when entities interact, properties that are not possessed by the entities taken in isolation’ (Hodgson, 2007: p.220) – but the scholar never explicitly takes this position. Rather, Aoki seems to be attempting to emphasize the idea of co-evolution (between individuals’ beliefs and behaviours and the broad social cognitive categories such as common knowledge and institutional substantive forms)⁹⁶. In his words (Aoki, 2011), these categories ‘are knit together to generate a societal order. Neither methodological individualism nor ontological holism can narrate a complete story of society’ (p.26). This sort of ‘compromise’ in Aoki’s (2007, 2011) methodology is akin to his attempt in reconciling exogenous and endogenous views on institutions⁹⁷.

⁹⁶ Note that, while not explicitly, the principle of emergent property is implied in the works of Amable and Boyer on the concept of institutional complementarity. For a discussion on the concept of emergent properties see Hodgson (2000b).

⁹⁷ See Hodgson (2015: p.85-89) for a general critique of the usage of game theory in the realm of institutions. Note, however, that the author does not delve into the details of the framework developed by Aoki.

As a final point, it is important to observe that this ‘enabling’ function performed by institutions simply guarantees that a solution – perhaps a transitory one - will be achieved, but it is far from ensuring the attainment of the most efficient outcome, however defined. Once again, the multiple-equilibria conclusion of Aoki’s approach is reinforced, laying a careful analytical and theoretical foundation for the diversity of institutions, complementarities, and indeed of capitalisms one observes in reality.

3.3.5) Local level institutional arrangements and a critique on methodological nationalism

Boyer (2005a:546) readily admits that both VoC and RT, overtly or covertly, presume that a particular institutional architecture is *predominant* in each type of (national) capitalism. This may be seen as a caveat, because the canonical national idealizations of the types of capitalisms under scrutiny clearly present distinct organizational forms prevailing within the national economy. For the case of the US, for instance, the canonical Silicon Valley firm is markedly different from canonical American corporations like DuPont and General Motors (which were scrutinized by Alfred Chandler, for instance). Crouch et al (2009) demonstrates that in Germany actually one may find a coexistence of distinct institutional arrangements, usually place- and sector-specific. In particular, sectors like advanced services and biopharmaceuticals – predicted by VoC to perform better under LMEs arrangements rather than CMEs ones – are not performing badly at all in Germany.

These findings point out that the institutional complementarities usually assumed by most scholars within this research programme are not as tight as one could firstly suppose. As indicated previously, this had already been noted by authors such Streeck (2005), whose notion of ‘loose enough coupling’ enabled us to properly examine institutional change in a meaningful manner. The novelty here is the acknowledgment of the ‘creation of autonomous subsystems at the sectorial or *local level*’ (Crouch et al, 2009: p.657, emphasis added), which may set their own, specific, governance structures.

For Crouch et al (2009) there are three reasons why such ‘subsystems’ may occur and thrive: a) there may be some local-specific features which are more suitable, or more supportive, to alternative forms of organization other than the prevailing national institutional architecture; b) the differences between local and national arrangements may allow actors to consciously produce innovative (local) institutional outcomes, in a process dubbed ‘creative

incoherencies'; and c) actors may simply be less constrained by national institutions than theories on varieties and diversities of capitalisms normally supposes. While these are valuable insights, especially because they indicate that the nation-state is not always the relevant level of governance to which one must delve attention to, these conceptualizations are still assuming the *existence of a national* model. In other words, deviations and even challenges to a prevailing national institutional arrangement are now granted, but the very existence of this institutional coherence, at the national level, is still the bedrock of the approach.

In order to overcome these theoretical and conceptual limitations, Peck and Theodore (2007) animated the notion of 'variegated capitalism'. The literature on diversity of capitalisms in general, and VoC in particular, assumes there are a number of distinctly identifiable *capitalisms*, neatly encaged by the nation-state. For the variegated capitalism approach, however, capitalism should be perceived as a single economic system, one in which we observe constant institutional, social and political (re)structuring, taking place at distinct scales and localities (Leon, 2015), other than simply at the nation-state level.

Indeed, the idea of multiscalarity⁹⁸ - contrariwise to the sole focus on one single scale - is a defining feature of the 'variegation' research programme. Drawing on the tradition laid out by economic geographers, one should perceive capitalist economic activities as forging and reshaping links and intersections across multiple levels of governance. This continual process of geographical variegation is regarded to be at the heart of capitalism, and, as Dixon (2010) puts it,

'such an approach does not view 'multiple' capitalisms, but views capitalism in the singular, but more importantly as a dynamic polymorphic process whose development is uneven and 'variegated'...'(p.197)

The variegation approach, thus, is a framework in which capitalism is perceived as a sort of engine of geographical differentiation, and uneven spatial development is one of its hallmarks. This systemic variegation, however, is translated in different manners by each locality. Distinct geographical scales assumedly always have some capacity to adapt and mutate, given the ongoing transformations in a broad macro-institutional setting. Hence, the approach aims

⁹⁸ Putting it simply, acting across more than one geographical scale.

at apprehend the *global* thrust of capitalism and simultaneously illuminate its *local* specific configurations throughout scales and places.

Indeed, VoC's adherence to methodological nationalism and spatial typologies, with national-level institutional coherence being presumed instead of demonstrated seems to be the main source of disturbance in Peck and Theodore's (2007) motivation to formulate their contribution. For the scholars, strong institutional coherence may exist at the national scale, but it cannot simply be assumed from the onset. If capitalism is understood as a scalar-diverse system, prone to undergo polymorphic transformations, framing it through 'fetishized' (p.759) national lenses will simply distort the actual picture, perhaps missing transformations occurring below the radar, at the sub-national level. In the same vein, for Dixon (2010), to undertake comparative studies solely at the national level makes the researcher susceptible to many 'empirical blind spots' (p.198).

The preceding paragraphs hopefully demonstrated that the 'variegated capitalism' approach is fundamental for the researcher who aims at scrutinizing the local level through institutional lenses. While crude notions of methodological nationalism, like the one exposed in VoC, must be avoided, the more generic concept of institutional complementarity may be retained. The researcher task becomes how to - in a context-specific case study - indicate what the relevant complementarities at the local level are, and what are the interconnections between the local, national and global. The RT seems to be particularly suitable for this endeavour, as it apprehends capitalist growth as always embedded into a historically specific accumulation regime. Accordingly, institutions are seen as the codification of deeper social relations. Similarly, Amable's conceptualization of institutions as the socio-political compromise resulting from the conflict among heterogeneous agents seems flexible enough to deal with geographical variegation proposed by Peck and Theodore (2007).

3.4) Summary and conclusions

This chapter has delved into the debate on institutions. Initially, one must recall the connections between growth theories (and structural change), scrutinized in chapter two, with institutions, the topic of the current chapter. In chapter two it was argued that economic growth is likely to necessitate some institutional imperatives to materialize, and that over the long-run institutions once conceived as conducive to economic growth may in a later moment

become an impediment for further structural changes, technological upgrading and long-run economic growth. That is because, when framing the question from the Kaldorian perspective, an economy may get ‘stuck’ into certain sectors/technologies inherited from the past. This might happen as a result of the *inter-relatedness* of different components of a given production process (physical and human capital, specific knowledge involved, and the type of public goods available). This sort of inter-relatedness creates barriers to change one component of the productive process without altering (all) the others. Therefore, technical change may become overly expensive and unfeasible to be coordinated by decentralized agents, as rational as they can be. Institutions play a crucial role in the process of structural change because they become the means that enable agents to coordinate the decisions which will support a new (and more advanced) productive process. For example, a given dominant productive process may demand a specific institutional arrangement (say, a particular mix of public/private R&D expenditure, supply of collective goods, laws on intellectual property rights and specific regulations on market structure), which becomes very supportive of the prevalent productive process. However, in order to promote technical change and incorporate different (new) economic sectors, a distinct institutional arrangement may be required. In this sense, the economy may be found stuck in an ‘institutional lock-in’ effect (Setterfield, 2010). A proper conceptualization of institutions and, notably, a discussion on institutional change, is mandatory if one wishes to understand how long-run economic growth materializes.

After briefly reviewing the mainstream view on the topic (section 3.2), an alternative perspective was examined. The alternative theoretical approach (‘comparative institutional analysis’) was developed in section 3.3, giving emphasis to the concept of institutional complementarity and its distinct employment by different strands of the institutional literature. The concept of institutional complementarity is based on the idea that there exist mutually reinforcing effects among distinct institutional realms, to the extent that the effectiveness of a certain institutional form must be supported by institutional forms in different realms. One of the main consequences of adopting this concept, especially for this thesis, is that the notion of ‘one-size fits all’ or ‘best institutional practices’ must be questioned. If in order to attain the maximum of its effectiveness an institutional form must be combined with other institutional forms, the whole idea of (universal) ‘best practices’ becomes devoid of real meaning. This opens a possibility for the existence of alternative institutional arrangements, equally effective or efficient, but orchestrated along dissimilar lines. As it will be seen, this rationale dovetails the intended comparison between Nanjing and Suzhou promoted in this thesis.

The concept of institutional complementarities fits very well, and has been employed by, the *régulation* theory (RT). Recall from chapter two that for the RT economic growth is theorized as always being embedded into a historically specific accumulation regime. The latter, in turn, is characterized by the canonical Kaldorian cumulative causation growth scheme, and both the demand regime (DR) and the productivity regime (PR) are thus embedded into a wider, encompassing historical context, which assumes a certain number of specific *institutional or structural forms*. Recall, still, that an institutional form may be understood as the *basis of certain social regularities* we observe, denoting ‘a codification of a main social relationship’ (Boyer, 1988a: p.71), which is deemed relatively stable over time and historically determined. It is *within these institutional forms* that actual growth episodes take place. Therefore, these broadly defined institutional arrangements tend to be the main conduits of economic growth in the long-run, as they have the power to determine the parameters of a discrete (Kaldorian-defined) growth episode. The striking theoretical aspect is not that much the definition and nuances of each institutional form in isolation, but their *interconnections*, i.e., the *complementarities among all the institutional forms* which yield system-level coherence, lending the required institutional support for an accumulation regime to materialize. The viability of any accumulation regime will depend on the harmony (or otherwise) between the institutional forms under scrutiny.

If for the RT institutional forms are simply ‘a codification of a main social relationship’ (Boyer, 1988a: p.71), as seen previously, institutions can be defined as representing ‘a compromise resulting from the social conflict originating in the heterogeneity among agents (Amable, 2003: p.10). This political economy view allows us to go beyond a mere functionalist approach on institutions and institutional complementarities, and the idea of socio-political compromises is placed at the heart of the debate. It follows, therefore, that the diversity of institutional arrangements, capitalisms, or ‘local models’ the scholar observes are simply the mirror of diverse socio-political compromises among various groups found in different areas.

Having said that, a discussion on institutional change ensued, in order to highlight how a set of complementary institutions might evolve over time, the requirements for institutional change to materialize and what are the factors likely to block it. Institutional change will come to life when the socio-political compromises sustaining a given set of institutions is

shaken, disrupted, or challenged, to varying degrees of intensity. In order to understand institutional change, thus, one must go deeper than the surface where institutional forms are detected and analyse the new accommodations and agreements forged by the relevant agents.

The contribution of Aoki (in sections 3.3.3 and 3.3.4) was highlighted because, even if the author is not affiliated with the RT, it provides an analytical foundation for the ideas on institutional complementarities and institutional change discussed earlier. Aoki emphasizes the idea of co-evolution between individuals' beliefs and decision-making with the broader social structures in which they are embedded in. This co-evolution is what ensures that the decisions made by the plethora of decentralized individuals who are not fully aware of the existing systemic institutional complementarities end up reproducing a set of basic social relationships (crystallized in certain institutional forms). In this regard, Aoki's contribution is highly complementary to the RT work.

The last point worth of attention revolves around the issue of *local* institutional arrangements. It was noticed the literature's heavy inclination towards analyses centred (solely) on the national level. As this thesis is concerned with *regional* economic growth, this fact poses a complication for a meaningful analytical framework to be developed based on the concepts of institutional complementarities and on the broad 'comparative institutional analysis' paradigm. As it will be seen in the empirical analysis of this thesis (chapter six), the comparison between Nanjing and Suzhou relies precisely on the concept of institutional complementarities, but applied to the local level instead of the national level. Each city is characterized by distinct socioeconomic formations and structural features, which in turn are a function of city-specific institutional arrangements. In other words, it can be argued that prefecture-level cities in China can be perceived as a unit of analysis in its own right, and as such a system of institutional complementarities will cohere at this level.

If the traditional RT literature works normally with the idea of the existence of a diversity of capitalisms, as seen previously, this thesis will shed a light on distinct 'local models' in contemporary China, adapting the concept of institutional complementarities to the local level. This strategy is only possible because, as hinted in chapter one, the 'Chinese model', to the extent that it exists, can be characterized by the existence of 'regional models', each of which featuring distinct institutional arrangements. Nanjing and Suzhou will underscore the existence of at least two distinct, yet successful, patterns of institutional arrangements in

contemporary China. The concept of institutional complementarities allows the scholar to tackle this comparison without the need to pin down which ‘local model’ is unambiguously superior to the other.

There is nothing in the ‘comparative institutional analysis’ theoretical edifice that precludes the scholar to apply the concept of institutional complementarities at the local level. What is required is a proper justification for the scaling down of the concept. This justification is context-specific, and therefore the specificities of the Chinese case must be presented before this thesis proceeds with the empirical analysis of Nanjing and Suzhou.

Despite of privileging the prefecture-level cities as the proper unit of analysis for this thesis, one cannot treat them as hermetically isolated from the rest of country⁹⁹. Indeed, prefecture-level cities are connected with both the national level and the international economy. Hence, and despite of the focus on the local level, this thesis must also show how these three levels (local, national, global) are interconnected, in a theoretically informed way. Luckily, more recent notions such as ‘variegated capitalism’ (presented in section 3.3.5) seek to tackle the multiscale of capitalist development, allowing the scholar to frame local economic growth from a broader and coherent perspective, linking the local level with both the national and international levels of analysis. How to specifically do it will depend on the specific case study one aims at exploring. The specificities of the Chinese case will be presented in the following chapter, while the justification for prefecture-level cities as the proper unit of analysis for this thesis comes next, in chapter five.

Having said that, chapter four will move away from purely theoretical debates and will finally plunge into a China-specific discussion. Chapter four will be dedicated to China’s local state, as well as its relations with the central (national) government. Only after thoroughly investigating these issues it will be possible to develop an original analytical framework useful to investigate local economic growth in contemporary China (to be presented in chapter five).

Before moving to chapter four it is important to stress that a theoretical approach closely affiliated with the mainstream paradigm would be problematic to be adopted in this thesis for

⁹⁹ This debate was made known in the introduction (chapter one) of this thesis and will be resumed in chapters four and five.

at least two reasons. Firstly, NIE heavily relies on data from formal, ‘de jure’ institutions, like governance indicators and property rights, that are usually organized and systematized at the *national level*, and hardly available for sub-national areas. While cross-country econometric studies abound, case studies of regions within a country are less frequent. Secondly, this body of literature relies, even if indirectly, on ‘one size fits all’ recipes, with policy suggestions based on blueprints and on ‘best practices’. The practical result is the ‘blurring of the regionality’, with localities treated just as miniature of the national level, regardless of their own particularities. This approach would not be able to fit the rationale of contrasting two successful (yet distinct) ‘local models’ in China.

Chapter 4: The Local State and Central-local relations in China

4.1) Introduction

Expressions such as ‘decentralization’ and ‘local models’ have become buzzwords when pundits attempt to explain China’s spectacular economic growth since the late 1970s. However, under the umbrella of ‘decentralization’ lie distinct categories: economists usually focus on fiscal decentralization, normally meaning that larger shares of fiscal revenues are accrued by lower-level administrative units. But one may also shed a light on the decentralization of political control, referring to the loosening of the *nomenklatura* system (Wang, 1994), meaning that central authorities have a weaker or more limited reach on the nomination of local officials. Thirdly, one may refer to a process of simple administrative decentralization, in which localities gain discretion to decide upon specific policies and governance issues, while still lacking political autonomy. Often these distinctions are neglected, blurring one’s comprehension of China’s inter-governmental political economy. The debate on ‘local models’ is often intertwined with these aspects mentioned above, and commonly indicates that different localities have the discretion to pursue relatively distinct institutional arrangements, in the sense that local specific conditions are not overshadowed by an imposition of national directives by the central government.

In order to properly make sense of each of these elements, and the way they interlace to each other, one must investigate the historical legacies that were inherited by the Post-Mao Era in China. A closer inquiry into these topics may reveal that patterns associated with the Post-Mao Era’s economic growth are deeply rooted in China’s modern history and institutions. Moreover, as the object of this chapter is, in varying degrees, the state itself (in its multiple dimensions), it cannot be theorized away in any historical inquiry of the topic. The Chinese state has been a remarkable political force shaping the outcome of China’s developmental trajectory. As the modern Chinese state is undeniably dominated to a great extent by the Chinese Communist Party (CCP), it follows that the latter itself must be understood as an institution constantly moulding China’s development. Therefore, it is not only necessary to bring the ‘state back in’, but also the ‘party back in’ if one aims to satisfactorily engage with the debate of the role of the local state and decentralization on Chinese economic growth.

This chapter is divided into four sections: apart from this brief introduction, the second session will discuss the roots of the importance of the local state and decentralizing efforts for the CCP, coming back to the Yan'an period and later to the Maoist Era. The third section will critically present an account of the main theoretical insights put forward by mainstream economic theorists, in order to understand and explain China's post-1978 economic reform through the lenses of the central-local relations debate. This section concludes with the debate on the role of the local state during the Post-Mao Era and section four wraps-up the discussion and broaches the subject matter of the next chapter.

4.2) Legacies from the Maoist Era

The road the Chinese Communist Party (CCP) trailed to finally reach the power in 1949 was very different than the one by the Russian Bolsheviks. Even before their final victory in 1949, the CCP had already accumulated actual experiences with governance. During the period of time often labelled the Yan'an Era (1937-1945), the CCP, led by Mao Zedong, forged a unique tradition on governance.

Lieberthal (2004) defends that after the Yan'an period the CCP solidified a set of principles that can be known as the 'Yan'an complex': decentralized rule; considerable operational flexibility allowed to local leaders; preference for officials who can provide leadership in a range of areas (politics, administration, military affairs) instead of only a particular; and developing and maintaining close ties with the local population. Chung (2000) defines the 'Yan'an tradition' as various bottom-up initiatives and anti-bureaucratism movements. This distinctive 'Yan'an tradition' can be contrasted with a more centralized, functionally specialized, hierarchical, commanded-oriented approach of the Soviet Union.

With the final victory against the Nationalist Party (GMD) in 1949 the party had to make the transition from a revolutionary to a ruling party, and national development priorities gained thrust. With the CCP in power, the Maoist Era (1949-1978) witnessed in practice clear aspects of 'commandism' and centralization, associated with the Soviet experience, and other governance elements encapsulated by the Yan'an tradition, creating a period marked by contradictory facets.

In this period distinct developmental strategies and governance methods were attempted. While the first five years plan (FYP) (1953-57), largely based on Soviet advice and assistance, was managed in a centralized fashion, with vertically-organized industrial ministries, and the suppression of the price system (Lardy, 1987), other domestic initiatives challenged this view on economic development.

A series of distinct strategies relied on the decentralization of governance, local self-sufficiency and the dispersion of economic activities throughout China's vast territory, with a special emphasis on rural industrialization.

The great leap forward (GLF) strategy, launched in the late 1950s, sought to re-establish a greater autonomy to local governments (the newly created communes) and bet on rural industrialization, aiming to break down the centralized, hierarchical administration that was perceived to be rising from the implementation of the Soviet-inspired first FYP (Gray, 1973; 2006). Moreover, the Maoist agricultural and food policies were also permeated with the concern over local autonomy. According to Lardy (1983), during the 1960s the CCP implemented the policy known as 'Grain first': local governments – commune and counties – should prioritize the sown area with grain *vis-à-vis* cash crops, aiming to promote agricultural self-sufficiency. The real extent of the policy of local self-sufficiency during the late Maoist era is debatable (Bramall, 2009). It is certain, however, that the central government had envisaged it as a *de facto* strategy to be pursued and employed mechanisms in order to achieve it.

Roughly in parallel, China launched the so-called Third front industrialization programme. The Third front started in 1964, out of *military concerns* regarding the presence of American troops in the Vietnam War, and lasted until 1971¹⁰⁰. However, its effects on the Chinese economy, due to the long-term nature of the investments undertaken in the period extended until the turn of the 1970s to the 1980s. The Third front aimed at creating 'large-scale production plants dispersed in remote locations' (Naughton, 1988: p.355), the establishment of a *self-sufficient industrial base* in China's countryside, and was centrally-managed. Notwithstanding the geographically *sparse distribution* of the investments, and its *location* in the vast Chinese hinterland, it was a centrally imposed programme.

¹⁰⁰ The Sino-Soviet split added further military concerns on the Chinese side.

Finally, small-scale industries managed by counties, communes and brigades started to emerge again in the late 1960s. According to Bramall (2009), after 1968 county-owned state-owned enterprises started to expand and in the early 1970s commune and brigades industries followed the trend. Rural industrial growth, therefore, increased sharply, averaging 15% per year in the period 1964-1978, in contrast with an average of 11% of the overall industrial growth in the same period (Bramall, 2009: p.270). The author concludes that ‘an extensive rural industrial sector had been created across the Chinese countryside’ (Bramall, 2009: p.270), and estimated that around 50% of the total industrial workforce was to be found employed in rural industries as for 1978.

All of these policies changed the economic landscape of the country, and local states at the twilight of the Maoist Era could not be described simply as appendices of the central government. Donnithorne (1972) attempts to make sense of the organizational pattern of the Chinese economy that emerged in the final years of Maoism.

According to Donnithorne (1972), China evolved towards a pattern of a ‘cellular economy’: the trend of individual units behaving increasingly towards a higher degree of self-sufficiency and self-reliance. The concept implies the ability to rely mostly on one’s own resources, instead of depending on planned (central) co-ordination¹⁰¹. Units, in her framework, could be either enterprises or administrative levels of governance. In the case of the former, enterprises were expected to obtain raw materials and resources from outside of the state plan, while in the case of the latter counties and communes were urged to ‘build a small but complete local industrial system by self-reliance’ (p. 607-08).

This new configuration of state ownership and the loosening of obligations imposed by the centre certainly gave communes and counties more independence from the state apparatus. The overall ‘cellular economy’ trend and the self-sufficiency paradigm, hence, resulted in local leaders becoming increasingly responsible for the economic development of their localities. Almost as a consequence, this system arguably gave some administrative units the encouragement for spurring local initiative. Units that were able to raise funds locally

¹⁰¹ Here it is suitable to recall that the number of industrial commodities allocated by the central government never exceeded more than 600 in China (with its apex in 1965, followed by a drastic decrease as the Cultural Revolution was initiated, and then a recovery to the 1965 level as the 1970s unfolded), whereas in the former USSR this number probably reached something around 60.000 (Naughton, 1995: p.41-42).

strengthened their autonomy, for outside influxes of resources became less important (Donnithorne, 1972).

4.3) Central-local relations and the local state in Post-Mao China: economic mainstream interpretations and critiques

4.3.1) Introduction

This session aims to critically present an account of the main theoretical insights put forward by mainstream economic theorists, in order to understand and explain China's post-1978 economic reforms through the lenses of the central-local relations debate. Key theories, such as their applications to the Chinese case, will be presented. Initially, the theoretical underpinnings of fiscal federalism will be exposed. It was decided to start with the fiscal federalism debate because my understanding is that many of the theories and insights that mainstream economists and even political scientists employ rests on the rationale of the fiscal federalism approach. Market-preserving federalism (MPF) is assumed as a logical follow-up of fiscal federalism, once it encountered the New institutional economics (NIE) debate that flourished in the turn of the 1980s to the 1990s. The application of these theories to China was meant to explain how the country managed to trigger a successful reformist programme, while the reforms in the former Soviet Union encountered a distinct fate. Subsequently, I aim to criticize these federalist-inspired theories applied to China. To my account, they correspond to rough simplifications of China's reforms throughout the 1980s and 1990s, and are not reliable paradigms if one endeavours to scrutinize China's central-local relations and the 'decentralizing' efforts in the period. Following, I present mainstream theories modelling China as a large corporation organized in a multi-divisional (M-Form) fashion, in opposition to the former Soviet Union, arguably a unitary organizational form. From this debate, another body of literature has emerged, based on the political incentives determining the behaviour of local governments, given local cadres' career concerns. This could be perceived as the mainstream response to the shortcomings and flaws of the 'federalism, Chinese style' approach. While accurately addressing some key issues of China's political economy (namely, the continuous power of the central government), this last strand of literature has its own flaws, and its adherence to neoclassical assumptions makes it unable to grasp the complex dynamics of China's intergovernmental relation. Finally, Heilmann's (2008a; 2008b) notion of 'experimentation under hierarchy' is presented. This approach proves to be adequate and

useful to explain the intricateness of China's intergovernmental institutions. Moreover, it enables a proper understanding of institutions, developed in the previous chapter, to fit neatly with the explanation of China's institutional innovations in the period. At last, the debate on the role of the local state during the Post-Mao Era will be briefly discussed within Heilmann's framework.

4.3.2) Fiscal decentralization and fiscal federalism

The theoretical underpinnings of fiscal federalism, in general, and fiscal decentralization, in particular, can be traced back to the 1950s debate on public (local) expenditure. Samuelson (1954) realized that public goods (or 'collective consumption goods', to employ his expression) cannot have their level of consumption optimally squared in a purely 'market-type' solution. These goods are non-excludable and non-rival, giving rise to the free-riding problem, and as a result the levels of collective consumption cannot be achieved optimally.

The key problem was how to efficiently provide public goods to citizens. Assuming that they have distinct preferences for public goods, the question therefore is how to reveal their preferences, and then satisfy them in the same way as competitive markets would do, and finally tax them accordingly. Acknowledging that there are no means to force the citizenry to reveal its preferences, Tiebout (1956) searches for a mechanism or social institution that can somehow work as a proxy for that. He innovates by breaking down public expenditures vertically, inserting the local level governments in the discussion.

Tiebout (1956) focus on the citizenry decision-making of where to dwell, assuming that households possess full mobility, perfect information and that the decision is based on their particular preferences for public goods. Therefore, households will move to the localities whose local governments can best meet their preferences. As one can notice, the act and ability to move is crucial in the reasoning. The household decision to move may reveal one's actual demand for public goods.

The original problem is solved then. With a mechanism to reveal the citizenry's preferences, Samuelson's original concern disappears and public goods can now be provided optimally by *local* governments. Decentralization of public expenditure becomes the means for governments to emulate markets in the provision of goods. The parallel is straight-forward, to quote Tiebout (1956):

‘just as the consumer may be visualized as walking to a private market place to buy his goods, the prices of which are set, we place him in the position of walking to a community where the prices (taxes) of community services are set. Both trips take the consumer to market...Spatial mobility provides the local public-goods counterpart to the private market’s shopping trip’ (p.422).

The literature on fiscal decentralization has evolved on a steady pace after these initial developments, involving not only theoretical advancements but also empirical tests. Porcelli (2009) offers a brief and neat survey on this matter. The ensuing paragraphs will focus on the more recent paradigms regarding fiscal federalism, especially based on the works of Oates (1999; 2006).

As Oates (1999) notes, fiscal federalism’s crux is to determine ‘which functions and instruments are best placed in the sphere of decentralized levels of government’ (p.1120). Consequently, it is necessary, on the one hand, to have a framework for the assignment of functions to different levels of government, and on the other hand to study the appropriate fiscal instruments for carrying out these functions.

It is generally understood that the central government should be in charge of the provision of national public goods, such as national defence and macroeconomic stabilization, whereas local governments should be in charge of the supply of goods and services whose consumption is limited to their own jurisdiction, which enables them to tailor outputs to the particular preferences and circumstances of the constituencies. On the grounds of allocative efficiency reasoning, it is argued that as there are local differences in both preferences and cost differentials, the efficient level of output of a local public good is likely to vary across jurisdictions. Hence, in order to maximize overall social welfare, local outputs must vary accordingly (Oates, 1999).

A stimulating associated discussion that has become more important recently is the one regarding the so-called ‘laboratory federalism’. Literally, local governments are supposed to work as ‘laboratories’ to try to find out superior policies and programmes. If the central government undertakes nation-wide policies or experiments, in case of failure or undesirable outcomes the whole nation will have to endure with the negative consequences. However, if local governments are allowed to experiment and search for alternatives by themselves, the costs of potential failures are limited, and a wider array of policy options are available to be

chosen nationally. In an environment characterized by imperfect information and learning by doing, local experimentation with a variety of policies may offer potential national gains (Oates, 1999).

A shortcoming of this idea, nevertheless, is the possibility of a free-rider problem. Local governments that innovate generate valuable information to others, but also incur risks and deal with uncertainty when experimenting and attempting to innovate. The best rational decision for a local government might be to wait and copy the policy solution of a neighbouring jurisdiction, entailing a collective action problem on a macro level.

Another drawback related to fiscal decentralization is the ‘race to the bottom’: in a setting of sharp inter-jurisdictional competition, local governments may be overly eager to lure investors and promote economic growth and job creation, employing active tax competition. As a result local governments might end up with lower levels of taxes and local revenues. The deleterious effects are not only limited to the fiscal realm, but also are translated into more lax standards and regulations for environmental quality and labour rights. In purely economic terms, the result might be suboptimal levels of outputs of public services and allocative distortions.

The whole debate on fiscal federalism and decentralization is based on a neoclassical reasoning, with static allocative efficiency as the ultimate driving objective of the theory. Oates (1999) puts it straight-forwardly: ‘From this perspective, institutions are evaluated in terms of their impact on efficiency in resources allocation and the distributions of income’ (p.1137). Indeed, the overriding concern has always been to vertically mould and manage the state’s financial activities in order to provide public goods in a fashion that somehow can resemble the canonical neoclassical competitive market, given the undeniable existence of both governments and public goods. Tiebout (1956), at the very onset of his article, does not hide his dismay: ‘Seemingly, we are faced with the problem of having a rather large proportion of our national income allocated in a ‘non-optimal’ way when compared with the private sector’ (p.416).

More recently, some scholars attempted to widen the horizons of the fiscal federalism approach. Oates (1999) himself noted that the approach is based on static allocative efficiency grounds, but it lacks a theory of fiscal decentralization and economic growth. Aiming to overcome this deficiency, scholars started to include growth and developmental concerns into

the paradigm. Barry Weingast, associated with the broad camp of NIE, tried to establish the idea of ‘market-preserving federalism’ (MPF), which sustains that government’s enforcement of property rights and contracts, simultaneously allied with limited intervention in other areas, can only be achieved in a sustainable and credible manner in a federal-like, decentralized system.

4.3.3) Market-preserving federalism (MPF)

The fiscal federalism literature suggests that factor (capital and labour) mobility constrains local governments in attempting to undertake market-unfriendly policies, because resources will leave the jurisdiction. This outward movement of capital and labour punishes government-encroaching behaviour, in practice limiting their discretion power. The question, however, is how to devise an institutional arrangement that makes these limits self-reinforcing, restricting, therefore, the ability of organized groups to influence state policies and intervene in the economy. In other words, resolving what Weingast (1995) believes is the crucial political dilemma of any economic system: ‘a state strong enough to protect private markets is strong enough to confiscate the wealth of its citizens’ (p.24). Building upon the idea that the essence of federalism is that it provides a sustainable system of political decentralization, Weingast (1995) is concerned to understand which sort of political institutions are able to guarantee a commitment to a limited government, i.e., a government that can secure property rights and that will not encroach into markets, providing, therefore, a political foundation for markets to develop.

For Weingast (1995), the state can usually exploit societal divisions within a country and forge alliances with one particular group, so to transgress on the individual rights of other societal groups. This pattern of behaviour can be stable, as long as the different groups within the country are not able to form a consensus on what should be the limits and scope of the state’s actions. It is, therefore, a problem of coordination between different groups, akin to a prisoner’s dilemma. Market-preserving federalism (MPF) institutions arises when, due to historical reasons, this consensus is reached, entailing a curtailment of the state’s legal and economic power.

MPF is a sub-set of federal systems. While the latter requires two conditions to exist - an hierarchy of governments, each with a delineated scope of authority (first condition) and an

institutionalized autonomy for each level government (second condition) - the former requires three extra conditions: subnational governments should be the primary authority over the economy; the existence of a domestic common market, with no local protectionism; and subnational units should face hard budget constraints¹⁰². It is important to notice that the simple delegation of power to subnational units is not sufficient, because any delegation of power can always be reversed. The crucial question is how to make this delegation of power credible and permanent.

Analysing the case of England, Weingast (1995) suggests that the Crown could exploit the societal divisions between Tories and Whigs, allying itself with the former and transgressing over the rights of the latter. However, after an attempt by James II to also disenfranchise the Tories from the polity, both societal groups united against the Crown, as the Tories became wary of the unrestricted power of the state. A consensus on what should be the limits of the state ensued, restricting, thus, the power of the English Crown. Tories and Whigs were able to agree on what were the fundamental transgressions by the state, imposing, then, limits on the national regulatory authority. This new consensus was the coordination device that established the limits the state should abide for. As a consequence, local power was strengthened, and the ability of national government to intervene in the economy curtailed. According to the author, this was the critical political component for the industrial revolution in England. The guilds could set a whole series of regulations on new economic activities, but the central government no longer could enforce these restrictions at the local level across the whole country. It was this decentralized regulatory authority which allowed for local variation in economic controls, and ‘allowed local governments to ignore, avoid or repeal the regulatory restrictions on the local economy’ (p.18). As a result, areas far from the well-established commercial centres had leeway to craft their own policies, and the industrial revolution occurred in the North, initially.

The same reasoning is applied for the United States, albeit in a different twist. According to the Weingast (1995), different interest groups grew wary of the power of a federal state to impose policies favoured by one or another particular region. Therefore, it was necessary to devise a system that could limit the ability of a region to impose its will on others. Different political and economic groups had local autonomy, and simultaneously were interested in a

¹⁰² See Maskin (1996) for a discussion on budget constraints.

set of national rules that would prevent the federal government of being encroached by a particular interest group. This system would avoid, thus, rent-seeking behaviour crystalized in beneficial specific laws to one specific group or another. ‘Federalism thus proved the solution to the dilemma of how to limit the states protectionists’ activities without providing the national government with too much power’ (p.8), Weingast (1995) concludes. More importantly, it was the result of a national consensus which made those limits credible.

Purely economic reforms alone, like liberalization of economic activities (‘getting the prices right’), are not enough to achieve economic development, the argument goes. In order to thrive, markets must be accompanied by its ‘political foundations’, i.e., economic development requires a political arrangement that limits the scope of action of governments in a credible and self-reinforcing manner. Historically, it is argued, this task has been achieved by when political institutions resembling the idea of a MPF have surfaced.

4.3.4) Federalism, Chinese-style (FCS)

The evolution and unfolding of the decentralization measures of the 1980s have (re)brought the topic of federalism to the surface in China. Waldron (1990) recounts the debates over federalist ideas in China, tracing its roots back to the period between the late Qing dynasty and the pre-1949 era, and thus attempts to draw some parallels with the current (late 1980s) debate.

In academia, the idea of MPF was applied to China in the mid-1990s (Montinola et al 1995; Weingast, 1995). The central point of the authors is that the Post-1978 reforms in China placed several limits on the discretion of the central government, and, conversely, augmented the power of local authorities. The political system that emerged in the 1980s, with local governments enjoying a greater say in the economic and political arena, makes it difficult for a reversal of this trend, guarantying the *durability* of the reforms. Montinola et al (1995) concludes that ‘political decentralization enhanced the powers of local governments... the decentralization of power is not merely at the discretion of the central political authorities’ (p.52-53).

As a result, the argument goes, China experienced an increased inter-jurisdiction competition, experimentation, learning, and adaptation. Therefore, the country was able to reap the benefits

of a higher mobility of factors, as suggested by the fiscal federalism literature, and also the benefits of a limited government, which does not encroach into economic activities as before and simultaneously is able to guarantee a certain level of security for property rights, as the NIE and MPF literatures points out. This sort of ‘federalism, Chinese-style’ (FCS) is distinct from the Western-style counterpart because it lacks the individual rights and political freedom of the latter (Weingast, 1995), but share a diminished role of central governments in economic affairs and a relatively stable political system that guarantees the centre will not claim its power back. Inter-jurisdiction competition assures resources being allocated more efficiently, via market mechanisms and not via administrative and bureaucratic fiat, while the new political system guarantees limits on rent-seeking and political patronage. Economic growth, then, ensued, explaining ‘China’s miracle’¹⁰³.

4.3.5) Critiques on ‘federalism, Chinese-style’ (FCS)

Albeit ‘federalism, Chinese-style’ (FCS) has become relatively a popular idea, used by many to explain the Chinese success, it suffers from a number of caveats. The main problem might be with the assumption of a diminished power of the central government. Weingast (1995) explicitly affirms that local governments gained ‘political freedom and political protection’ (p.27) and that the central government promoted its ‘loss of political control over local economic policy-making’ (p.22). Montinola et al (1995) states that ‘local political officials are now far less beholden to the central authorities’ (p.70) and that ‘the central government no longer retains the capacity to monitor the vast new economy’ (p.70).

In reality, the central government has never actually lost its control over the localities and has actually developed new methods, arguably even more efficient, of monitoring local cadres. The proponents of FCS largely ignore some key features of China’s political system, especially the ones relating to the political control the centre can wield, and its ability of monitoring local cadres. In his study of the agricultural reforms during the early 1980s, Chung (2000) endeavours to understand the limits and scope of action of both the central and local governments in Reform Era China. Ultimately, for Chung (2000) ‘the centre remains capable of delineating the boundaries of permissible local discretion’ (p.174-75). When a policy becomes a high priority for Beijing, one should expect tight control, with little room for local

¹⁰³ Other important contributions within the FCS framework are Cao et al (1999) and Jin et al (2005).

manoeuvring. This should not be a surprise, given that China's political system is, and has never left to be, a unitary system. In this sort of system 'the central government almost always reserves the right to change the rules of the implementation game' (p.175), Chung (2000) recalls. If his conclusions are accurate, it means that a central pillar of the MPF approach simply does not exist in China: the delegation of power to subnational units only happened because the centre wished so, and it still maintains the ability to claim it back. In other words, the *durability* and the *commitment* to decentralizing reforms cannot be taken for granted in China. Here it might be worthy to quote Chung (2000) in full:

'the durability of the arrangements governing the allocation of authority, resources, and responsibilities has been highly contingent upon the discretion of Beijing, not the provinces.....the political discretion of the centre is not constrained legally or institutionally, the durability of decentralization is closely tied to the strategic choices of the centre' (p.175).

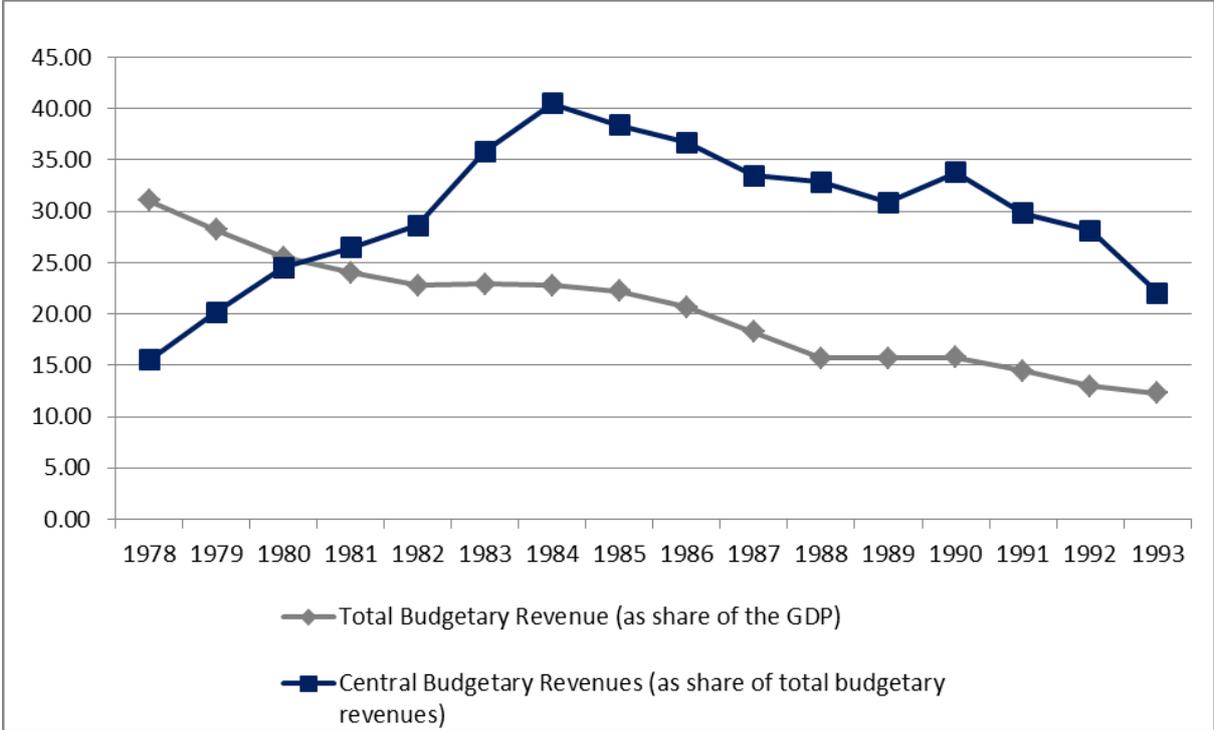
Summing up, *administrative* (and not political) decentralization, coupled with provinces' higher grasp of fiscal and financial resources, indeed took place in the 1980s. This double movement has allowed provinces more leeway in promoting local economic strategies and some degree of local deviations from the centre in terms of policy implementation. There is no longer the appeal of a single model for the whole country to emulate¹⁰⁴. However, the centre will continue to have the right and capacity to impose its priorities on localities and on society in general. Local deviations surely exist, but it cannot be interpreted as outright loss of central power (or as a sign of a regime's collapse, as suggested by doomsayers in the early 1990s¹⁰⁵). Saich (2004) encapsulates: 'when the centre has really wanted to impose its will on a significant issue it can, and the provinces have been willing to go along with this' (p.159). Even Shirk (1993), an author often quoted by those stressing the rise of local power in Reform Era China, is explicit about the nature of China's political system and the likelihood of it being characterized by any shade of federalism: 'China is a unitary and not a federal state, and the centre hands down powers and resources to local governments in a 'nonstandardized manner' and may retract them at any time' (p.182). Fiscal authority has never left to be centrally controlled. If local governments gained more fiscal autonomy, it was because it was *granted* to them, by the centre. It has never abolished its ultimate authority – powers over fiscal revenues allocation can be retrieved by the centre, with varying degrees of tranquillity.

¹⁰⁴ Like Dazhai for agriculture and Daqing for industrial management during the Maoist Era

¹⁰⁵ See Kristof (1993), Wang (1994), and notably Goldstone (1995).

Indeed, that was what happened with the 1994 tax reforms. A new fiscal system was designed to solve the issues accumulated throughout the initial decade of economic reforms in China. The main objectives were to strengthen the central government’s ability to address macroeconomic stabilization, regional inequalities and, most of all, to tackle the ‘two ratios’ problem: to raise both the total revenue to GDP ratio and the central to subnational government ratio of tax revenue (Wang, 1997; Jin and Zou, 2003). Figure 4.1 below depicts the ‘two ratios’ problem, as experienced prior to the 1994 tax reform:

Figure 4.1: The two-ratios problem (%)



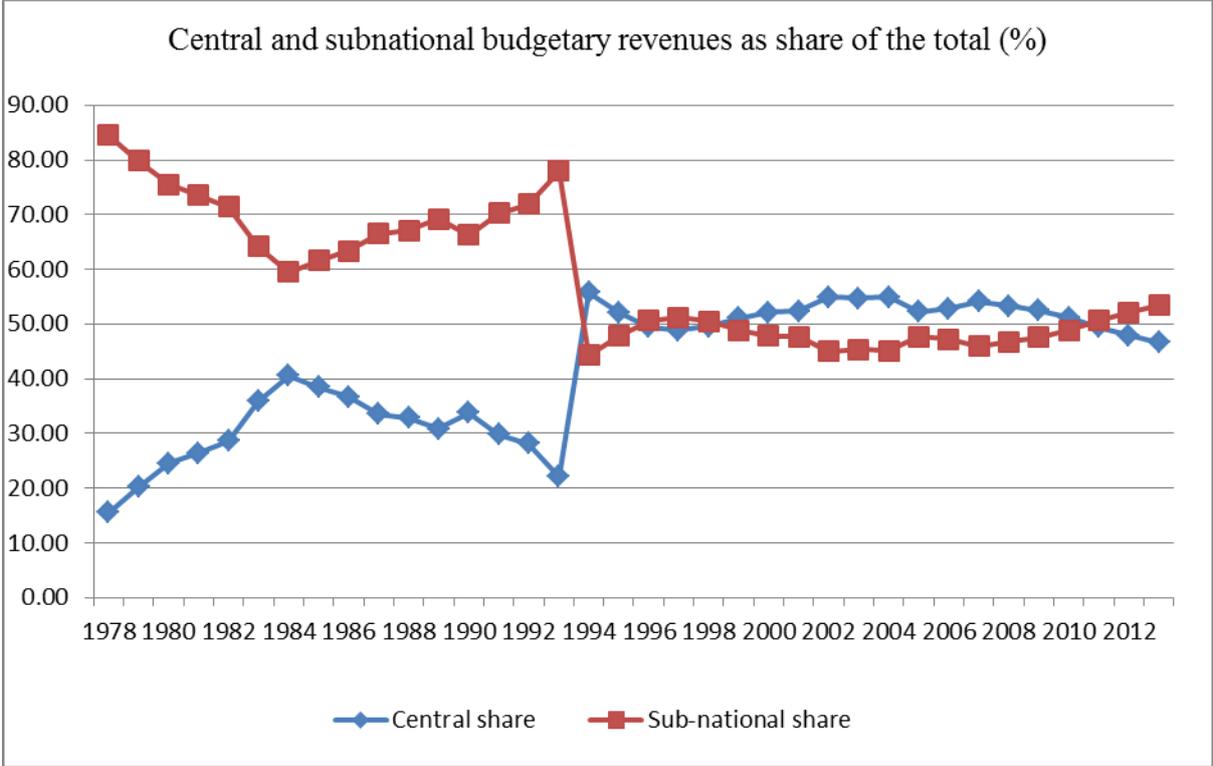
Source: NBS (2014)

The 1994 reform created a new framework of fiscal relations between the central and subnational governments, with the introduction of the tax assignment system, which specified the way revenues were to be divided between the central and subnational governments (Wang, 1997). Instead of a certain amounts of *locally collected* revenues being remitted to the central government, from 1994 onwards the government has divided taxes into three separate categories, depending on the level of government to which specific taxes are paid: national taxes, local taxes and joint taxes to be shared by the central and local governments¹⁰⁶. (Herschler, 1995; Wang, 1997). It is noteworthy to stress the establishment of the central

¹⁰⁶ See Shen et al (2012) for a comprehensive exposition of the taxes and their revenue-sharing assignment according to distinct levels of governance.

government's own revenue-collection bureaus. While the tax collection was a task undertaken solely by the local governments, Beijing hardly would be able to increase its share in the total tax revenue figures, so the separation of the tax collection bureaus was fundamental in order to effectively amass its fair share of revenues. Henceforth, central and subnational levels were supposed to collect solely their own exclusive taxes. Regarding the shared ones, it was supposed to be both levied and collected by the central government apparatus, and only later subnational governments would receive their designed share (Jin and Zou, 2003). As one can realize, the reforms show-cased the power of central authorities on fiscal matters. Figure 4.2 below depicts the distribution of budgetary revenues between central and subnational governments, from 1978 to 2013, displaying the 1994 reforms as a major watershed:

Figure 4.2: Budgetary revenues as share of the total: Central and Subnational (%), (1978-2013)



Source: NBS (2014)

Despite of this the discussion of China's fiscal system, it is fair to state that political and administrative authority aspects can be even more important than the fiscal facet of the problem. Measures of a supposedly weakening of the central government, focusing on the *fiscal dimension* of central-local relations, may not be enough to capture the dynamics of China's inter-governmental relationships (Yang, 1994). Hence, one may need to understand

the *modus operandi* of the system which the central government employs to guarantee the compliance and control over local cadres.

The *nomenklatura* and the systems responsible for cadres' evaluation, thus, are of fundamental importance if one endeavours to scrutinize contemporary China. Unfortunately, these are topics neglected by the proponents of FCS. The Chinese polity is still characterized by the *nomenklatura* system, which permits the centre to make appointments, remove and rotate cadres, in a top-down fashion (Yang, 1997). The *nomenklatura*, in addition to the cadre responsibility system (CRS), has arguably improved the centre ability's to monitor and manage local development, and its coercive power can still be felt by local leaders, and even governors of wealthy provinces. As Chung (2000) encapsulated, the *nomenklatura* control is 'the ultimate antinomy of provincial discretion and autonomy' (p.178).

Unlike the understanding presented by scholars who highlight a supposed loss of central power, Edin (2003) emphasizes the ability the CCP and the central government have to oversight and discipline local cadres. The author argues that the central government's ability to control and monitor local agents has actually *increased* during the 1990s. The cadre responsibility system (CRS), weakened during the 1980s, was strengthened on the following decade. Very specific economic performance criteria were established, with targets set by higher governmental levels. Fundamental to the implementation of the CRS was the maintenance of the *nomenklatura* system, attesting the continuous hierarchical nature of the party-state. Political and economic rewards - promotions and bonuses, respectively - were granted for successful local officials, bolstering the central government's control over agencies and localities. A system of local cadres' rotation was also employed, in order to foster the identification of cadres with higher governmental levels, rather than with a particular local community. Edin (2003) concedes that 'localism' was on rise in the 1980s, but it went through a decline during the 1990s, thanks to the measures employed by the CCP. Moreover, the control and monitoring appears to be greater in areas that thrive economically¹⁰⁷.

¹⁰⁷ This last finding of Edin (2003) somehow mirrors a key result of Dickson (2003): in his study of county-level party officials and entrepreneurs, it was found that in more prosperous and privatized counties entrepreneurs are more likely to agree that their business associations represent the government's viewpoint, and that they are less likely to believe they can influence policy-making, indicating they have actually lesser autonomy in relation to the party-state.

Tsui and Wang (2004), building on the idea of the CRS, highlight the mechanisms the central government has devised in order to maintain its control reaching up to the grassroots level. The CRS and the target responsibility system allow the centre to oversee the appointment, evaluation, promotion and dismissal of local cadres. The system features quantitative targets, relatively easily measured¹⁰⁸. Upper-levels then are able to impose rewards and penalties on local cadres. This system of targets, allied with the power to appoint and demote local cadres, allow upper levels of government to induce local cadres to behave in a way approximate with that of the central governments' preferences, thus diminishing the actual autonomy of localities¹⁰⁹. Equally importantly, this system shapes the allocation of fiscal resources at the local level. It is perceived as the concrete manifestation of central control.

The continued nature of the central power can be observed in many historical events in the last decades. Throughout the 1980s, the centre would commonly 'borrow' funds from subnational governments, but not necessarily would pay it back (Tsui and Wang, 2004). Moreover, rules over fiscal sharing changed frequently, generating, thus, uncertainty over the amount of fiscal revenues that should be remitted to the centre (Shirk, 1993). This uncertainty assuredly undermines the argument of credibility and durability of fiscal arrangements, a distinguished pillar for the proponents of the FCS approach. Furthermore, even leaders of wealthy provinces like Jiangsu and Guangdong felt the political clout of the centre: Just before the 1994 Tax Reform their leaders had to agree with the centre's new policy proposal after Jiang Zemin called them to a face-to-face talk. Later, Zhu Rongji reportedly said Guangdong should be praised for being a model 'for submission by the part to the whole' (Yang, 1997: p.103-104)¹¹⁰. In fact, according to Huang (1995) the average tenure of provincial leaders actually declined in the 1980s, in relation to the Maoist Era, as they were often rotated or demoted. The 1994 Tax Reform, as seen, was a major (re)centralizing effort, dictated mostly by the concerns of central bureaucrats and politicians. And even after the reform was concluded, others fiscal centralizing drives ensued, like the 2002 amendment on the revenues from the income tax¹¹¹. Regarding the extra-budgetary revenues (EBR), often

¹⁰⁸ Local cadres are evaluated in accordance with three broadly defined major tasks: economic construction; social development and party building.

¹⁰⁹ Even in the cases when it seems harder to get rid of local officials, it is so because they have strong patrons at the centre (Huang, 1995; Yang, 1997).

¹¹⁰ In fact, Ye Xuanping, former Governor of Guangdong, was removed from his position in the run up for the 1994 Tax Reform. The Party Secretary of Jiangsu had the same fate (Cai and Treisman, 2006).

¹¹¹ Starting in 2002, they became shared taxes, instead of local. Personal income taxes proceeds were assigned mostly to the central government (60%), and the remaining 40% for subnational governments. Regarding corporate income taxes on SOEs, the ownership principle gave way to a shared percentage between local and

seen as a safe source of local governments' revenues, actually throughout the 1980/1990s an attentive observer would have noticed a central government always willing to, and often being able to, meddle into local revenues affairs. There have been innumerable attempts to rein over extra-budgetary revenues, abolish some surcharges (the final abolition of the agricultural taxes¹¹² on January 1st, 2006, is a case in point), and the continuous attempt to better integrate them to a formal budgetary system (Tsui and Wang, 2004). In tandem with the fiscal system, the Chinese administrative-political system also suffered more centralizing reforms throughout the 1990s (Mertha, 2005): many key bureaucratic units, especially commercial and regulatory agencies, were partly 'centralized'. This process took place at the grassroots level, i.e., township and counties bureaucracies were recentralized up to the provincial level. Instead of being controlled by superiors located at its own local governments ('kuai-kuai', or horizontal lines of control), bureaucratic units became directly controlled by their administrative superior ('tiao-tiao', or vertical lines of control). The aims of these reforms were to combat local protectionism and to promote a standardization of norms across the country. As one could anticipate, these centralizing reforms were carried out thanks to the *nomenklatura* system. Mertha (2005) labels the process a 'soft centralization'. While counties and townships lost direct control over bureaucracies, provinces were the great beneficiaries, not the centre itself. The reforms attested the reach of the central government in putting forward its preferable policies, but at the same time the ambiguities of an administrative system encompassing five tiers of government.

Moreover, other requirements of a MPF system did not, and still do not, hold in China. The requirement of a unified common market, with no local protectionism clearly did not apply to China until 1994. Academic research (Kumar 1994; Young 2000) and anecdotal evidence signaled to the erection of internal trade barriers and local protectionism throughout the period¹¹³. The 1994 Tax Reforms, the 'soft centralization' reforms as exposed by Mertha (2005), the reforms on China's monetary system and later on its accession to the WTO certainly mitigated substantially these issues. Nevertheless, it seems fair to believe that a degree of local protectionism still exists when it comes to the banking system, as many local

central governments: as for 2008, Man (2011) reports that the central government accrued 64% of the revenues, and the remaining 36% was designated to local governments.

¹¹² See Lu (1997) for a discussion on the so-called 'peasant burden' in Post-Mao China

¹¹³ Holz (2009), in a response to Young (2000), concludes that there is no evidence for interprovincial *increasing* barriers to trade. Rather, the evidence shows that barriers to trade were decreasing over time. Holz (2009) concedes that interprovincial barriers to trade existed, though. His point is that they were actually being mitigated throughout the 1980s and early 1990s, in relation to the Maoist Era.

leaders still can wield certain influence on loans granted by local banks and local branches of the ‘big five’ banks. Moreover, factor mobility is certainly not without impediments, even nowadays. Notwithstanding substantial flexibilization in the past decades, the hukou system – often dubbed China’s ‘invisible wall’ - is still able to restrict labour mobility across the country to some extent.

Finally, the requirement that local governments face hard budget constraints seems far from being the reality in China, even nowadays. Access to bank loans, due to political connections instead of creditworthiness, apparently was rife in China during the 1990s. While the situation certainly improved after 1994, local governments are still able to tap from extra-budgetary revenues, still rely on (and compete for) subsidies from the central or upper governmental levels (especially poorer counties) (Tsui, 2005) and have devised many mechanisms to circumvent the formal prohibition of local borrowing. Local governments started to transfer newly acquired land¹¹⁴ to the so-called local government financial vehicles (LGFVs) or local financing platforms (LFPs), so it could be used as collateral for bank loans. This process enabled local governments to guarantee extra financial resources via the banking system, obtain revenues from land sales and property companies to develop urban projects and amass windfall profits (Tsui, 2011). Budget constraints, yet almost surely harder than during the Maoist Era, cannot be described as soft.

Lastly, the FCS literature usually suffers from neglecting the Maoist legacies inherited by the Dengist leadership. As discussed earlier, the Mao Era experienced some episodes of greater economic autonomy for local governments, especially at the county-level. In conjunction with the overarching programme of rural industrialization, the picture is rather different from the one assumed by the proponents of FCS. Oi (1992) rightfully emphasizes that the explosive growth experienced in rural China’s throughout the 1980s ‘has reinforced rather than broken down the cellular nature of rural society’ (p.124). Wong (1991) also agrees that the rural industrialization of the 1980s actually ‘exacerbated’ (p.712) this cellular pattern originated under Mao¹¹⁵. The key point - given the scope of this thesis – is not the debate of rural industrialization and ‘take-off’ per se, but actually the continuity in relation to the local state

¹¹⁴ The acquisition and expropriation of large areas of nearby rural land became a common practice by local governments in urban areas.

¹¹⁵ Contrariwise to Oi (1992) and especially (Oi, 1995), however, Wong (1991) bases her analysis on neoclassical economics paradigms (static allocative efficiency, relative prices flexibility etc) and expresses a rather negative assessment about the power of local officials over the local economy.

as a crucial scale of governance, with the necessary autonomy to mobilize economic resources and craft developmental strategies. As Huang (1995) reminds, to assume that the economic power of sub-national units is a new phenomenon is a false premise¹¹⁶. Indeed, one of Mao's paramount concerns was arguably the dream to create a socialist system distinguished from the Soviet-style one, i.e., less bureaucratically centralized and a system in which local leaders had more autonomy on policy making, with the population establishing closer liaison with local cadres (Gray, 2006).

4.3.6) *De facto* federalism

In tandem with the FCS approach, Zheng (2006) holds that albeit China does not have a *de jure* federalist system (understood as a *constitutional* division of power between different levels of government), its central-local relations could be framed as a *de facto* federalism. For Zheng (2006), there is an actual centre-province hierarchy; an intergovernmental decentralization which is hard to be fully reversed; and provinces have the primary responsibility over the economy and in a minor extent also over politics within their jurisdiction. Likewise, the rationale is anchored in an argued 'rise of provincial power' (p.122). This particular institutional arrangement that has emerged in China propelled the country towards a system of checks and balances in its central-local relations dynamics, even in spite of the lack of a *de jure* formalization.

Zheng (2006), however, has a more nuanced view on the system. He recognizes that as the priority of the leadership is to promote economic growth (rather than neatly dividing the power between centre and provinces, and among provinces), the leadership has to constantly mediate and adjust the relations among distinct levels of governance, depending on the actual circumstances. An institutionalization of the *de facto* federalism into a *de jure* federalism could possibly endow the Chinese polity with some undesirable degree of political rigidity:

'In contrast, *de facto* federalism has its advantage of flexibility...In other words, the centre needs, for the time being, *not a clear-cut division* between the centre and the provinces, *but ambiguity* between them'. (p.124, emphasis added).

¹¹⁶ As others commentators (Cai and Treisman, 2006) have noticed: 'Provincial governors are important players in the games of Beijing politics, as they have almost always been. But the notion they can be relied on to coordinate to limit central interventions is not supported by much evidence' (p.16).

While still working under a generic ‘federalist’ rationale, Zheng (2006)’s understanding is not encaged by the necessity of a well-defined, institutionalized and unambiguous division of power among different spheres of government. The role of credible commitments and durability of a certain institutional arrangement, a cornerstone of the MPF approach, is not so important here. Rather, there is an explicit recognition of positive attributes of institutional ambiguity and flexibility. That is precisely what renders the centre the ability to juggle with different interest in its vertical structure. Nevertheless, this institutional arrangement is seen as appropriate for this specific *phase* of Chinese development. Zheng (2006) clearly works within a ‘transitional approach’, meaning that some institutions, while not the optimal ones, are suitable for a ‘transitional economy’, and can be conducive for economic development at this stage in spite of its sub-optimality. It could be framed as a ‘second-best’ approach – the best institutional setting possible for the transitional phase China currently rests at. In the long-run, notwithstanding, an institutionalization of *de facto* federalism should lay the institutional foundations for China’s *de jure* federalism¹¹⁷.

4.3.7) Modelling central political control

Other mainstream scholars, virtually in a response to the FCS approach, tend to focus on the key role the central government has exercised throughout the whole reformist era. Cai and Treisman (2006) explain China’s successful economic trail based not on ‘decentralization’ (fiscal, administrative or political), but actually on factional competition at the centre. In the late 1970s and 1980s, reformists *at the central level*, making full use of their patron-client relations down to the grassroots level, kick-started the reformist drive and therefore obfuscated the rival conservative factions. Changes in the factional balance of power, rather than changes in ‘decentralization’ (however defined) explain the chronological pattern of reforms in China. Local leaders by no means can be overlooked, and do have a say in grand politics, but mostly because they can exploit their vertical connections, forging alliances with their patrons at the centre or higher levels of government. In other words, the political dispute for power, at the centre, is reflected in each of the layers of the multi-tier system of the Chinese polity. Local leaders are important insofar they are politically connected to their patrons at the centre, giving and receiving support to and from them.

¹¹⁷ The distinction of *de jure* and *de facto* federalism, as presented by Zheng (2006) has been recently criticized by Breslin (2012): ‘China as being *de facto* federalist sounds like a contradiction in terms; federalism is a legal (*de jure*) concept, not an informal one. But this apparent contradiction is actually an apt summary of the gap between the way China is meant to be administered and governed, and how it actually is in reality’(p.45).

4.3.7.1) Multi-divisional organizational form (M-Form)

Given the nature of China's political system and its chains of control, some scholars (Maskin et al, 2000; Qian and Xu, 1993; Qian et al, 2006) perceive the country through the lenses of organizational theories, framing China as a large corporation. They focus on China's distinctive organizational hierarchy inherited from the Maoist period, sustaining that the country resemble a multi-divisional (M-Form) organizational form. Contrariwise to the former Soviet Union, China's organizational structure prior to the reforms could be understood as a multi-layer and multi-regional form, with each geographic region at each layer regarded as an 'operating unit'. Each of these units is semi-autonomous and relatively self-sufficient. In other words, lower levels of government have little bargaining power with their superiors, but have substantial autonomy in developing their own regions. An economy organized in this multi-divisional form has the advantage of requiring lower coordination and communication efforts, as local governments are responsible for the coordination and execution of the majority of the economic tasks independently from the central level. Likewise, the M-form organization is superior in mobilizing initiatives from the grass-roots level; it is more flexible and allows to local experiments to flourish without jeopardizing the whole economy, and effects of external shocks tend to be contained within the localities. The more uncertain an experiment is, the higher the benefits of a M-Form organization. The U-Form, conversely, has the great advantage of better exploiting economies of scale and specialization, and is superior when an experimentation is more likely to yield positive outcomes (Qian and Xu, 1993; Qian et al, 2006).

An M-form economy is able to benefit from a 'gradualist' approach in economic reform, as always there is the option of 'early removal' (in case of reform failure). In a context of high uncertainty (a reform 'blueprint' is not totally reliable beforehand) the advantages of the 'gradualist approach' can be fully exploited (Qian et al, 1999). The combination of these features, under the context of marketization, was the gradual weakening of bureaucratic controls and strengthening of market activities, without the collapse of the previous organizational structure. China made possible the introduction of non-state elements in its economic structure without disrupting the whole system, posing a striking contrast to the 'big bang' reforms in the former Soviet Union.

Maskin et al (2000) highlight the different structures of incentives both the U-Form and M-Form produce. They defend that different organizational forms yield distinct information patterns for the organization, which in turn give rise to different structure of incentives. Their empirical study on China's SOEs has found that the M-Form organization produces smaller conditional variances on economic data, hence yielding better information on relative performance of local officials (akin the middle managers of corporations). Therefore, M-Form facilitates yardstick competition among local leaders - they can be more reliably assessed, and then promoted or punished by the central government. This finding echoes the idea that it makes more sense, economically, to set competition among regions than among ministries, because it is more straight-forward to compare regions or independent departments that produce roughly the same array of goods. Ministries or a functionally divided department, on the other hand, specialize in different products/tasks. The high complementarity among ministries makes it more difficult to set a yardstick competition.

4.3.7.2) Political incentives/Career concerns (PI/CC)

Some scholars chiefly credit the success of the Chinese reforms on China's unitary system and on the ability of the centre to control, via the *nomenklatura* system, lower level cadres. As seen above, the CRS has enabled central authorities to devise a system of rewards and punishments for local officials, based mainly on their performance on spurring local economic growth. It is argued, thus, that a system of political incentives, grounded on the career concerns of local officials, has been devised, and became conducive to the high-speed growth record of the country (Blanchard and Shleifer, 2000; Li and Zhou, 2005).

According to Blanchard and Shleifer (2000), fiscal decentralization was beneficial to China only because it was combined with political centralization and future prospects of economic growth. Political centralization enabled the CCP to reward or punish local officials according to the central's government policy objectives. As Blanchard and Shleifer (2000) sum up: 'The competitive benefits of 'market-preserving federalism' emphasized by China scholars depend very much on political centralization' (p.10). Building on the M-Form hypothesis, the Chinese economy, it is argued, can be perceived as a large corporation in which provincial leaders behave similarly to middle managers, and thus their career prospects is linked to their economic track record. The particular organizational form of China allows central leaders to supervise the performance of local officials, as showed by Maskin et al (2000).

At the core of the Political incentives/Career concerns (PI/CC) approach is the reliance on the New Institutional Economics (NIE) paradigm, whose main tenets have already been exposed. In particular, the framework of the ‘helping hand’ vs ‘grabbing hand’, as put forward in Shleifer and Frye (1997) seems to be the basis of much of the PI/CC approach applied to China. To put it briefly, the framework sustains that a ‘helping hand’ exists when corruption is centralized or organized by the government, whereas a ‘grabbing hand’ emerges when corruption is disorganized or the state is unable to centralize it, leading to the spread of mafias and protection rackets. The ‘invisible hand’, in tandem with the main NIE principles, is considered the best option and assumes rule of law and proper property rights protection, with the state behaving as a sort of ‘night-watchman’. This approach developed in Shleifer and Frye (1997) builds on the earlier work by Shleifer and Vishny (1993) on corruption. For the authors, the government is able to supply goods (licenses, permissions etc) in three different manners: the first case is when the state acts as an individual monopolist supplier. Here all the state agencies are organized and maximize the bribery charges in a collective way, reminding the collusion of oligopolistic competition. The second case is when each state agency acts independently, trying to maximize their bribery individually, in total disregard with the other state agencies. This case is similar to the competition by different monopolists. The first case results in a lower unitary bribe price and higher output (government licenses, permissions etc). The second case renders a higher unitary bribe price and smaller output (the government goods are complementary, so as the state agencies behave individually, a higher individual profit of one agency may lower the demand for the second state agency). The most efficient manner to provide governmental goods is the third one, by competitive and decentralized provision, akin as a perfectly competitive market.

Although they do not recognize or acknowledge, it seems to me that the analyses of both Shleifer and Frye (1997) and Shleifer and Vishny (1993) parallels the one developed by Olson (1993) - a key NIE author - regarding political systems: Anarchy or Warlordism (Roving bandits); Autocracies or authoritarian systems (Stationary bandit) and Democracies. The stationary bandit, holding monopoly over violence and over the state power, represents a great improvement in relation to the roving bandits stage. The stationary bandit aims to maximize its theft (taxes) inter-temporarily, so he must also provide public goods that will enhance the potential output of the economy and hence enlarge its taxable base, so he can accrue more and higher taxes revenues in the future. The autocrat, thus, often has a long-term horizon on the

economy. Finally, democratic coalitions (encompassing majorities) are able to maximize their tax revenues at a lower tax rate level, because they are also direct beneficiaries of market development, accruing income from private entrepreneurship (which is more likely to flourish with lower taxes). Table 4.1 below attempts to summarize my understanding of this part of the literature:

Table 4.1: Summary: Political systems, corruption and legal/regulatory environment (selected mainstream studies)

Olson (1993) Political Systems/Governance	Shleifer and Vinshy (1993) Corruption – based on market structures	Shleifer and Frye (1997) Legal and Regulatory environment
<u>Democracy</u> Independent Judiciary; Competition for power, no individual group is able to overrule others	<u>Perfect Competition</u> Competition between providers of government goods drives the bribe price to zero (Price = Marginal cost)	<u>Invisible Hand</u> Rule of Law; Property rights protection and enforcement
<u>Stationary Bandit (authoritarian governments)</u> Monopoly of violence, long-term planning, maximizes its tax revenues and provides public goods	<u>Single Monopolist</u> Collusion of state agencies to maximize the total value of bribes (Price > Marginal cost) (Mark-up)	<u>Helping Hand</u> Organized and relatively limited corruption by the state
<u>Roving Bandits (Warlordism)</u> Violence and theft are widespread, promoted by various groups ('anarchy', failed states)	<u>Independent Monopolist</u> Each maximizing bribes independently (highest total per unit bribe)	<u>Grabbing Hand</u> Disorganized corruption; Mafias, protection rackets...

Source: Own elaboration

This branch of NIE literature ended up classifying China as typical ‘helping hand’ country, featuring organized corruption driven by an authoritarian regime with a long-term view on development. Russia, on the other hand, has fallen prey to the ‘grabbing hand’ problem of disorganized corruption and mafias (‘krysha’, or ‘roofs’). In other words, the initial NIEs explanation for the Chinese miracle, focusing on governmental decentralization (FCS literature), was replaced by an explanation focusing on a centralized state whose behaviour renders social net-benefits, thanks to its ability of controlling its local officials and curbing ‘disorganized’ corruption. Following this conclusion, a growing body of literature emerged, trying to ‘apply’ the ‘helping-hand’ paradigm to China. Li and Zhou (2005), for instance, in an econometric study, found that the probability of provincial cadres’ promotion increases

with their economic performance. Accordingly, the likelihood of their demotion increases with poorer economic record.

In particular, the notion of yardstick competition, applied to the mechanisms of control the CCP wields on local officials, has also flourished in tandem (Che et al, 2014; Suzuki, 2012; Persson and Zhuravskaya, 2015). The main argument is that the central government is able to reward and punish local officials according to their economic performance. The role of selecting superior (local) outcomes is not anymore assumed to be performed by the market mechanism (as in the FCS literature). Instead, this selection is done by the central government, somehow acting as a surrogate of the market mechanism. Local officials performing badly in terms of GDP growth will be punished, and are much less likely to get a promotion within the CCP hierarchy than local officials presiding over high GDP growth local economies.

4.3.7.3) Critiques on the Political incentives/Career concerns (PI/CC) literature

In spite of the potential merits of this body of literature, some shortcomings and drawbacks can be identified. Regarding its assumptions, one might well recall the problems previously recognized in the broad NIE paradigm, such as its blind reliance on methodological individualism. Considerations involving the functioning of the state bureaucracy – arguably better understood by political scientists and other realms of academic inquiry – simply collapse to the individual utility-maximization principle. The state itself seems to be perceived merely as a collection of self-interested agents, in other words, it is dispossessed of an own coherent logic and not perceived as a category *per se*. The principles of ‘emergent properties’ and ‘downward causation’, as discussed in the previous chapter, are ignored.

Regardless of problematic assumptions, one can invoke a Friedman-type positivism, claiming that what matters for any theory is its capacity to predict results and outcomes. In the case of China, however, it seems that the PI/CC literature has a rather limited explanatory power. Take Li and Zhou (2005) for instance, a widely quoted empirical test. They found out that provincial leaders presiding over faster GDP growth provinces are statistically more likely to be promoted to the central level rather than provincial leaders presiding over slower GDP growth provinces. Nevertheless, due to its fiscal decentralization reforms in the Post-Mao period, many of the developmental tasks in China lie on the purview of sub-provincial leaders. More specifically, GDP-growth strategies are more likely to be influenced by township,

county and prefecture-level officials, not simply by the provincial ones. It is important to stress that according to the study by Maskin et al (2000) the informational advantages derived from the M-Form only have a bearing for *middle level* managers, i.e., Provinces. Maskin et al (2000) state it clearly that at the top and bottom level the incentives' structure are the same, on both U-Form and M-Form organizations. Accordingly, it has already been found that grass-roots officials often advance in the Party-State hierarchy by alternative methods other than promoting economic growth: For Hillman (2010), in a county-level study, it is the ability of crafting informal coalitions across multiple local-level state agencies that mostly explains the likelihood of cadres' appointments; different factions compete with each other for the control over resources, and placing a member in a key bureaucratic position is instrumental for a faction purposes. Equally important, factions normally are based not on ideological cleavages, but on native place associations (the township level, in this case). For Smith (2015), apart from informal cadre networks and personal connections, local officials must rely on kinship ties and on financial power (sometimes even the outright purchase of positions) to get a promotion. Smith (2015) reports that many cadres realize that 'ability and effort were not enough to get ahead' (p.608), and that there is a growing consensus that many of the county-level leading cadres 'attained their positions not through merit (as media coverage of competitive examinations for government posts would suggest), but through a combination of bribery and networking' (p.604)¹¹⁸.

Moreover, and fundamentally, Zhou (2010) argues that most of the officials at the county level or below expect to spend their entire careers within this level of governance. In tandem, Kostka and Yu (2015), in a recent empirical study with municipal¹¹⁹ party secretaries, find out that upward mobility, i.e., county-level cadres being promoted to the municipal level, is a rare event. Cadres mostly move between municipal and provincial levels, but it seems there is a structural barrier between the county and the municipal level. The majority of the municipal-level cadres were previously working at the provincial level, and in only a handful of exceptional cases cadres managed to climb-up the ladder *from* the county-level. Kostka and Yu (2015) indicate that county-level cadres have limited opportunities to nourish strong ties and networks with upper-levels officials, and that provincial leaders (the ones responsible for

¹¹⁸ As Smith (2015) concludes: 'local government works somewhat like a pyramid scheme. The sooner one enters the elite ranks, the greater the earnings of one's family over the course of a career, the greater one's prospects for further promotion, and the greater the opportunity to bring in other family members and friends. But *those lacking the funds and connections* to join the scheme faced a career laced with disenchantment and cynicism, should they choose to remain in government service' (p. 611, emphasis added)

¹¹⁹ It includes both county-level and prefecture-level cities.

appointments at the municipal level) usually select cadres with whom they have closer contact and stronger political connections. As one can realize, the importance of vertical patronage ties plays a pivotal role in the prospects of promotions¹²⁰. The ‘helping hand’ story applied to China would predict that grass-roots officials, when working diligently in promoting local GDP growth, would eventually get to the top. That is not what it seems to happen. These caveats are connected with the common neglect of NIE on alternative motives other than the blind pursuit for individual maximization in explaining the behaviour of cadres (and individuals in general).

Furthermore, the rationale behind this NIE literature applied to China is the belief that certain institutional arrangements (i.e., a particular institutional relationship between the central government and local governments, and between local governments and the market) will spur economic growth. Incidentally, this literature does not work explicitly with any growth theory. In other words, economic growth is supposed to be explained purely on institutional basis, neglecting any proper discussion on the mechanisms behind economic growth. This omission notwithstanding, I would argue that they actually work - implicitly and/or covertly – with the Solow-Swan paradigm: it is assumed that economic growth depends ultimately on the efficient allocation of the factors of production (capital and labour), a task that can only be accomplished by the markets (under perfect competition). There is no discussion on concepts such as knowledge creation and diffusion, learning by doing, or how technical progress and productivity gains are promoted and sustained¹²¹.

Specifically, and given the aim of this thesis, it is important to mention the issue of local variations in economic growth. This leads to a related critique: the poor capacity of the FCS and PI/CC literatures to explain local variation in economic performance in China. The system of political incentives devised by the CCP and the central government applies to every

¹²⁰ Age and education restrictions, and the limited number of positions at the municipal level also play a role in explaining the difficulties county-level cadres face in assuring a promotion.

¹²¹ I would go as far as to argue that Olson (1993) is implying the law of diminishing returns on his discussion on democracy. It comes as a surprise to many that for Olson, in spite of all the economic advantages democracy has, in the long-run the growth rate of stable democratic regimes tends to decrease. That happens, according to the scholar, because different groups of interest start lobbying the state for redistributive transfers, a phenomenon that can only take place (or at least take place more vigorously) in stable democracies. The overall rationale, it seems to me, is that the initial gains of a democratic regime (political stability and the promotion of peaceful successions and lower tax rates) tend to be dissipated as the time passes by, so the marginal gains of a democratic regime slowly erode. In other words, it seems to me that Olson (1993) is applying the law of diminishing returns to institutions. Just as a higher stock of capital decreases its profitability in the long-run, driving economic growth down (Solow model), the same process would occur with democracy.

single locality, and the fiscal arrangements between local governments and the central government holds in a nation-wide fashion as well. The literature seems to assume that successful reforms (as in China) means that every single locality will be able to promote sustainable economic growth. That resembles a ‘fallacy of composition’ argument in they assume every single locality will be able to devise winning strategies, regardless of aggregate limitations. Once again, a clear understanding on growth theories is missing.

Different growth theories and insights on structural change have been reviewed in chapter two, and by now the importance of incorporating notions such as increasing returns to scale, agglomeration economies, cumulative causation and path-dependence should be evident – concepts which do not figure at the PI/CC literature. More recently, some scholars (Liu et al 2012; Tsui and Wang, 2008) started to pay proper attention to the issue of local variation, and focus on the previous level of industrialization/economic development of a given region in China. Regions featuring relatively high levels of industries prior to the economic reforms and the establishment of the cadre responsibility system (CRS) were able to promote further industrialization, accrue higher tax revenues and finally spur economic growth. Poor regions, mainly agricultural ones, were not able to promote industrialization, or at least not as successfully as other regions. With a continued reliance on agriculture, their tax base could not be enlarged, and thus the tax revenues of these regions could not grow much (inducing, thus, the creation of arbitrary charges). Compounding this duality there is the CRS and the targets from above: the targets imposed by the centre are uniform and standardized, i.e., they apply to every single local government regardless of their (fiscal) capacity to meet the targets. While the general gist of this last strand of literature is correct, for it highlights the key role of previous industrialization in explaining variations in local state behaviour and growth performance, it lacks solid foundations on growth theoretical notions such as agglomeration economies, cumulative causation and path-dependence.

4.3.8) ‘Experimentation under hierarchy’ and the local state

In a nutshell, the understanding of the FCS proponents seems to be plagued with two inter-related ideas: the first, as exposed, of a rise of local governments’ power and autonomy. Secondly, the mirror of this rise was an erosion of the central government power. The Political Incentives and Career concerns (PI/CC) literature, while correctly acknowledging the continuous role and power of the central government, has a too narrow focus on the

mechanisms behind a tournament-like yardstick competition that supposedly takes place among sub-national leaders, controlled by the centre.

Building on a critical and historical perspective, Heilmann (2008a; 2008b) defends that China's intergovernmental relations and policy process should not be framed on dichotomies such as central vs. local, or based on constitutional ideas such as federalism. The author puts forwards the concept of 'Experimentation under hierarchy': the combination of decentralized experimentation with *ad hoc* central interference. Localities are granted leeway to find innovations in terms of policy instruments; policy objectives, however, remain as a prerogative of the central leadership. This conceptualization, Heilmann (2008a) argues:

'gives room to local officials to develop models on their own, while ultimate control over confirming, revising, terminating and spreading models experiments rests with top-level decision-makers' (p.2).

The result is the selective integration of local experiences into national policy-making. That is an explicit attempt to harmonize, into a well-defined analytical framework, the enduring hierarchical nature of the Chinese party-state and the unchallenged power of the central government with the large variations in terms of policies and socioeconomic outcomes across China's plethora of local governments.

When analysing the roots of China's 'Experimentation under hierarchy' model, Heilmann (2008a) rightfully comes back to the country's distinctive historical experience with governance matters, dating from the Yan'an period, as seen in section 4.2. Heilmann (2008a) recalls that the CCP was governing scattered base areas, and lacked a truly national bureaucratic apparatus, undermining its capacity of implementing centralized policies. This historically-determined institutional setting entailed a decentralized, experiment-based approach to governance. The Post-1978 leadership managed to reanimate the ideas versing around local initiative and policy experimentation, which had been diminished to 'model emulation campaigns'¹²² (p.25) for most of the Maoist period. The post-Mao environment of market-reforms and local entrepreneurship fused virtuously with the Maoist ideas of local initiative and decentralization.

¹²² Like Dazhai for agriculture and Daqing for industrial management

A marked contrast with models of federalism applied to China can therefore be made: in China, central authorities still have to *grant* local experiments a green light somehow, usually making usage of patron-client ties. The hierarchical nature of the Chinese party-state cannot be ‘theorized away’, for the central government still holds the prerogative of appointments. Federal models applied to China imply that administrative and fiscal decentralization and inter-jurisdictional competition have replaced the country’s unique hierarchical governance. In this sense, they miss the crucial role played by the central government in the political dynamic of experimentation¹²³. Federalism is a constitutional concept, originated in Western liberal democracies, working with the idea of a vertically stable checks and balances between different levels of government. To apply these concepts in China means to neglect the nature of the Chinese political system. As Heilmann (2008b) concludes, ‘the entire policy process must be conceptualized as an oscillating multilevel interaction rather than as a dichotomized process of centralization vs. decentralization’ (p.12). Local experimentation is always controlled by the centre¹²⁴, and the diffusion process is coordinated by the state. As the author (Heilmann, 2008b) encapsulates: ‘bottom-up experimentation goes nowhere without higher-level patrons’ (p.9). This is a very different story from the FCS approach, in which successful policy innovations are diffused and spread *via market mechanisms*, i.e., competition among jurisdictions. Successful policies, the argument goes, are learned and imitated by other jurisdictions, given the market pressure. Jurisdictions insisting in market-unfriendly policies would be doomed to lag behind in China’s unstoppable move towards the market (Montinola et al, 1995).

Moreover, one must bring politics back in to this debate, instead of treating the central government as merely the arbiter of a tournament-like competition played by local leaders. The successfulness of policy experimentation and diffusion are due to the pivotal role played by the central government, which, in a highly politicized fashion (contingent to the changes of policy objectives), encourages and protect some local experiments (but not necessarily all), to later spread it throughout the country. This view stands in sharp contrast with the PI/CC

¹²³ This was a point already raised by Cai and Treisman (2006). For them, it was actually political centralization that boosted the spread of growth-enhancing institutional reforms. Grass-roots initiatives like the household responsibility system only became effective and spread nationwide because China was a politically centralized country, in which the central government played a fundamental role in monitoring, regulating, and steering the pace of reforms.

¹²⁴ Shirk (1994) has an even more sceptical stance on China’s so alluded ‘experimentalism’. In her opinion the so-called experiments were never allowed to fail, as they would usually receive special treatment and favourable conditions. Experiments in China, rather than being designed to test the results of a policy change, actually fill the objective of building political and bureaucratic support for central officials.

literature, for whom it is implied that successful policies at the local level will be manifested in a better indicators (namely, GDP growth) and this will render the local official in case a promotion within the party's hierarchy (ultimately leading to the diffusion of the policy). For Heilmann (2008a; 2008b) this process is always politicized, from the grass-roots level up to the centre. There is no automatic, tournament-like yardstick competition being played, but a process of selection permeated by distinct patron-clients networks. This is not to say that local growth performance is unimportant, but it must be perceived within a broader political economy context, one which cannot be reduced to simple individual utility-maximizing calculations.

Indeed, Heilmann's 'Experimentation under hierarchy' incorporates earlier insights on the central government behaviour, ranging from *ad hoc* management and interference on localities, 'selectivism' and what Shirk (1993; 1994) dubs 'particularistic contracting'. Chinese reforms were forged piece by piece, negotiated for individual (set of) units. There were no uniform or standardized rules applied horizontally. This 'selectivism' was only possible because central officials could exploit pre-existent and create new patron-client ties. Granting economic privilege to particular localities (usually on the form of administrative decentralization) entailed the spread of the 'particularistic contracting' pattern across the whole country, shaping and reshaping political connections in the process. Simultaneously, the richness of local variations on policy implementation and local autonomy (often manifested in the existence of 'regional models')¹²⁵ can easily be explained and understood within Heilmann's framework, encompassing China's intergovernmental relations, the party structure, local experimentation and national unity.

Recall now the discussion, on the previous chapter, about institutions and institutional change. The ideas developed by Heilmann (2008a; 2008b) fits very well the broader notion of institutions as 'socio-political compromises'. To recall Amable's (2003) definition, institutions essentially 'represent a compromise resulting from the social conflict originating in the heterogeneity of interests among agents' (p.10). Power asymmetries and conflict of interests are ubiquitous in the process of institutional configuration, so the particular form a set of institutions will acquire will be contingent on the tortuous conflicts for economic and

¹²⁵ This conceptualization of the Chinese reforms dovetails the approach by Lim (2014), presented in the introduction of this thesis, for whom Chinese reforms must be understood as always being geographically differentiated, producing a series of economic-spatial tensions.

political power. ‘The imperatives of economic reproduction are what decide which configurations are going to be viable...’ Boyer (2005a: p.512) reminds us. Hence, it is the stability of certain socio-political compromises, embroiled by the heterogeneity of the demands of the relevant social groups, which will define and set different institutions. Institutional change, therefore, can only come about when the socio-political compromises sustaining a given set of institutions is shaken, disrupted, or challenged, to varying degrees of intensity. It will be the actions undertaken by a ‘dominant bloc’ to amend, stabilize or renew a socio-political pact which will drive institutional change (Amable, 2016).

These theoretical insights facilitate the understanding of Heilmann’s critique on the limits of the Chinese institutional architecture patterned by the CCP during the Post-Mao era. For Heilmann (2008b), the successful Chinese reforms and institutional innovations were underpinned by the collusion of local political and economic elites. Essentially, the reforms allowed new channels of accumulation to emerge, benefiting first and foremost local elites. This collusion of local economic and political elites suggested by Heilmann finds a parallel in the previously mentioned county-level study by Dickson (2003). For the latter, *local* entrepreneurs and party officials, especially in the most prosperous areas, believe they have shared interests. As Dickson (2003) states, ‘the perceived harmony of interests between the state and business associations *rises* with economic development’ (p.78, original emphasis).

This is not to say that the overall population and even the poorest ones did not become better-off. The point here is that the reformist programme of institutional innovations were driven by the interests of a national leadership and its local counterparts (the equivalent of Amable’s ‘dominant bloc’); as the reforms engendered higher growth and income generation, other segments of the population – who did not have a strong say when the reforms were being implemented – were towed along and witnessed a rise in their real incomes¹²⁶. A basic consequence of this pattern of institutional innovation is the inadequate provision of social public goods, like basic health and environmental protection. As Heilmann (2008b) encapsulates: ‘experimental programs that do not immediately benefit the interest of local elites have a very slim chance of success’ (p.20) and do not ‘reach the national policy agenda’ (p.21). This is a direct consequence of the fact that these reforms will not have the local elites as the *main and immediate* beneficiaries, and the segments of society which will be mostly

¹²⁶ The continual rise of China’s Gini coefficient until 2012 should exemplify this point.

interested in that do not have the means to voice their demands and shape institutional setting directly¹²⁷.

As seen, the idea of ‘Experimentation under hierarchy’ assumes a coalition among local level elites in order to deliver successful, growth-enhancing, reforms and institutional changes. This approach works as suitable lenses for analysing the debate on the local state and its role on economic growth in post-Mao China. It has been often argued that local governments in China have a strong control over the local economy and bureaucrats have intimate connections with local enterprises. This particular symbiosis between bureaucrats and entrepreneurs, at the local level, has been put forward as an explanation for China’s rapid growth performance.

Oi (1992), for instance, coins the term ‘local state corporatism’, referring to a new institutional development in which local governments assumed many characteristics of a business corporation. The concept entails the idea of a symbiotic relationship between state and market at the local level, with local officials playing a pivotal role in this process. In her subsequent work (Oi, 1995), she advances and employs the notion of ‘local developmental state’, explicitly inspired by the theory of the developmental state¹²⁸, originally devised to understand the growth miracle of Japan (and also South Korea and Taiwan). For Oi (1995) local party bosses were at the helm of the rural economic growth. They responded promptly to the reform package, coordinating enterprises within their territory as if they were managing a diversified business corporation. They were the ones able to weld a strong local officialdom, public enterprise, and a thriving market economy together. The fiscal reforms package powered them with incentives to behave in this manner, also because their careers and salaries became directly tied to the performance and growth of their rural enterprises¹²⁹. Moreover, throughout the 1980s aspects such as the approval of capital construction projects, joint-ventures (JVs), planning and material supply were also decentralized, conferring local officials greater power in assuming the day-to-day control of the local economy (Shirk, 1993).

¹²⁷ As Blecher and Shue (2001) exemplify, in a reputed study about the developmental role of the local state in China (which will be discussed further on): ‘the resources mobilized...were effectively diverted from other possible infra-structure projects – projects that might have aided farmers or consumers rather than entrepreneurs’ (p.391).

¹²⁸ See Johnson (1982), Wade (1992) and Woo-Cumings (1999) for an exposition of the theory.

¹²⁹ In Jean Oi’s framework, ‘local governments’ refers to counties, townships and villages.

According to Blecher and Shue (2001), in a case study on Xinji city¹³⁰, local officials also behaved in fashion similar to the local developmental state paradigm. They ‘picked the winners’, planned and developed industrial and commercial parks, mobilized financial resources (thanks to their control on local banks), were in charge of the bureaucratic and administrative co-ordination, and exercised control over the booming private sector through the organization of state-led business groups, regulations and licences. Local cadres, Blecher and Shue (2001) state, ‘worked to create better conditions for the development of a new bourgeoisie, with which they co-operate closely...’ (p.389).

Liu (2008) applies the idea of local developmental state to a higher hierarchical level, the province. For the scholar, Shandong province acted in a developmental fashion, for its promotion of industrial policies by targeting large enterprises to become ‘provincial champions’ (p.481), offering them priority supply of water and energy, discounted rates for land usage, preferential tax rates and low-interest loans. Also, provincial officials supervise the selected enterprises and set plans and targets for them, facilitate mergers, and support the upgrading of technological capabilities of local groups.

In her study of Tianjin municipality, Duckett (2000) realizes that local officials started to set up their own businesses, ranging from small restaurants to large department stores. This was a response to the central pressure to downsize and restructure local bureaucracies, amid a context of marketization: by establishing new businesses, local officials created new sources of income, profits would be spent primarily within the original department and to pay bonuses to officials. The author dubs this phenomenon the ‘local entrepreneurial state’, as individual departments were investing directly, in risk-taking activities, to generate income, in a less coordinated fashion than the local developmental states¹³¹.

All these examples reviewed above indicate the symbiotic relationship between political and economic elites in local China, and the pivotal role the state played in the country’s development track record. To be sure, many scholars have already suggested that the Chinese

¹³⁰ A county-level city, under the administration of Shijiazhuang, Hebei’s capital.

¹³¹ Perhaps the best typology of local states in China is given by Baum and Shevchenko (1999). Local entrepreneurial states are characterized by bureaucrats or state bureaus going into business independently or entering into partnerships for profits; in the local developmental state bureaucrats intervene indirectly in the economy, helping to plan, finance and co-ordinate local projects, investing in infra-structure, creating an environment conducive to growth but do not engage in business for profit. Note still that for the authors Oi’s (1992) local corporatist state is simply a variant of her local developmental state (Oi, 1995).

state and its SOEs in general have played an active and fundamental role in the Chinese miracle story (see, *inter alia*, Felipe et al, 2013; Lazonick, 2004; Lo and Li, 2011; Lo and Wu, 2014; Poon, 2009). What is highlighted here is the intertwined nature of state and markets at the local level, with local bureaucrats performing the pivotal role of setting innovative institutional arrangements responsible for generating new sources of income for local elites. This resonates with Heilmann's ideas exposed previously, and with the view on institutions as socio-political compromises from chapter three.

This certainly gives lie to most of the NIE assumptions over economic growth. For the NIE-inspired literature the state mostly plays negative roles, often described as 'theft'. Individual bureaucrats, in particular, are assumed to behave in a utility-maximizing fashion, normally by accepting bribes in exchange of favours (like subsidies, licenses, preferential loans etc). State and state bureaucrats enable rent-seeking behaviour to occur, generating inefficiencies and thus halting economic growth.

This evaluation might arise from the fact that most NIE approaches understand economic rents¹³² as always a negative phenomenon. Following Khan (1996; 2000), one can argue that NIE assumes the only possible rents are monopoly rents, which functions as restricting market entry, thus inhibiting private business to flourish. Nonetheless, it is possible to argue that some types of rents, namely 'Schumpeterian' and 'learning' rents also exist, and play a rather positive role in economic development. These are the rents related to innovation and technological catching-up. Because the process of late industrialization and technical change necessarily involves the acquisition of 'knowledge' in general, which by definition involves externalities and increasing returns to scale, rents are a *sine qua non* condition for innovation and catching-up to proceed.

Indeed, for Heilmann (2008b: 22) the behaviour of local elites cannot be conflated with simple 'predatory' rent-seeking¹³³. While the process of local growth in China has been

¹³² Rents are understood as excess incomes or super-profits which would not exist under perfect competition

¹³³ Clearly inspired by the NIE literature, Pei (2006) debated the issue of the rise of local power through the corruption perspective: the author labels the phenomenon 'decentralized predatory state', in which 'local strongmen choose to appropriate to themselves the power of higher public authorities and monopolized the extraction of revenues' (p.134). Under the context of political authoritarianism, local bosses amass the state's fiscal power and are free to abuse their authority within their local jurisdiction.

permeated by the creation of rents¹³⁴ this process encouraged the rise of new profit-seeking entrepreneurship which promoted highly productive investments. Official corruption and skyrocketing levels of economic growth co-existed habitually. China's 'Experimentation under hierarchy' allowed a 'local elites-sponsored experimentation' process to work as a catalyst for local investments, putting local states at the fore of the debate on economic growth.

4.4) Summary and conclusions

In chapter three, after reviewing the debate on institutions, it was argued that the concept of institutional complementarities, normally adopted at the national level, could be employed at the local level in order to frame the experiences of Nanjing and Suzhou. It was also hinted that it was necessary to tackle the multiscalarity of capitalist development, welding the local with both the national and international levels of analysis into a coherent framework. Hence, given the purpose and scope of this thesis – to carry out a comparison between Nanjing and Suzhou, two prefecture-level cities in China – the more general theoretical discussions of chapters two and three had to open space to a more specific debate on China. Chapter four has mainly delved into the role of the local state in contemporary China and its relations with the central government, the so-called central-local relations.

In this chapter, therefore, a discussion on the role and history of the local state in China was introduced, as well as its connections (political and economic) with the central level. Competing theories aiming at making sense of China's central-local relations were presented, as well as their critiques and limitations. Initially, mainstream theories were introduced. Market-preserving federalism (MPF), heavily influenced by the fiscal federalism and NIE literatures, was applied to China in the form of the 'Federalism, Chinese-Style' (FCS) approach. FCS suffered from important caveats and shortcomings, of which one can highlight the neglect of both the continuous power of the Chinese central government and the hierarchical nature of the Chinese party-state, and an exaggerated view on a supposed rise of local governments' power and autonomy. Also, it assumes that successful policies (in the FCS case this is tantamount to market-friendly policies) crafted by local leaders will be spread to other localities thanks to inter-jurisdictional competition, and market-encroaching policies

¹³⁴ Duckett (2000), for instance, highlights the exploitation of legal loopholes by bureaucrats, the privileged access to goods and knowledge they enjoyed, and the informal links their enterprises maintained with the original state bureau.

will be punished by mounting market pressures. The mainstream response to these shortcomings came in the form of the ‘political incentives and career concerns’ (PI/CC) literature. Despite of addressing, in its own manner, the points raised above, this strand of the mainstream literature presents its own problems. Essentially, it treats the central government as a sort of arbiter of a tournament-like competition played by local leaders. It is implied that successful policies at the local level will automatically be manifested in better indicators (namely, GDP growth) and this will allow a promotion of the local cadre within the party-state hierarchy and hence the diffusion of the policy in case.

After criticising the mainstream approach, in its distinct incarnations, the chapter concludes that the idea of ‘experimentation under hierarchy’, proposed by Heilmann (2008a; 2008b) is the most suitable one to tackle the role of the local state in China’s contemporary economic development. For Heilmann (2008a; 2008b), localities are granted leeway to find innovations in terms of policy instruments while policy objectives remain a prerogative of the central leadership. The central government, in a highly politicized fashion, encourages, protects and spreads some local experiments, while terminates others.

Heilmann’s (2008a; 2008b) understanding of the role of local experiments with institutional innovations is crucial for this study. The scholar argues that a decisive point in explaining the success of the Chinese economic reforms in the Post-Mao Era is the collusion of interests between political and economic elites at the *local* level in China. A symbiotic partnership was coalesced between *local bureaucrats* and *local entrepreneurs*, enabling a new programme of institutional innovations to unleash new channels of wealth accumulation. This approach suits well the idea that the local state in contemporary China is characterized by strong control over the local economy and that bureaucrats have intimate connections with local enterprises. Indeed, the case studies conducted by Oi (1995), Duckett (2000), Blecher and Shue (2001) all point out this direction – a powerful symbiosis between bureaucrats and entrepreneurs, at the local level, generating profit-seeking entrepreneurship and productive investments.

These ideas can also be apprehended by the conceptualization of institutions developed in the previous chapter. Recall that for Amable (2003) institutions can be perceived as ‘compromises resulting from the social conflict originating in the heterogeneity of interests among agents’ (p.10) and that for Boyer (2005a) ‘the imperatives of economic reproduction

are what decide which configurations are going to be viable (p.512). Hence, it is the stability of certain socio-political compromises which will define and set different institutions.

In light of this conceptualization of institutions, one can argue that if the decisive aspect of China's successful reformist programme was precisely the symbiotic coalition between local entrepreneurs and local bureaucrats, the scholar interested in scrutinizing regional economic growth in China should pay close attention to the 'socio-political compromises' present in different *local states*. To the extent that a locality manages to forge stable and long-lasting compromises among its local elites, this locality in case is likely to deliver successful growth-enhancing reforms and institutional changes. These new local institutional arrangements will enable the Kaldorian cumulative causation growth scheme to take place. Moreover, by tackling local states as units of analysis in their own right, it is also possible to apply the concept of *institutional complementarities at this level* of analysis. In other words, the sort of system-level coherence normally found at the national level by the 'comparative institutional analysis' literature (chapter three) can be scaled down to the local level. It is there that the scholar can analyse which institutional forms can potentially be complementary to each other, and what is the nature of the socio-political compromises crafted among the local elites.

With this take-away message in mind, the next chapter will be dedicated to ally the China-specific insights on the nature of the local state (as well as its linkages with the national level) with the theoretical knowledge gained in chapters two and three. In this way, an original analytical framework to examine regional economic growth in contemporary China will be developed, to later be employed in a comparative case study in chapter six. In particular, in chapter five there will be a justification for the chosen unit of analysis of this thesis (prefecture-level cities) and a justification for the institutional realms to be considered when employing the concept of institutional complementarities.

Chapter 5: Toward a framework to analyse local economic growth in China

5.1) Introduction

The discussion in chapters two and three was mainly theoretical – how economic theory understands economic growth, framing from the perspectives of growth and institutional theories, respectively. When possible, the focus of these chapters was set at the regional/local level. Chapter four starts with a historical review on the importance of the local state in contemporary China, and ends by offering alternative interpretations on the role of the local state (and its connection with the central government) in China’s post-1978 growth miracle. It was suggested that the symbiosis of political and economic elites, at the local level, engenders a process of robust productive investments permeated by the creation of economic rents. The chief beneficiaries of this process are the local elites – the party-state officials, the higher ranks of state bureaucracy and large SOEs, private entrepreneurs and businessmen. As this process instigates productive investments, income generation and productivity gains follow suit, enhancing job creation and the opening of new channels of wealth accumulation.

This chapter aims at welding the main contributions of the three previous chapters, in order to forge a new analytical framework to be utilized by scholars concerned with regional economic in China. The framework developed in this chapter will be redeployed in the following chapter, when the comparison between Nanjing and Suzhou will be undertaken. Chapter five starts with this brief introduction; the second section regains the main take-away messages from chapters two and three; the third section resumes the specific debate on regional economic growth, in light of the theoretical discussion centred on growth and institutions; the fourth section delves on debates revolving localities in China, justifying why prefecture-level cities are the most suitable geographical unit of analysis for this thesis; the fifth section discusses the actual institutional complementarities, and their interconnections, to be found in local level China. Section six builds on these previous discussions and presents the original analytical framework to be employed in this thesis, and the seventh section concludes the chapter.

5.2) Economic theory: growth and institutions

This is an opportune moment, then, to bring the discussion on growth theories and structural change back in. As seen in chapter two, economic growth may be understood through a Kaldorian perspective and hence growth episodes may be characterized by a process of ‘circular and cumulative causation’: growth is demand-led, and the Kaldor-Verdoorn Law guarantees that a higher output entails higher productivity growth. The law essentially captures the dynamic effects of increasing returns discussed before, and may be apprehended as the joint effects of ‘learning by doing’ and ‘induced’ technical change. These two aspects are deeply intertwined, entailing increases on the rate of technical progress. Robust productivity growth, in turn, enables regions to gain price and non-price competitiveness, expanding its markets and hence enabling further production to take place, generating more income and thus demand, closing the circular process. Growth, thus, is path-dependent, and technical change comes about endogenously. This rationale fits well the description that in China local elites managed to kick-start and sustain a robust process of economic growth, characterized by strong productive investments, technical progress, income generation and expansion and diversification of markets.

One can still recall that this Kaldorian schema takes place within a given institutional architecture. The dynamics of demand formation (the DR) and the dynamics of productivity gains (the PR) are embedded in a wider context, characterized by certain, historically-determined, institutions. The particular interaction of the DR and the PR, enveloped by a historically-specific institutional architecture, will yield a specific accumulation regime, defined by Boyer (1988) as ‘the whole set of regularities which allow a general and more or less consistent evolution for capital formation’ (p.71). Each regime, in turn, must realize the dynamic increasing returns alluded by the Kaldorian literature, and it is the institutional characteristics of a given socio-economic formation which will define the parameters of the Kaldorian cumulative causation equations. The ability to accrue such motion will be dependent on the specific institutional architecture which envelop the PR and the DR, determining on the one hand the pace of productivity gains and how they are generated; and on the other shaping the specific composition of aggregate demand.

In the long-run, institutional forms are the main conduits for economic growth, as they can determine the parameters of any discrete growth episode. This point highlights the need to properly tackle the issue of institutions if one endeavours to discuss economic growth. Recall that for Boyer (1988a) an institutional form may be perceived as the representation of certain social regularities one observes, the particular form certain main socio-political compromises assume. As such, they denote ‘a codification of a main social relationship’ (p.71), which is deemed relatively stable over time and historically determined.

Working with the concept of institutional complementarities, the striking theoretical aspect becomes not that much the definition and nuances of each institutional form in isolation, but actually their interconnections, i.e., the complementarities among all the identified institutional forms which yield system-level coherence, lending the required institutional support to an accumulation regime to materialize. Hence, any given accumulation regime will require - to be considered a regime in its own right - a combination of institutional forms in which their interrelationships either reinforce each other’s attributes or make up for their deficiencies. The final, observed, systemic-level coherency must be the outcome of the idiosyncrasies of the interlacing of specific institutions from different realms. This systemic outcome will enable this ‘fabric of institutions’ to govern the key parameters of the Kaldorian cumulative causation schema.

This approach has its similarities with the notion of *inter-relatedness* presented in chapter two. Recall that in order for the Kaldor-Verdoorn Law – a technical relation – to materialize and spur technical progress, all of the inter-related components of any given productive process (fixed capital, human capital, technology, organizational structures and institutional arrangements) must be combined in order to sustain the cumulative causation schema. Without explicitly adopting the concept of institutional complementarities, Setterfield is implying the need of distinct realms of the productive process to be organized in a manner which renders a systemic coherence to the mechanisms presiding over technical progress and economic growth. A crucial difference is that Setterfield takes institutions, in general, as a part of the productive process influencing the cumulative causation equations, while for the RT it is the combination of certain institutional forms which envelop the episodes of economic growth. Critically, all of those components are established in the past and *en course* of economic development, i.e., they are endogenous and path-dependent, and become crystalized in the existing productive assets of any given period. They are, therefore, specific

to a given productive specialization, historically-determined, and inter-related. It is this final characteristic, in particular, which makes changes in any component alone difficult to be implemented. One cannot simply upgrade one component of a productive process leaving all the others unaltered – they must all be upgraded. When inter-relatedness problems become overwhelming one may well say that a region becomes *locked-in* into a particular, specific, productive process. The failure to upgrade the whole productive process may condemn a region to become forcefully specialized in sectors featuring low technological dynamism and long-run meagre growth prospects (which is the mirror of a reduced Kaldor-Verdoorn coefficient). This is an alluring parallel with the idea of institutional complementarities as employed by the RT and the notion of structural crisis: For the RT, the fit among institutions is always understood as partial and transitory, and there are always several possible adjustments between the productivity regime (PR) and the demand regime (DR) - some of these adjustments may or may not yield the virtuous dynamics envisioned by the typical Kaldorian cumulative causation schema. The most severe case of dis-adjustment, or *mismatch*, is when the very functioning of the of the regime of accumulation comes into contradiction with the existing institutional architecture (and its associated institutional forms) – that is the case of a structural crisis, and ‘the system can no longer reproduce itself in the long-run, at least on the same institutional and technological basis’ (Boyer, 1988a: p.76).

The great advantage of the approach developed by the RT/Amable, however, is to bring political economy to the centre of the debate of institutions, instead of working with institutions as simply one more ‘component’ that must be combined with fixed and human capital to propel economic growth, as Setterfield seems to implicitly assume. Institutions are essentially the representation of socio-political compromises resulting from the conflict among unequal agents (Amable, 2003). The diversity of political compromises among various groups, and the idiosyncrasies of social and political struggles existing in different areas of the world will deliver distinct institutions. In cases of structural crisis¹³⁵, it will be political and social factors which will play a decisive role in altering established compromises and thus (re)shaping the institutional complementarities for the whole economy.

Conversely, in order for a region to progress with further *structural changes* and to avoid *lock-in* effects, as discussed in chapter two, it will be political and social factors which will

¹³⁵ Or in cases of ‘external shocks’ and hybridisation, one may well remember from chapter three.

ultimately govern the likelihood of the region to promote the necessary wide-range changes in all the components of the productive process. New socio-political compromises will be required, in order for technical progress to keep growing unabated and be ‘unlocked’. Institutions (and institutional complementarities) which were previously growth-enhancing to one particular productive structure and technological base may not be conducive to a new one. As institutions simply represent certain socio-political compromises, the process of institutional change - thus structural change – is by nature a political economy issue. As mentioned in chapter three, one must transcend the mere *forms* and *functionalities* institutions assume, and focus on the deeper socio-political accommodations they symbolise.

5.3) Regional economic growth

Given this framework, if one wishes to scrutinize *regional* economic growth, it means that the locus of institutional analysis cannot be assumed, from the onset, to be the national level. Hence, I advance the thesis that one can gaze at institutional complementarities from the perspective of the local level. Doubtfully, however, the local level as an analytical category is hermetically separated from other scales of governance. When searching for systemic institutional coherencies, I may follow the footsteps of Peck and Theodore (2007), and submit that one cannot take the national level – indeed, any level - for granted. One must *conclude* that the chosen level of analysis is the most relevant one, instead of *assuming* it from the onset. When scrutinizing local level economic growth, therefore, one must open the possibility that the institutional complementarities discussed in chapter three shall be found there, instead of the national level. Whether or not this is the case, it is a matter to be resolved empirically and respecting the particularities of each specific (country) case study. Some countries traditionally have a centralized economic governance structure, while others have traditionally a more decentralized one.

From a purely growth theoretical perspective, however, the key point, once we have fully appreciated the Kaldorian cumulative causation growth schema, is how to identify a proper mechanism which articulates economic growth spatially. As growth is theorized as demand-led, and sometimes more specifically as export-led, the ability or otherwise of a specific region to sell its production domestically and promote its exports in international markets becomes of paramount importance. In order to foster regional economic growth, then, it is necessary to modify the industrial structure of a region so that the commodities there

produced encounter robust demand for them. Therefore, growth prospects will differ between sub-national areas, as the productive structure of the regions also differ. To put differently, theorizing regional economic growth from Kaldorian lenses requires the scholar to investigate two inter-related topics: the ultimate, demand-led, source of economic growth, and the particular productive structure of the regions, responsible for realizing the opportunities of dynamic increasing returns made available by demand expansions. Increased demand may be met by different regions within a country, and what will determine which one will take advantage of this opportunity is the prevalent productive structure of the region. In other words, the ability of a locality to harness and exploit an enhanced aggregate demand will depend on the match of what the region supplies (its productive structure) and the type, or component, of the aggregate demand under expansion.

It becomes clear how the inter-action of supply and demand, a dear topic for both Young and Kaldor, reveals itself at the local level. From our Kaldorian perspective, growth is always demand-led, but, as seen in chapter two, supply-side characteristics cannot be brushed away. Here I submit that in order to appropriately tackle *regional* economic growth one must include supply-side factors, even if growth is ultimately demand-led. This assertion resonates well with part of the Kaldorian literature (Dutt, 2006; Palley, 2002; Setterfield, 2013; Skott, 2016) which aims to tackle the supply-side and understand the mechanisms behind its accommodation to alterations on the demand-side. At the regional level, I may consider indicators that characterize the productive structure of a region.

Another way to put it is to say that the demand regime (DR) – how the productivity gains accrued are shared – is first and foremost a macro, national level phenomena. It is the interaction of the DR with the local-level productive structure which will set the cumulative causation schema at each region. While the aggregate demand is common to each region within a country, the productive structure is particular to the region. What is more, the productive structure and sectorial specialization of each region is the result of a long historical process, path-dependent therefore, and strongly determined by its historical legacies. Those legacies, needless to say, are permeated by a whole set of socio-political factors, deeply rooted in each region history. To some extent, the current productive structure of a region is the cumulative result of a series of adjustments and upheavals which have taken, and still are taking place. It is the particular compromises crafted by local level agents which will shape and reshape, continuously, *throughout the whole trajectory* of economic growth, these

historical legacies, which will be crystalized in local level institutions and productive structure.

5.4) Regional economic growth in China: multiscalarity and prefecture-level cities as the unit of analysis

Perhaps now it is time to leave these abstractions and resume the discussion on China. At the introduction of this thesis it was called attention to the plethora of labels scholars have been trying to employ in order to categorize ‘Chinese capitalism’. One of the reasons for the diverse and often contradictory labels is China’s internal heterogeneity in terms of institutional formations. To the extent there exists a ‘Chinese’ own brand of capitalism, it is a brand flexible enough to accommodate antagonistic features, and the search for institutional coherence, especially at the national level, is undoubtedly thorny (Zhang and Peck, 2014). As seen in chapter four, the local state in modern China has a long history of relatively autonomy on economic governance. More than that, in the Post-Mao period local states became catalysts of economic growth, and local officials, in a symbiotic partnership with the business sector, had the necessary leeway to devise developmental strategies. Concurrently, the central government also refined its mechanisms of control, and could thrust its weight down to the grass-roots level. This dynamic and oscillating relationship between central control and local discretion, convincingly encapsulated by Heilmann (2008a, 2008b), fits very well with the ‘variegated capitalism’ approach of Peck and Theodore (2007), in which the multi-scalar and relational aspects of capitalism are privileged. There is no stubborn search for a *national* level coherence. It does not mean either that the institutional coherence is simply down-scaled to the local level (that would be tantamount to assume ‘local models’ are perfectly autonomous or detached from the national level). Rather, it is the ongoing tension among distinct scales of governance, and the way they are inter-related, which is sought. Local levels of economic governance are embedded in national regimes of accumulation (and also linked to foreign capital and global circuits of accumulation). The Chinese case, with its peculiar central-local relations and ‘opening-up’ to foreign capital dovetails the variegated capitalism approach quite well (Zhang and Peck, 2014).

In order to understand *regional* economic growth in China, then, the focus and starting point must be set at the local level, but without simply assuming from the onset this is the only scale relevant for this study. Zhang and Peck (2014) condense it fruitfully:

‘the challenge must be to theorize across scales...In order to achieve traction in explanatory terms, such a multi-scalar approach must in its own way be causally selective – it cannot be a ‘theory of everything’ or an unprincipled collection of ‘models from everywhere’. Regional ‘models’, to warrant the label, must be shown to display a measure of distinctive institutional-cum-developmental integrity’ (p.22)

Having said that, it is time to be more specific by what it is meant by ‘local’ level in this study¹³⁶. China has a multi-layered governance system, and the ‘sub-national’ scale encompasses at least four distinct political-administrative divisions: provincial¹³⁷, prefectural, county and township levels. The sweeping reformist programme of the Post-Mao Era also had its impacts on China’s local administrative system. While it is true that the provincial level showed apparent stability over time, recording only four changes after 1978¹³⁸, important modifications took place at the sub-provincial Chinese administrative system. The rapid process of urbanization was manifested in a rise of urban units in general: prefecture-level, county-level and deputy-provincial cities¹³⁹, and also urban districts (Chung, 2010a).

The post-1978 programme of reform and opening-up propelled a number of interrelated phenomena in terms of urban administrative restructuring. Many of the newly-created urban units came to life thanks to the administrative upgrading of rural to urban areas, the revision of administrative boundaries, and the merge of distinct units (Chien, 2010). The reformist programme created the perception among local elites that cities enjoyed more advantages in attracting investment to their locale, so being upgraded from a rural area to an urban area could be perceived as a status promotion. Apart from this general perception, China’s rapid urbanization from the mid-1990s onwards was translated into a heightened demand for land, so cities could serve the housing needs of an increasing number of urban dwellers on the one hand, and on the other assign more land to very profitable real estate developments and also manufacturing production, often placed on newly created industrial parks and development zones. In sum, urban local governments were aiming at boosting their fiscal and investment-attracting powers (Chung and Lam, 2004).

¹³⁶ Recall that the Kaldorian tradition does not have a clear theorization of which spatial scale is the more relevant one in order to assess and measure localised increasing returns. The urban economics literature, on the other hand, has a well-defined unit of analysis – the city level or urban agglomerations.

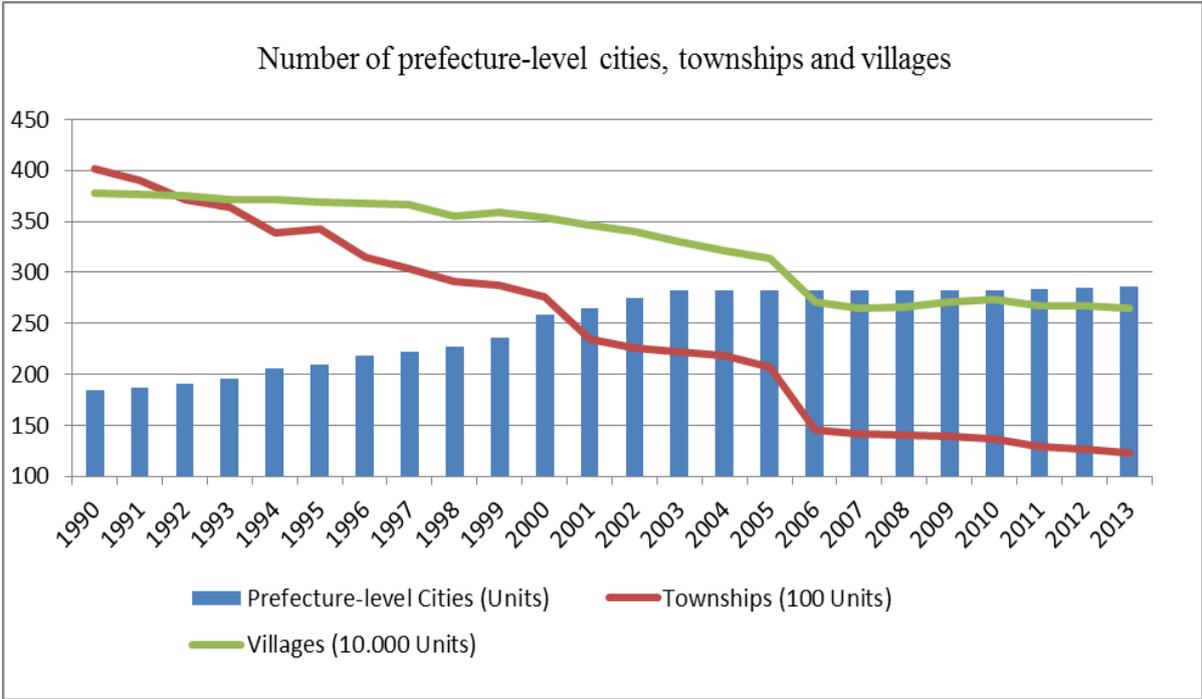
¹³⁷ Including the four centrally-administered municipalities.

¹³⁸ The establishment of Hainan as a province in 1988, Chongqing as a centrally-administered municipality, and Hong Kong and Macau as Special Administrative Regions in 1997 and 1999.

¹³⁹ See Chung (2010b) for a detailed discussion on this category

In particular, one may highlight the rise of prefecture-level cities as a new level of governance in modern China. Effectively, prefecture-level cities became an actual layer of local administration placed between the provincial and the county levels. Figure 5.1 below displays the numerical rise of these units, while the number of villages and townships clearly decreased. To be sure, county-level cities also experienced a dramatic rise, in yet another reflex of China’s rapid urbanization, while the number of counties in general decreased¹⁴⁰ (Chung, 2010a). However, it seems fair to believe that prefecture-level cities, particularly, reaped most of the benefits from China’s urbanization.

Figure 5.1: Number of prefecture-level cities, townships and villages (1990-2013), (units)



Source: Own elaboration, data from the Ministry of housing and urban-rural development (MHURD)

They became entitled to administer not only the ‘city proper’, but also the surrounding suburban counties and county-level cities. Under this system commonly known as ‘city-leading-county’ (*shì guǎn xiàn*, 市管县), prefecture-level cities gained greater administrative and economic powers, often at the expense of county-level units under their jurisdiction. They are responsible for the area-wide planning and urban-rural integration, take full responsibility for developing urban districts, and are entitled to extract fiscal resources which otherwise

¹⁴⁰ Data from the Ministry of Housing and Urban-Rural Development (MHURD) reveals that the number of counties in general decreased from 2153 in 1978 to 1613 in 2013. County-level cities, on the other hand, increased from 92 in 1978 to 445 in 1996 and later decreased to 368 in 2013.

would be accrued by their subordinate units¹⁴¹. According to Wong (2009), in 2004 municipalities accrued 16.6% of China's total budgetary revenues, against 11.2% for provinces, 12% for counties and 5.2% for townships. Urban districts have a more restricted leeway for economic and political competences. County-level cities, on their turn, are not allowed to establish urban districts (contrariwise to prefecture-level cities) and lost some of their leeway for policy-making and law-enacting powers, which were granted to prefecture-level cities above them. In particular, they are forbidden to engage in land-leasing, construction of airports, tertiary education and grant allocation (Chien, 2010). From budgetary and policy-making perspectives, prefecture-level cities were the main beneficiaries of China's urbanization. Chien (2010) reports a telling trend: in 1982 there were only 58 prefecture-level cities administering 171 county-level units, but in 2004 there were 273 prefectural-level cities administering 1.265 county-level units. These figures demonstrate the expanded administrative power prefecture-level cities acquired, often at the expense of some counties and county-level cities¹⁴². Not surprisingly, in recent years a lively body of literature has emerged, delving on the city level as a privileged unit of analysis when scrutinizing economic development and comparative studies between different cities¹⁴³.

This thesis, therefore, will frame local economic growth in China from the perspective of *prefecture-level cities*. These are the units which increasingly concentrate economic, fiscal, and administrative power. Recalling the discussion on the symbiotic nature of local political and economic elites in China, prefecture-level cities seem to be the most appropriate unit to analyse their catalyst role in spurring local growth. While it is true that during the first decade and half of economic reform rural counties – home to many TVEs – could be an ideal unit of analysis, after the late-1990s the situation has arguably changed. The rapid trend of urbanization and rise of urban units, as discussed, places prefecture-level cities as a privileged unit of analysis. In other words, the institutional coherencies and complementarities, often chased at the national level, seem to be more adequately conceptualized, in the Chinese case, at the level of prefecture-level cities.

¹⁴¹ This fiscal aspect of course has led to some counties facing financial dire straits, and currently there are attempts to establish a 'province-leading county' system, so counties can bypass the prefectural level. See Li and Yang (2015) for a discussion on this matter.

¹⁴² Chung and Lam (2004) reminds the case in which Panyu, a former county, was upgraded to a county-level city status in 1992, to later be incorporated as an urban district by Guangzhou, in 2000.

¹⁴³ For instance, Chung (1999a), Ma and Wu (2005), Wu (2007a) and Wu et al (2007).

5.5) Institutional complementarities at the local level in China

Hereafter it is required, then, to lay down precisely what are the institutional realms and the particular forms institutions assume, to be analysed at the local level¹⁴⁴ in this study. At this point the reader must recall the discussion about institutional complementarities presented in chapter three. Different authors affiliated with this tradition select slightly different institutional forms in their empirical studies, and there is no such a thing as a pre-defined list of institutional forms that must be always considered. Table 3.1, in chapter three, sought to synthesize the institutional forms selected by the most relevant authors who work with the concept of institutional complementarities. It was realized that there is a certain degree of convergence and parallelism among the distinct institutional forms selected.

Despite of some nuances and particularities, Table 3.1 revealed that different authors all contemplated some common institutional realms in their analysis: labour markets or capital-labour relations; education and/or training; financial intermediation, financial regimes or corporate governance of enterprises; types of product-market competition or inter-firm relations; forms of state intervention (in different realms or in a separated one) and connections with the international economy. With the privilege of hindsight, the selection of these realms seem legitimate: they basically reflect how one should perceive the social reproduction of labour and capital, how productive organizations (enterprises) finance their operations, how learning (or, in a more mainstream vein, human capital) is promoted, and how the market economy is connected with the state and with foreign agents.

Following the literature, in the framework developed here the same logic will be sought, but adhering more closely to the authors affiliated with the RT, that is, Boyer (1988a) and Amable (2003). Six distinct and complementary institutional realms will be taken into consideration. Table 5.1 summarize them:

¹⁴⁴ From this point onwards, 'local level' is always synonym to prefecture-level cities. Accordingly, 'cities' will be always synonym of prefecture-level cities, unless otherwise specified.

Table 5.1: Institutional realms and forms under consideration when analysing local economic growth in China

Institutional realms	Institutional forms
1) State ownership	Output of state-holding enterprises
2) Engagement with foreign capital and foreign markets	Output of foreign-invested enterprises; local current of trade (X+M)
3) Labour markets and labour-wage nexus	Levels of urban wages; migrant population
4) Education sector	Years of schooling; number of graduated university and college students; specialized workforce
5) Productive structure: specialization and diversification	Relative specialization and diversification indexes
6) Financing	Local bank loans as share of GDP; local listed enterprises' revenues

Source: Own elaboration

The first institutional realm, *state ownership*, will aim to assess the degree in which the Chinese state directly operates at the level of industrial production. Other important elements of state intervention, like specific law- and policy-making powers will be overlooked, as it is very daunting to get quantitative and comparable measures of these aspects. The direct intervention of the state in industrial production, however, can be easily assessed by its ownership. Given China's past experiences with aspects of a centrally-planned economy and the suppression of private ownership, and the partial process of privatization the country has undergone (a geographically uneven one), currently some localities feature an industrial base heavily dominated by SOEs, but others have virtually got rid of them. Secondly, the *engagement with foreign capital and foreign markets* will privilege the degree in which a locality is connected to the global circuits of accumulation, by assessing the share of its industrial production dominated by foreign-invested enterprises (FIEs) and its openness to global trade. While some localities are heavily engaged with foreign capital, others remain relatively closed. Thirdly, the *labour markets and wage-labour nexus* will assess basic characteristics of local labour markets in different localities. As it is well-known, wage-compensation varies substantially in China; cities have the power to set minimum wages (Freeman, 2015) and other local aspects like the degree of unionisation may affect wage levels. Moreover, given the enormous rural-urban migration China has been experiencing,

data on migrant population will be employed. The degree to which a city attracts (or repels) outside workers is fundamental in characterizing local labour markets dynamics. Fourthly, the *education sector* will be preoccupied with the ability of a city to offer the human capital necessary to promote innovation and technical progress. Hence, the average educational level of the local population, measured by the average years of schooling, the capacity of different cities to graduate students from higher educational institutions (HEIs) and the relative size of the specialized workforce engaged in productive activities, measured by the number of technical personnel¹⁴⁵, will be assessed. Fifthly, the *productive structure* of cities will be assessed, specifically regarding the degree to which localities have a productive structure very *specialized* in one particular sector, or are more *diversified* among distinct sectors. This debate, as one may well remember, comes from the mainstream literature on urban economics. What will be attempted here, however, is not to determine whether specialization or diversification, *per se*, is better for growth. Rather, it will be shown that these characteristics (at least in the Chinese context), are complementary to other institutional forms and a result of path-dependent processes. Moreover, as it will be clearer later, it is the particular, macro-level composition of aggregate demand which will dictate whether a local-level pattern of specialization or diversification is more beneficial or not to economic growth¹⁴⁶. In other words, the broader economic embeddedness of cities (and their productive structure) will be taken into account. Finally, *financing* will aim to present the main mechanisms in which companies located in different cities utilize to finance their activities. Measures on the importance of bank credit and stock markets will be presented. Some localities may be more dependable on the banking system than others, while some localities may exploit both banking and non-banking financial institutions in order to secure their funding.

These are the six institutional realms/forms to be scrutinized at the local level in China. Their interconnections, i.e., the complementarities among all the six institutional forms, will expectedly yield a system-level coherence, lending the required institutional support to an accumulation regime to materialize. The viability of any accumulation regime will depend on the harmony (or otherwise) among the institutional forms shown. Table 5.2 below aims at

¹⁴⁵ The number of technical personnel is the sum of engineers, agricultural technicians, scientific research personnel, health technicians and teaching staff.

¹⁴⁶ And also notice that the conceptualization of this fifth institutional realm/form – productive structure – is considerably different from Boyer's (1988a) types of competition and Amable's (2003) product-market competition. This is mainly due to my specific focus on the local level, whereas the previous authors were assuming national-level complementarities.

spelling out the possible complementarities involved among all the six institutional realms under scrutiny.

Table 5.2: Institutional complementarities among the six institutional realms

Institutional Realms	State Ownership	Engagement with foreign capital and markets	Labour Markets and Wage-Labour nexus	Education Sector	Specialization - Diversification	Financing
State Ownership	-	Existence of relatively successful large-scale SOEs makes the attraction of FIEs less imperative. Diminished base of relatively successful SOEs may entice the city to attract FIEs	SOEs are normally more capital-intensive and offer higher wages than labour-intensive FIEs. Also, are less dependable on migrant workers and cheap labour	SOEs (normally more capital-intensive and offering higher wages) may require a better skilled workforce and partnerships with top-level HEIs as sources of competitiveness (instead of low labour costs)	Existence of relatively successful large-scale SOEs makes the economy more diversified and less dependable on one single sector. Diminished base of relatively successful SOEs may entice the city to forge strategies betting in one particular sector	State ownership and associated local officials may facilitate the going public of local companies and the access to bank loans.
Engagement with foreign capital and markets	Foreign capital and FIEs may form Joint-Ventures (JVs) with SOEs, or come as wholly-foreign owned enterprises (WFOEs) in case of a lack of relevant SOEs	-	Foreign capital will choose its locational strategy based on labour costs and on the easiness of export promotion of each city	Foreign capital will choose its locational strategy based on the local supply of skilled/unskilled worker of each city	Foreign capital may target one or few sectors to invest in. The selection of the sector(s) in case will depend on the local characteristics of the city	Foreign capital may bring funds from abroad, not being so dependable on domestic financial institutions.
Labour Markets and Wage-Labour nexus	Labour market characteristics (level of wages; supply of migrant workers) should match the characteristics of a large state-sector (relatively higher wages, capital-intensive, domestic-oriented)	Labour market characteristics (level of wages; supply of migrant workers) should match the locational strategies of foreign capital (low wages as possible source of competitiveness; external orientation)	-	Labour market characteristics should match local level educational standards and degree of skilled/unskilled workers. Localities with presenting better educational standards are expected to offer higher wages	Strong inflow of migrant workers and lower wages are necessary to supply labour to a specific labour-intensive sector.	A labour market presenting more employment stability and higher wages may require a higher easiness to access finance to fund/make up for possible allocative employment rigidities. A more flexible labour market, and offering lower wages, may not require such an ease access to domestic financing institutions
Education Sector	Educational characteristics (skilled vs unskilled workforce) should match the characteristics of a large state-sector (higher wages; capital-intensive). A more skilled workforce may match a large, capital-intensive state sector.	Educational characteristics (skilled vs unskilled workforce) should match the locational strategies of foreign capital (low wages as source of competitiveness; labour-intensive production vs capital-intensive)	Educational standards should match the local level of wages and the local attraction of migrant workers (characterized by poorer educational standards). A more skilled workforce and better educated population may demand higher wages	-	More skilled workers can be employed by a larger array of sectors; more local research centres and HEIs can establish more partnerships with firms in a diversified economy. A city dominated by unskilled workers will depend on the particular labour requirements of the most important economic sectors of the city	More local HEIs and top-level research centres may require stronger supply of funds in order to finance their activities. The lack of top-level HEIs and research centres may preclude the ease access to domestic finance
Specialization - Diversification	Degree of specialization/ diversification impacts the industrial ownership strategy of city. Successful diversification in the state-sector allows the city to resist further ownership reforms	Degree of specialization/ diversification impacts the eagerness to attract foreign capital. A highly diversified city may not lure foreign capital so energetically	Successful higher specialization in one labour-intensive sector reinforces the importance of cheap labour and a large pool of migrant workers. Successful diversification may accommodate highly paid workers in distinct sectors	Degree of specialization/ diversification impacts the employment opportunities for skilled/unskilled workers in the city. A more diversified city may offer more job options for skilled workers. If a city is more specialized, it will depend on the characteristics of the sector	-	Degree of specialization/ diversification may affect the necessity of accessing the domestic financial system. Higher diversification calls for a ready supply of funds in case some sectors do not encounter robust demand or are not so efficient
Financing	Easy access to domestic finance can make up for possible inefficiencies and rigidities of the state sector. More difficult access may impel the city to progress with further ownership reforms	Easier access to domestic finance may be channelled to local domestic companies (SOEs or private), making the city less dependable on FIEs. More difficult access to domestic finance may incite the city to lure foreign capital	Easy access to domestic finance may allow cities to maintain higher employment stability. More difficult access to finance may require the city to have a more flexible labour market	Easy access to domestic finance may allow companies to invest in specific skills and training (higher specialized workforce). More difficult access may compel the city to rely on unskilled workers.	Easy access to domestic finance may be channelled to a large array of not-so-competitive sectors, keeping the economy more diversified. More difficult access may compel the city to specialize in a sector deemed to enjoy more robust demand	-

Source: Own elaboration

It is important to emphasize that table 5.2 aims to display all the *possible* complementarities among all the institutional realms. That does not mean, however, that the scholar is expected to find all of them in a particular case study. Some institutional complementarities tend to be more obvious and stronger, like the intersection between ‘labour markets and wage-labour nexus’ with ‘engagement with foreign capital’. Cities characterized by relatively cheap labour tend to attract more easily labour-intensive FDI, while cities characterized by relatively expensive labour will have more difficulty in attracting this type of FDI. Other complementarities are less obvious, and harder to be detected in practice, like the intersection between ‘financing’ and ‘specialization-diversification’. The key point is that, on an *abstract* level, it is possible to *hypothesize* all these complementarities, even if some are more conceptually feasible than others. The real test will come next chapter, when this matrix will be applied for the cases of Nanjing and Suzhou. The actual case studies will offer concrete examples of the complementarities between the institutional forms, and some complementarities will be easily identified, while others will be seen to play only a secondary role or will not be strong at all.

In any case, it is important to recall that for the RT the fit among institutions is always understood as partial and transitory, leaving space for endogenous changes and for exogenous shocks to impact the system of complementarities. That is another manner to state that the complementarities identified in Table 5.2 do not need to be so perfectly tight and some cells may display stronger connections than others, without jeopardizing the soundness of the theoretical construction.

5.6) The framework

While the unit of analysis in which the system of institutional complementarities identified in Table 5.2 is the prefecture-level cities, one cannot dismiss other scales in this study. That would be tantamount to incur in exactly the same mistake which some studies adopting (implicitly or explicitly) the idea of methodological nationalism face, but this time on a miniature scale. As Zhang and Peck (2014) stated before, one must ‘theorize across scales’ (p.22). Indeed, the local level as an analytical category is not isolated from the national and global levels.

To start with, the second institutional realm under scrutiny, *engagement with foreign capital and foreign markets*, represents a clear causal link between the local and global levels. While cities have their own history, and their productive structures are the result of a series of local and national legacies granted to them, they are able to consciously craft strategies to engage with foreign capital and global markets. What is more, this is a two-way avenue: global circuits of accumulation also shape the developmental decisions of localities, restricting and expanding possible future choices, in a path-dependent process.

The national level must also be included in this theorization. To be sure, the first institutional realm under scrutiny, *state ownership*, and especially the representation of this institution into the *form* of the output of industrial SOEs, has a strong linkage with the national level: many SOEs in China are actually centrally-controlled. Even in the case they are locally-controlled, in many cases these were previously centrally-controlled and later devolved to localities. Where to establish a strong industrial base of SOEs in China has always been a politicized issue, subject to the preferences of the centre. Moreover, the national level is present in other institutional realms: the *education sector*, in particular when it comes to HEIs and other research centres, is highly susceptible and/or dependable on investments from the central government. The priorities and policies from the central government will leave their effects at the local level. The same goes for possible national-level industrial policies, like national content requirements, which will affect different localities according to the city-specific sectorial distribution of industries.

Even more importantly, however, is to come back to the role of demand in local economic growth. As discussed before, the characterization of the productive structure is a fundamental variable for a region in its growth prospects. The fifth institutional realm under scrutiny here, *productive structure* (specialization /diversification) reflexes that. But one cannot conflate the measures of specialization and diversification of the productive structure of each region with the debate, dear to the regional branch of the mainstream endogenous growth theories, on specialization *versus* diversification. This debate, as seen in chapter two, aims to assess whether diversification or specialization *per se* are better for a region, regardless of the macroeconomic structure in which different localities are embedded in. From our Kaldorian perspective developed here, this dichotomy does not illuminate much our understanding on the local level. What matters, essentially, is whether the productive structure of a region

encounters strong demand or not¹⁴⁷. In other words, it is the match – or otherwise – between the local level supply and the national level aggregate demand which will dictate the prospects of local economic growth. The increasing returns and agglomeration economies alluded by the mainstream literature is context dependent, and cannot be studied in the vacuum. It is the aggregate demand – its robustness and composition – which is able to harness the benefits accrued by supply-side factors like the sectorial specialization (or diversification) or a region. The aggregate demand – a macro, national level element – come to the fore of the debate.

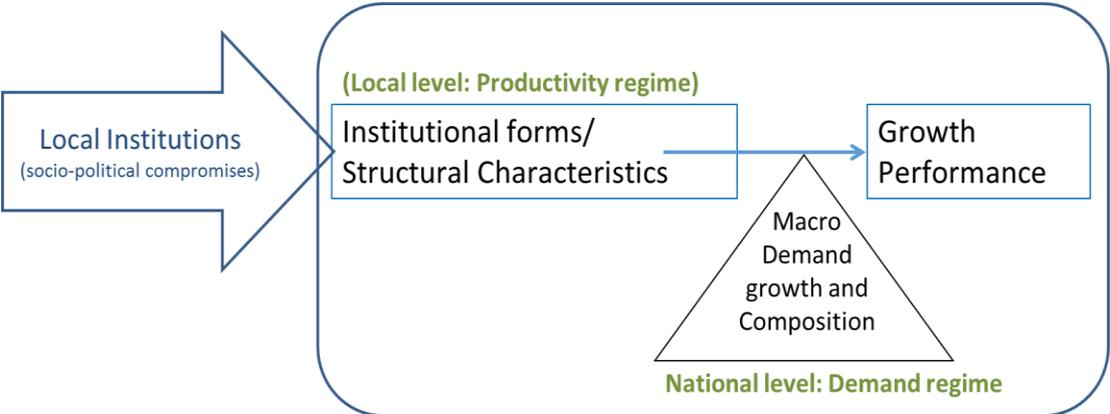
This final point simply highlights, yet from a slightly distinct perspective, the pivotal role conferred to aggregate demand in the Kaldorian schema. The composition of demand (consumption, investments and net exports) changes over time, hence affecting localities in distinct manners. Here it is fair to assume that one single city in China cannot influence the national aggregate demand: whether or not the global economy will increase its demand for computers or potatoes cannot be influenced by one single city in one single country. Conversely, the causes of whether or not the national demand for clothing or for automobiles will increase are governed by factor exogenous to one single city. Localities, in this sense, are ‘demand-takers’. They differ, (substantially) however, in their ability to meet this aggregate demand. And as such their productive structure must be analysed, under this theoretical context.

The framework here proposed will, therefore, defend that local economic growth in China is determined by the appropriate match between *local* structural-institutional characteristics and the *national* macroeconomic demand growth and composition. Local institutional configurations can be captured by local *institutional forms*, identified across the six institutional realms presented before (table 5.1). Recall that these institutional forms simply represent certain socio-economic empirical regularities or the particular form certain main socio-political compromises assumes. As such, these local institutional forms can also be perceived to illustrate certain main structural characteristics of a region (ownership patterns, labour markets attributes, educational standards, productive specialization patterns etc). From

¹⁴⁷ Bear in mind that other institutional forms, other than the fifth one, also reflex some key characteristics of the productive structure of a region. The fifth institutional realm simply has the specificity of focusing on the classic debate on specialization vs. diversification. Relatedly, other institutional forms (higher or lower share of state industrial ownership, FIEs, higher or lower wages etc.) cannot individually be accounted as being undoubtedly growth-enhancing or growth-diminishing institutional forms.

a Kaldorian growth perspective these local institutional forms or structural characteristics can be said to constitute a region’s productive structure, while the aggregate demand is governed by national level variables. From the RT perspective, these local institutional forms or structural characteristics will constitute a region’s productivity regime (PR), while the macroeconomic aggregate demand constitute the demand regime of the economy. Figure 5.2 below synthesizes the framework:

Figure 5.2: A framework to analyse local economic growth in China



Source: Own elaboration

Accordingly, the framework proposed here to analyse local economic growth in China is able to theorize across multiple scales, but also being causally selective and avoiding ‘a theory of everything’, as warned by Zhang and Peck (2014: p.22). Institutional complementarities are to be found at prefecture-level cities, specifically, as justified previously by China’s peculiar and idiosyncratic urban development in the past decades. These localities, nonetheless, are connected to both the national and the global scales, via the mechanisms presented above. In particular, given this thesis objective of studying economic growth, the national level plays a pivotal role in shaping the composition of demand. Distinctive demand compositions will affect the growth possibilities of distinct cities in different manners, depending on their local level institutions.

5.7) Summary and conclusion

This chapter started by regaining the theoretical contributions analysed in chapters two (growth and structural change) and three (institutions), and then focused on a more specific

discussion about *regional* economic growth. Following, it was argued that in the case of China the system of institutional complementarities, often theorized and operationalized at the national level by the literature, should be scaled down to prefecture-level cities. Henceforth, the chapter proceeded by presenting and justifying the selection of the six institutional realms and institutional forms to be analysed in the case studies of Nanjing and Suzhou. Table 5.2 sought to identify all the conceivable complementarities among all the six institutional realms, and a brief explanation of each institutional form was offered.

Building on this knowledge, the chapter thus spelt out the original analytical framework developed for this thesis. The central point is that local economic growth in China is determined by the appropriate match between *local* structural-institutional characteristics and the evolution of the *national* macroeconomic demand growth and composition. Local structural-institutional characteristics are apprehended by local *institutional forms*, identified across the six institutional realms presented before (table 5.1). These local institutional forms can be said to constitute a region's productive structure and are a function of the city's local institutions (i.e., its socio-political compromises). The macroeconomic aggregate demand, on the other hand, is governed by national level variables. Hence, these local institutional forms or structural characteristics will constitute a region's productivity regime (PR), while the macroeconomic aggregate demand constitute the demand regime (DR) of the economy.

Therefore, in order to analyse regional economic growth in China the scholar is faced with three empirical tasks: firstly, it must identify empirically the institutional forms of each prefecture-level city, so to assess the existence (or otherwise) of a coherent set of institutional complementarities at the local level and therefore the city's productivity regime. Secondly, it must assess the composition and evolution of China's aggregate demand, so to gauge the country's demand regime, common to both cities. The final step is to evaluate whether there is a match between the city's institutional-structural characteristics and the country's aggregate demand growth and composition.

The following chapter will employ the framework developed here to analyse the institutional complementarities and the growth performances of two cities located in southern Jiangsu: Nanjing and Suzhou.

Chapter 6: Empirical Analysis: A comparison between Nanjing and Suzhou

6.1) Introduction: Jiangsu province and the North-South divide

It is impossible to write about Jiangsu's economy without putting the Lower Yangtze Valley at the forefront of the discussion. The valley has been historically one of the main locus of economic activity and prosperity in China. According to Jacobs (1999), it was a 'key economic area' (p.114) of China during the Yuan (1280-1368), Ming (1368-1644) and Qing (1644-1911) Dynasties. Nevertheless, the northern area of the province, also known as 'Subei', has suffered from frequent floods until the end of the Imperial era, entailing constant migratory movements towards the more prosperous south and Shanghai.

After the Communist victory in 1949, a two-fold administrative division was established, one in the north of the province and another in the south. After a period of many administrative changes within the province, in 1996 Jiangsu achieved its current configuration with 13 prefectural-level cities. Also, the province was divided into three different areas according to the Jiangsu Provincial Bureau of Statistics (JSBS): Southern Jiangsu (Sunan), Central Jiangsu (Suzhong) and Northern Jiangsu (Subei) (Jacobs, 1999). In the year 2000, the cities of Nanjing and Zhenjiang, previously classified under Central Jiangsu, were incorporated into Southern Jiangsu.

6.1.1) The 'Sunan model' and the North-South divide

Southern Jiangsu, located just below the Yangtze southern shores, historically is a wealthy area in China and may be considered the cradle of the Chinese distinctive pattern of rural industrialization. According to some historians¹⁴⁸, already in the Imperial times the high population density of the region in relation to its limited arable farm land propelled peasants to also engage in 'sideline' production activities and handicraft production, in order to boost up their incomes. Agriculture and industry have long been intertwined in the region.

¹⁴⁸ See Duara (2008), for instance.

Moving forward to the early-1970s, rural industrialization was a policy consciously pursued during the Late Maoist Era (Bramall, 2009). The surplus labour in the area plus the tradition of rural industry facilitated the success of the rural industrialization drive in the Sunan¹⁴⁹ area. The Cultural Revolution period also witnessed the transfer of some manufacturing activities from urban centres (especially from Shanghai) to Sunan's hinterland. With the post-Mao reforms, those industries started to establish closer trade and commercial links with larger cities. Many TVEs actually began their operations during the Late Maoist Era, as 'commune and brigade' industries. According to Jacobs (1999), already in 1978 more than one third of Jiangsu's industrial output came from collective-owned enterprises (COEs).

With the reform and opening drive initiated in 1978 the region soon became one of the flagships of the Chinese new reformist paradigm. The 'Sunan model'¹⁵⁰ was then characterized by fast economic growth and the collectively-owned TVEs. Due to the region's rapid economic growth, local governments also enjoyed higher tax revenues, which could be re-invested in infrastructural improvements in the region. Because the local economy was based on county-level enterprises and TVEs, much of the revenues and profits generated stayed within their own purview.

The northern area of the province (Subei), on the other hand, features levels of income per capita below the national average, and the process of industrialization and urbanization are much less pronounced. Moreover, the economic structure has traditionally relied less on TVEs and COEs, with SOEs predominating. Common explanations for the unevenness of economic development in Jiangsu usually revolves around Subei's poor environmental conditions (poor irrigation, salty soil); its distance from major urban centres, like Shanghai; poor transportation infrastructure; low levels of educational attainment and workforce training; and a historically weak industrial base (there were virtually no industries until 1949). Moreover, with the post-Mao reforms, the central government diminished the flow of fiscal transfers to backward regions, and local governments in poorer areas found it difficult to raise funds locally and attract (foreign) capital (Jacobs, 1999).

¹⁴⁹ In this thesis, the expression *Southern Jiangsu* will be used to refer to the combination of the five southernmost cities in the province: Suzhou, Wuxi, Changzhou, Nanjing and Zhenjiang. This is the official classification presented by the Jiangsu Statistical Bureau since the year 2000. The expression *Sunan* or *Sunan model*, in opposition, will always refer solely to the cities of Suzhou, Wuxi and Changzhou. The expressions, therefore, cannot be used interchangeably in this study.

¹⁵⁰ Again, referring only to Suzhou, Wuxi and Changzhou.

Southern Jiangsu, thus, is one of the wealthiest regions in modern day China. Contemporarily, not only the region is the recipient of Sunan’s economic legacies, but also benefits from the existence of the provincial capital, Nanjing, another historically rich area in China. Table 6.1 below compares Southern Jiangsu with Northern Jiangsu in some selected socio-economic indicators:

Table 6.1: Southern vs Northern Jiangsu: selected indicators (2015)

Selected Socioeconomic indicators (2015)		
Indicators	Southern Jiangsu	Northern Jiangsu
GDP per capita (Yuans/person) [a]	125,002.00	55,127.00
Capital-Labour ratio (10.000 Yuans/Worker)	11.05	7.90
Average Annual Urban Wages (Yuans)	73,792.00	52,866.00
High-Skill and technology-intensive manufactures as share of total manufacturing output (%) [b]	43.88	31.74
Labour-intensive and resource-intensive manufactures as share of total manufacturing output (%) [b]	10.90	29.31
Agricultural employment as share of total employment (%)	7.05	30.15
Urbanization (%)	75.2	59.1
Total Labour Productivity (10.000 Yuans/Worker)	20.65	9.51
Average Years of Schooling (years/person) [c]	9.96	8.72
Illiteracy rate (%) [c]	2.92	6.13
Net Exports as local GDP share (%)	14.23	3.92

Source: Own calculations based on data from the JSBS (2016) unless when otherwise specified

[a] Calculation based on the permanent population

[b] This classification was made following the UNCTAD division of manufactured goods by degree of manufacturing groupings. See Appendix 8 for a methodological explanation.

[c] Data from NBS (2010b)

As it can be seen, Southern Jiangsu presents higher figures for gross domestic product (GDP) per capita and total labour productivity in relation to Northern Jiangsu. The region’s manufacturing structure is also more advanced, featuring a higher share of technology-intensive production and a smaller share of labour-intensive production, and the process of capital-deepening has progressed farther when analysing the capital-labour ratio. The process of structural change has also clearly advanced more in the south, when gauged by the data on urbanization and agricultural employment. Moreover, urban wages and educational indicators like average years of schooling and illiteracy rate are always superior in comparison with the north of the province. Finally, Southern Jiangsu displays much superior figures for net exports, indicating a productive structure more attuned with external demand.

6.2) A comparison between Nanjing and Suzhou: 2001- 2015

6.2.1) Justification for Nanjing and Suzhou as case studies and for the period of analysis

Southern Jiangsu's superior socioeconomic performance is evident, but one must recall that the region is composed by five different prefecture-level cities. To some extent, the label 'Southern Jiangsu' obfuscates the heterogeneity of socioeconomic formations present in there. Although the region as whole is verifiably wealthy, different cities in the region achieved this superior economic performance by distinct means. In particular, Nanjing seems to have trailed a dissimilar developmental path in relation to the cities belonging to the canonical 'Sunan model'. Their geographical proximity and economic ties notwithstanding, they stand for two successful, yet distinct, types of economic development in the province.

Moreover, one must bear in mind that 'Southern Jiangsu' cannot be taken as a unit of analysis *per se*, given that it is not a political-administrative unit. As discussed in chapter five, a case can be made to study local economic growth in China at the level of prefecture-level cities. Therefore, this chapter will proceed by employing the analytical framework developed in chapter five to promote a comparison between Nanjing and Suzhou, two prefecture-level cities located in Southern Jiangsu.

The objective is to select two successful, yet distinct, patterns of development, highlighting their differences and specificities. In spite of their dissimilarities, it will be suggested that both cities have been able to achieve positive outcomes during the post-Mao Era and, as such, both display positive features of China's long-term economic development. Nevertheless, the relative economic performance of Nanjing and Suzhou have not been invariant over time, with one city presenting superior results in one period of time and the other reversing the trend in other periods. This fact will underscore the existence of structurally distinct local economic 'models' in China, highlighting the country's internal institutional heterogeneity. It will be argued that it is not possible to pin down which city possesses a superior 'model' of development. Whether or not one city displays a relatively superior economic performance will depend ultimately on broader considerations, notably the evolution of the country's demand regime (DR) and its match with the city's structural and institutional characteristics.

The data analysis will focus on the 2001-2015 period. This timeframe was decided for a series of reasons. Firstly, it starts in the year China joined the WTO, representing a major national-level institutional change, affecting the economic possibilities of the whole country. In particular, cities in East China (the case of Nanjing and Suzhou) tend to be more engaged with foreign trade and investments, so the WTO accession is likely to be especially relevant for the cities under study. Secondly, the period 2001-2015 can be neatly divided into two sub-periods of roughly similar length: considering the 2008 global financial crisis (GFC) as a major watershed, one can consider a pre-GFC period, roughly from 2001 to 2008, and a post-GFC period, roughly from 2009 to 2015. As it will be shown in section 6.3.1, the GFC seems to have provoked far-reaching changes in China's composition of aggregate demand, and this subdivision will be employed in analysing the growth performances of both cities. Thirdly, data availability at the local level is restricted for the pre-2001 period, creating obstacles difficult to be overcome given the empirical strategy of this thesis.

6.2.2) Historical background and economic structure of Nanjing and Suzhou

6.2.2.1) Nanjing

Nanjing boasts a long and rich history, spanning from at least the Three Kingdoms period (A.D. 220–280), when the city first became a capital. Its strategic geographical location and transportation links made the city an early agglomeration for the production of textiles and handicrafts, and during the Ming (1368-1644) and Qing (1644-1911) Dynasties Nanjing became one of the most prosperous cities in China. After the fall of the Qing, the city once again became the capital of the country, during the Republic of China Era (1912-1949) (Yuan et al, 2016).

After the Communist Revolution, in 1953 Nanjing became the provincial capital of Jiangsu, thereafter concentrating a great number of large-scale SOEs, particularly in heavy industries, such as steel, automobiles, machinery and metallurgical machinery, military equipment, building materials and chemicals (Wang et al, 2011). Most of these SOEs were centrally or provincially controlled, and obeyed the logic of vertical industrial planning imposed by upper-levels of government. As such, Nanjing's industrial base would supply goods for the whole Chinese territory, not being confined to the local demand (Chung, 2003).

Moreover, following the Great Leap Forward (1958-60) and the programme of rural industrialization in the early 1970s, many small-scale COEs sprung in Nanjing city and in its hinterland. During the Cultural Revolution period, many urban youngsters were sent to rural areas. In the late-1970s and early-1980s Nanjing also witnessed a process of rural industrialization based on small-scale TVEs, a process facilitated by the young returnees from rural areas (Yuan et al, 2016). In 1978, Nanjing's industrial output structure was composed by 80% of SOEs and 20% of COEs (Chung, 2003: p.210).

6.2.2.1.1) First phase of economic reforms, 1978 – 1992: SOEs-centred industrial restructuring

The reform and opening-up paradigm initiated by the Dengist leadership involved a re-adjustment of the Chinese industry, giving more emphasis to light industries in the early 1980s. In terms of decision-making, some administrative powers were delegated to local governments. Before the reforms, urban spatial development, rural-urban integration and migration matters were tightly regulated by the central government. The post-1978 economic environment meant that local governments became increasingly responsible for funding their own investments and for envisaging local plans of development.

Already in the early 1980s, some SOEs controlled by central and provincial governments were transferred to the city and the government of Nanjing increasingly started to conduct efforts of industrial re-structuring and reorganization of enterprises under its purview. Overall, the strategy adopted by Nanjing was to link its now locally-controlled SOEs and other enterprises to large, centrally-controlled SOEs. As a result, one could observe broad industrial groups controlled by the city, but these groups were integrated with other central, city and collectively controlled companies. Most of these industrial groups were closely linked to other companies in Nanjing, featuring strong backward and forward linkages with local companies. The industrial structure witnessed the growth of light industries in tandem with the traditional heavy industries (Wang et al, 2011). This was a clear industrial strategy led by the city government, which was aiming to boost local development given the inherited industrial structure of the city. With such a strong base of SOEs and their attached national supply networks, any locally-led initiative would have to consider the pros and cons of this legacy (Chung, 2003).

Meanwhile, the narrower base of COEs inherited from the Maoist Era did not receive any spur from the city government. As a result, rural industrialization, a hallmark of many localities during China's roaring 1980s, was not as important in Nanjing as it was for the neighbouring cities of Suzhou, Wuxi, and Changzhou¹⁵¹. In fact, the city government even enacted policies clearly against the rural industrialization of the counties under its purview, requiring all of them to supply agricultural products to the city area until the late 1980s. There was a certain fear of competition for raw materials, and in the eyes of Nanjing city officials the development of county-level COEs could put the supply of goods to city-level SOEs under jeopardy (Chung, 2003).

It is also important to notice the political-administrative structure of Nanjing: already in the early days of the reforms some counties were brought into Nanjing's control, enlarging the city territorial and administrative power. Most importantly, there were *no county-level cities* under Nanjing's administration, a fact that gives Nanjing unrivalled power in its domains. This 'city-centralization' over-empowered Nanjing city, and enabled it to enact policies against the rural industrialization of its counties (Chung, 2003). As it will be seen later, the case of Suzhou is remarkably distinct.

In summary, during the first decade of economic reforms Nanjing re-organized its industrial structure, always placing its SOEs at the centre of its efforts. As a result, and given the chosen strategy, dependence of upper-levels of government was strengthened. This was a very different story of the one in Suzhou, as it will be seen.

6.2.2.1.2) Second phase of economic reforms, 1992 onwards: Late opening and FDI attraction

The slower economic performance of Nanjing in relation to other cities (and especially in relation to Suzhou, see figure 6.2 below) made its leadership change the course of action. In the 1990s, with the further opening up of the Chinese economy and the tremendous growth many localities experienced, Nanjing started to become more active in attracting foreign investments and in remodelling its growth strategy. Foreign capital became increasingly important for the city, either through joint-ventures (JVs) with domestic companies (state-owned or private) or through wholly foreign-owned enterprises (WFOEs). As such, Nanjing

¹⁵¹ The canonical 'Sunan' area

followed the national trend of being granted the status of an ‘open city’ (allowed to attract and offer preferential treatments to foreign capital) and establishing industrial parks and development zones (DZs).

Wei (2015b) reminds us that Nanjing was not among the fourteen coastal cities opened in 1984, and its first national DZ, the Nanjing New and High-Tech Development Zone (NNHTDZ), was established only in 1988. In fact, when the central government granted preferential policies to some cities in the Southern Jiangsu region, like the ‘Yangtze River Delta Open Trade Region’ initiative, Nanjing was only permitted to be part of this open area in 1988, while Suzhou was granted access to the same area three years earlier, in 1985. This is not to say that Nanjing was discriminated against by the central government. Rather, as Chung (2003) puts it, Nanjing’s strong reliance on traditional manufacturing sectors dominated by its SOEs made the city more dependable on policies designed to attend those sectors in particular, and less enthusiastic in lobbying upper governmental levels for FDI-friendly policies (at least initially). In spite of the macro-level ‘opening up’ initiatives and increased leeway for rural enterprises¹⁵² to seek investments and FDI in the 1990s, many of them found themselves seeking to set links with the established SOEs. It is important to notice that, by 1996, Nanjing still had 11 large-scale central SOEs¹⁵³ (Chung, 2003: p.222). Once again, one can fathom the importance of the historical legacies Nanjing inherited in its later developmental records. The strong base of SOEs and central-level linkages shaped the city slower¹⁵⁴ opening-up and adaptation to the new era of Chinese economic development.

The general trend of establishing DZs and attracting FDI started timidly in the late 1980s but has gained further momentum from the 1990s onwards. If in the 1980s only one DZ was created, in the 1990s at least eight more were established. In the early 1990s the central government granted Shanghai and the newly-developed Pudong District preferential policies to attract FDI, and these policies were rapidly extended to the whole Yangtze River Delta (YRD) region. Rules governing FDI attraction were decentralized, empowering local states in their ability to trigger local policies responsible for alluring foreign capital. In Nanjing, FDI increased substantially during the period 1993-98, suffered a temporary setback with the

¹⁵² Nanjing’s 9th five year plan (1996-2000) granted more decision-making leeway to its counties, especially in terms of investment attraction (both domestic and foreign) and aimed at tacking the urban-rural gap the city was experiencing.

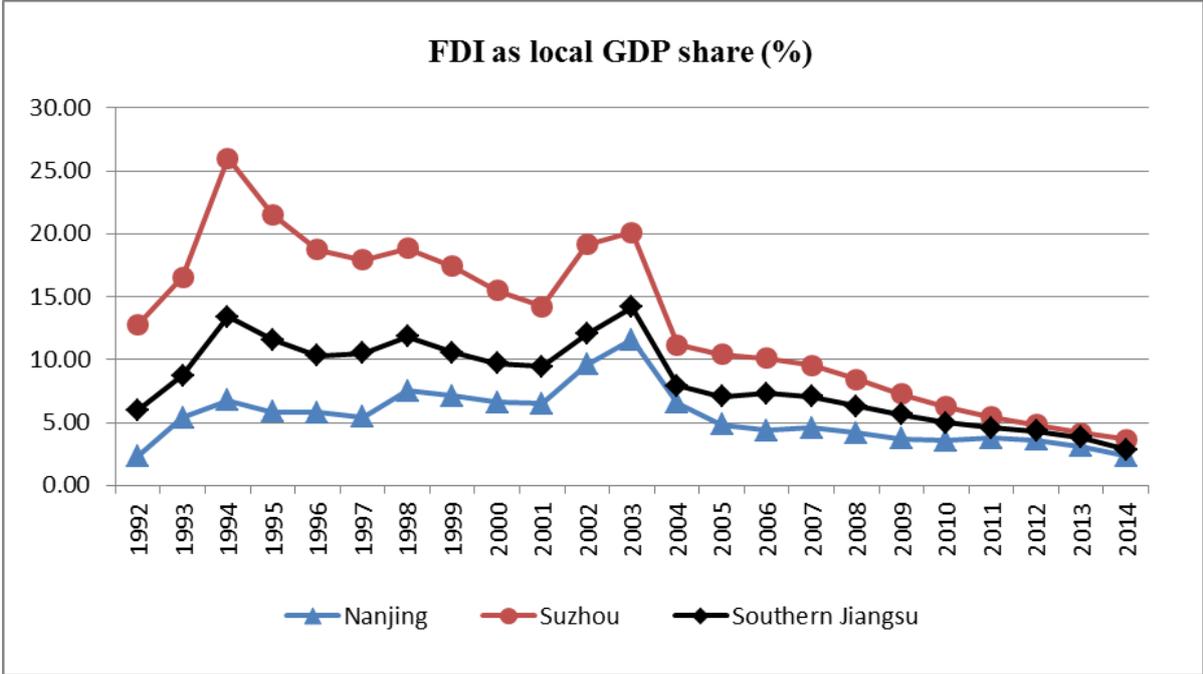
¹⁵³ Including, among others, the Panda Electricity group and the Yangzi Petrochemistry group

¹⁵⁴ Slower in relation to Suzhou, as it will be shown soon.

aftermath of the Asian Crisis, and resumed on a robust pace again after the WTO accession in 2001.

The WTO membership represented an extra fuel for China’s largest and most important cities in their quest of becoming international metropolises, and five more DZs were established in the 2000s in Nanjing. In spite of a great surge of DZs, Nanjing has never matched Suzhou in terms of FDI attraction. According to the field work by Wei et al (2010), foreign-invested enterprises (FIEs) usually believe Nanjing offers less transparent open door policies and its local officials are less professional in comparison with other cities in the YRD, in particular Suzhou. This assessment helps us to understand why Nanjing has attracted less FDI than Suzhou, among other factors (Wei et al, 2010). Figure 6.1 depicts the trends for FDI attraction in the post-1992 period:

Figure 6.1: FDI as local GDP share in Nanjing, Suzhou and Southern Jiangsu (1992-2014)



Source: Own elaboration based on data from JSBS (various years)

An interrelated topic which deserves certain scrutiny is the spatial aspect of Nanjing’s development. Already throughout the 1990s many enterprises started to move out of the old city centre, towards the outskirts of the city. At the beginning of the decade, the city centre concentrated old factories which were established from the late 19th century up to the Maoist Era, and there were also other industrial neighbourhoods and scattered industrial plants

around it. A regeneration of old industrial bases in Nanjing gradually began, in tandem with the attraction of FDI, establishment of DZs, and incentives to promote the services sector and more knowledge-intensive manufactures (Wang et al, 2011). These new DZs were located outside of the old city centre, allowing for the expansion of Nanjing's total urban area.

The general trend of establishing DZs, attracting FDI and promoting urban growth was to great extent facilitated by China's peculiar dual land tenure system, as briefly discussed in chapter four. Already in the 1990s, many local governments started to acquire rural land and lease to non-state developers, leading to a high tide of land expropriations. Framing it from the perspective of local coffers, the transfers of land-use rights also became an important source of local finance, reinforcing Nanjing's search for the incorporation of rural areas into its urban sprawl. With more funds and land available for city planners, infrastructural development was boosted, with the construction, for example, of the Lukou Airport, an underground system, new railway stations and the connection to China's modern high-speed trains (Wei, 2015b). Many projects, however, are unprofitable and poorly managed, and some old DZs are faced with the problem of redevelopment, because they are not suitable to the city's current urban spatial configuration and growth strategy (Wang et al, 2011; Wei, 2015b).

6.2.2.2) Suzhou

Suzhou, like many other Chinese cities, has a long history. In the late Qin Dynasty (221-207 BC) a county governmental unit was established in the area which later would become Suzhou, and by the Sui Dynasty (581-618 AD) the region became a gateway for grain transportation, thanks to the Grand Canal, which connected Hangzhou to Beijing. Afterwards, Suzhou became an economic centre of trade, textiles and handicrafts. During the First World War (1914-18) Suzhou developed rapidly and became one of the birthplaces of modern Chinese industry (Wang et al, 2015).

After the Communist Revolution (1949), enterprises were nationalized and the industrial base of Suzhou became dominated by SOEs and COEs, and the countryside was dominated by communes. During the late 1960s and the 1970s, under the aegis of Mao's programme of rural industrialization, many enterprises run by communes were set in the countryside. These enterprises were mainly COEs, and were geographically close to the urban centres of both

Suzhou and Shanghai. During the 1970s and also early 1980s Suzhou area experienced a process of rural industrialization which was facilitated by the geographical and interpersonal ties between Suzhou and Shanghai's populations. Many of the Shanghainese urban youth which were sent to Suzhou's countryside during the Cultural Revolution were instrumental in establishing industrial enterprises in there (Wang et al, 2015; Chung, 2003).

The process of rural industrialization, significant in the whole Jiangsu province, was more pronounced in Suzhou than in Nanjing. Accordingly, COEs were relatively more important than SOEs in the region. As reported by Chung (2003: p.211), in 1978 the industrial structure of Suzhou was dominated by 31% of COEs and 69% of SOEs. The figures for Nanjing, as seen before, were 20% and 80%, respectively. The political-administrative division of Suzhou was very different from the one in Nanjing as well, with six counties placed under Suzhou city in 1983. This is an important distinction because, under the process of rural industrialization, initiated already in the Maoist period, but which would blossom in the 1980s, rural enterprises often were controlled by counties and townships, and not necessarily by the Suzhou city government directly. Take, for instance, the ownership figures for Shazhou county¹⁵⁵, placed under the city of Suzhou: 73% of the industrial output was dominated by COEs and only 27% by SOEs in 1978. Moreover, out of these SOEs, none were centrally or provincially controlled. In general, Suzhou had a smaller industrial base than Nanjing, SOEs in Suzhou were of smaller scale and controlled by lower governmental levels. As a result, the industrial structure of Suzhou by the end of the Maoist Era was more dispersed and less centralized than in Nanjing (Chung, 2003).

6.2.2.2.1) First phase of economic reforms, 1978 – 1992: COEs-centred rural industrialization

The reform and opening-up paradigm initiated by the Dengist leadership provoked qualitative changes for the city's economic development. The emphasis in light industries in the early 1980s and the increased responsibility local governments had for funding their own investments and for envisaging local plans of development reverberated critically in Suzhou. In particular, the city's inherited industrial structure and ownership patterns were at the centre of an idiosyncratic model of development based on the collectively-owned TVEs. These TVEs were the consequence of the rural industrialization programme of the Maoist Era,

¹⁵⁵ Shazhou county was upgraded to a county-level city in 1987, named Zhangjiagang.

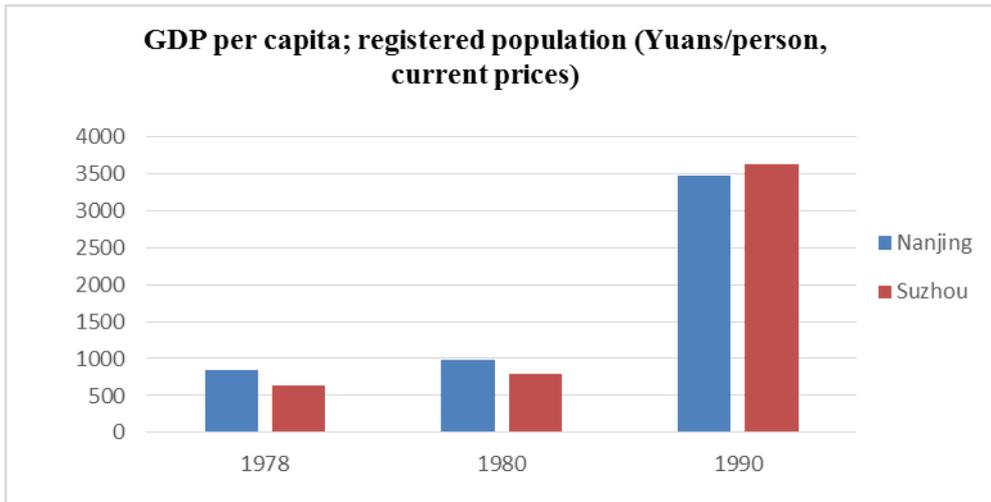
coupled with the incentives and reforms of the post-1978 regime. The cities of Suzhou, Wuxi and Changzhou were perhaps the best example of development based on TVEs, on what became known as the ‘Sunan model’ (Ma and Fan, 1994).

Maoist legacies and Dengist reforms notwithstanding, it is important to pay close attention to the industrial and developmental strategies forged by Suzhou in the 1980s. The city’s dispersed and smaller-scale economy prompted Suzhou to encourage what Chung (2003) labels ‘horizontal economic alliances’ (p.223): amid the context of the post-1978 economic reforms, Suzhou government spurred enterprise autonomy and marketization. Rural enterprises, dispersed throughout Suzhou’s territory, were to establish more economic links among themselves, and also with other large enterprises. The objective was to open up new opportunities for market exchange and production in the area. Hence, Suzhou government and its county-level governments started to actively build marketplaces and shape new markets. This was a sort of precondition for the COEs in the region, normally small and technologically inferior, to enlarge their base of inputs suppliers and boost their product markets. Suzhou government built various specialized commodities and factor markets, hoping it would help the development of local COEs/TVEs, and make the whole region better integrated economically (Chung, 2003).

This strategy is markedly distinct from the one in Nanjing, in which the received SOEs were the lynchpin of the governmental approach to development. While in Nanjing the government tried to link local enterprises with large, centrally-controlled SOEs, overlooking rural industrialization and COEs, in Suzhou the government aimed at instituting a suitable setting for the growth and development of its COEs¹⁵⁶, usually smaller in scale and based on less traditional manufacturing sectors. As the data on figure 6.2 below shows, Suzhou outperformed Nanjing throughout the first decade of economic reforms, overtaking the provincial capital in terms of GDP per capita.

¹⁵⁶ In Shazhou county, previously referred to, in 1985 SOEs corresponded to only 5,4% of the industrial output (Chung, 2003: p.211).

Figure 6.2: GDP per capita: Nanjing and Suzhou (1978-1990)



Source: JSBS (various years)

The drawback of this growth model was a certain tendency for the dispersion and duplication of the industrial structure in Suzhou. Due to Suzhou's fragmented political-administrative structure, distinct counties and county-level cities could pursue industrial strategies relatively independently from others. Moreover, with the passing of the years, TVEs own deficiencies started to surface, like their reliance on unskilled workers, low technology and limited scale of production.

6.2.2.2.2) Second phase of economic reforms, 1992 onwards: Privatization, FDI attraction and export-orientation

The accumulation of problems related to the 'Sunan model', centred on the collectively-owned TVEs, prompted local governments in Suzhou to search for different growth strategies. According to Shen and Ma (2005), in 1995 27% of TVEs in Suzhou were loss-making. Meanwhile, during the 1990s China advanced a process of wide-range privatization, often labelled 'grasping the large, letting go the small' (*zhuā dà fàng xiǎo*, 抓大放小). Small and medium scale SOEs and COEs were particularly affected by this process. China's local governments, dealing with an increasing share of loss-making local enterprises, jumped on the bandwagon. Shen and Ma (2005) recounts the push for large-scale privatization run by local governments in the Sunan area. In 1999, 81,6% of Suzhou's domestically invested TVEs had

been through some type ownership transformation¹⁵⁷. Given the scale of ownership transformation in Sunan, and in Suzhou in particular, the scholars (Shen and Ma, 2005) believe the term ‘Sunan model’ has lost its meaning.

Amid the privatization impulse of the 1990s, China also moved decisively in its strategy of ‘opening-up’ to global markets. In particular, the whole YRD was put under a privileged spot from the early 1990s onwards. True, already in 1985 the YRD was designated by the central government as an open economic region, and Suzhou thus was benefited. Observing the new trend of opening which was gathering momentum, the 7th Five Years Plan of Suzhou (1986-1990) envisaged a higher ‘economic internationalization’ and export-orientation of the city (Chung, 2003). Some of its counties or county-level cities aptly seized the opportunity already in the late 1980s and started to establish DZs and to attract FDI. But it was the establishment of the Pudong New Area in Shanghai in 1992 which gave Suzhou (and the whole YRD) a further impetus in engaging with foreign capital (Wang et al, 2015).

As one moves the discussion towards the internationalization of Suzhou’s economy it might be appropriate to focus on Kunshan, one of its county-level cities, to exemplify the point. In 1983, when the Sunan region was taking-off, Kunshan was lagging behind its neighbours in Suzhou, and thus came under pressure from the prefectural government to improve its performance. As early as 1985, then, Kunshan established a DZ, named Kunshan Economic and Technological Development District (KETDD), the first local government sponsored DZ in China. Up to this point, Chinese DZs were designated and funded only by the central government, and normally placed in first-tier cities. The success of the KETDD in attracting FDI and generating economic growth allowed Kunshan to have the central government upgrading the zone to a national level-status in 1992, facilitating Kunshan’s efforts in offering even further preferential policies (Wei, 2002).

The successful example of Kunshan was emulated by the rest of Suzhou. Several DZs sprung within the prefectural area, and the region soon became a hotspot of FDI, especially in the manufacturing sector. Following Kunshan, many new and locally-sponsored DZs were created, but also, and increasingly, centrally-sponsored ones were established. The Sino-Singapore Suzhou Industrial Park (SIP) is a case in point, established in 1994 with the crucial

¹⁵⁷ Of the total, 43,16% of the TVEs were auctioned or transferred and 28,84% became shareholding cooperatives.

participation of both the Chinese and Singaporean governments. In 2012 Suzhou accumulated 11 national-level DZs and 6 more provincial-level DZs. The city even surpassed Shanghai, its rich neighbour, in terms of foreign capital inflows (Wang et al, 2015).

While it is true that from the early 1990s onwards many local states thrived in attracting foreign capital, Suzhou's lure of FDI seems particularly successful. Much of it can be attributed to its proximity to and historical ties with Shanghai. The latter's economy evolved to a service-oriented structure, based on finance, and also upgraded its manufacturing sector to knowledge-based activities. Hence, many industries in Shanghai, either domestic or foreign-owned, relocated to Suzhou in search of lower labour and land costs (Airriess, 2008). Another factor was the then concomitant restructuring of global production networks (GPNs), especially in the information and communication technologies (ICT) sector. Taiwanese firms, acting as the key contractual suppliers for transnational companies (TNCs) from the triad (US, Europe, Japan), were searching for production sites which were simultaneously cheap and could fulfil the requirements of flexibility, scale, and speed of the TNCs. Suzhou, for its turn, was actively looking for a new dynamo for local growth, and Taiwan's foreign capital fitted very well the city's objectives: not only it could boost the local GDP already in the short-run (due to fixed capital formation), but could also provide tax revenues, a new source of employment, and foreign exchange. Suzhou appeared to be an ideal location for many Taiwanese companies and other TNCs, as it could offer cheaper inputs than first-tier cities, and also featured a local government willing to provide special treatments to global capital. As part of the inner logic of GPNs re-structuring at the time, most of the new investments in Suzhou were looking at the city as a mere export-platform, to be used to ship final products to global consuming markets. By the year 2000 Kunshan also received the central approval to establish an export-processing zone (EPZ), which features a faster and more streamlined process of export for foreign firms based in the city (Wang and Lee, 2007).

One can safely argue that Suzhou managed to transition from the canonical 'Sunan model', based on domestically-invested COEs, to an export-oriented strategy, based on foreign capital. As such, the role of Suzhou's government has also changed, from one of more direct participation in industrial production through the development of its COEs to one of facilitating local growth through foreign capital-friendly policies, aiming at the attraction of FDI in manufacturing activities (Chung, 2003; Shen and Ma, 2005). After privatizing most of its TVEs, Suzhou bet in WFOEs, joint-ventures and shareholding companies (Wei, 2002).

One still should recall the political-administrative fragmentation of Suzhou: In the early 1980s there existed six counties apart from the city proper. This structure evolved, with many counties being upgraded to the status of county-level cities. These are: Kunshan, Changshu, Taicang and Zhangjiagang¹⁵⁸. In spite of the ‘city-leading-county’ (*shì guǎn xiàn*, 市管县) system, which grants Suzhou the administrative leadership over them¹⁵⁹, these cities are by themselves powerful economic units. The greater economic power these county-level cities have¹⁶⁰, coupled with the prevailing model of development Suzhou has forged – based on attraction of FDI and low labour and land costs – propelled keen competition among lower levels of governments, not only in Suzhou but in the whole Sunan area (Wang and Lee, 2007). This is a historical legacy, as seen before. In the 1980s Suzhou’s (and Sunan) growth model could be characterized as ‘dispersed and duplicated’. In the 1990s there were attempts at centralizing and better coordinating economic restructuring, but the myriad of territorial units in the region works as a countervailing force (Chung, 2003). As Airriess (2008) realizes, the fact that the product structure of the three prefectural-level cities in Sunan are similar just attests this point.

6.2.3) Institutional complementarities in Nanjing and Suzhou, 2001-2015: a comparison

The description of the economic trajectories of Nanjing and Suzhou after 1978 depicts two cities trailing distinct paths of development. As it was highlighted, the historical legacies inherited played a fundamental role in the strategies both cities employed. Now it is time to employ the analytical framework developed in chapter five to explain the growth performance of both cities in the post-2001 period. As explained before, one should analyse the institutional realms highlighted in table 5.1, and observe whether or not (and how) the institutional forms at the city level are complementary to each other. Recall that for the *régulation* theory (RT) institutions are understood as the representation of broad socio-political compromises, and institutional forms the codification of a main social relationship,

¹⁵⁸ Of which, Kunshan is the most relevant one. As Wang and Lee (2007) puts it, ‘In essence, the major development pattern of Suzhou municipality has been the replication and diffusion of the Kunshan model’ (p.1879)

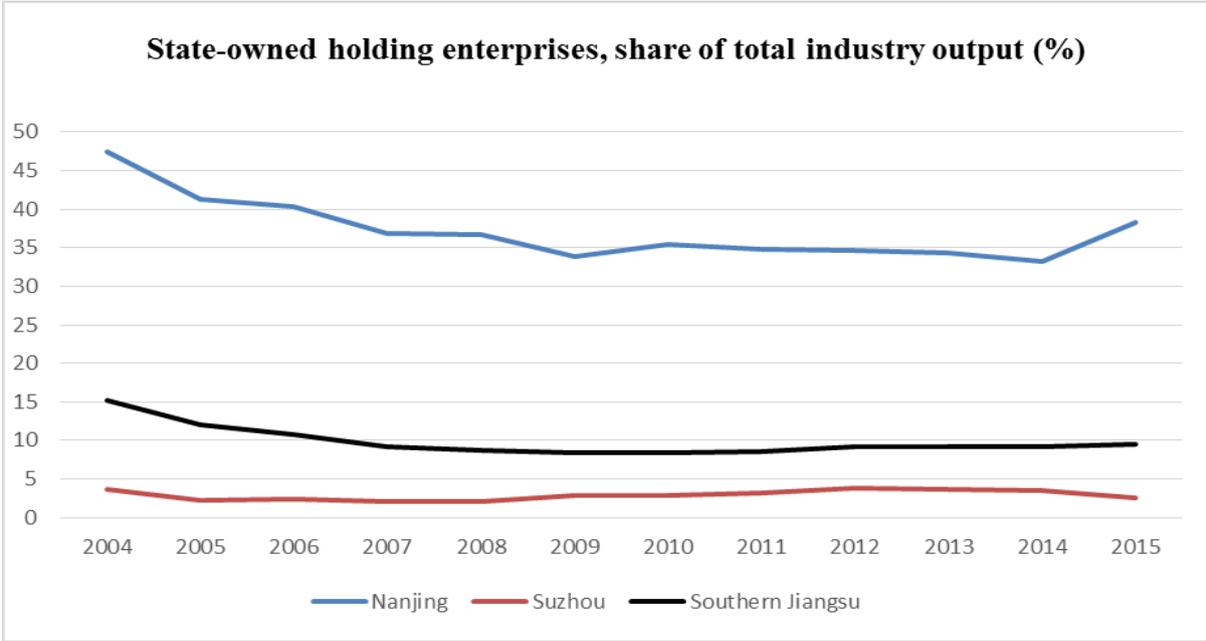
¹⁵⁹ In 2012 Wujiang county-level city became an urban district under Suzhou, in a move that can be interpreted as a strengthening of Suzhou’s administrative power.

¹⁶⁰ Bear in mind that currently Nanjing is divided into 11 urban districts, and no county-level cities. A similar structure is found in cities like Beijing and Shanghai (16 districts each). This administrative division gives the city a more centralized power, in comparison to Suzhou.

the basis of certain social regularities. Each of the institutional forms to be presented here, therefore, will symbolize broad social relationships, rooted in the particular history of the locality in case. The previous section of this chapter (6.2.2), by presenting the historical economic development of each city, allows us to better infer the type of institutional forms to be found for both Nanjing and Suzhou.

The first institutional realm to be analysed revolves around state ownership, to be measured by the share of state-holding industrial enterprises. From the previous section, it should be expected that Nanjing has carried out to the present a considerable portion of SOEs inherited from the past, while Suzhou should not display a considerable share of SOEs and COEs in its industrial structure. Indeed, as figure 6.3 shows, this is the pattern observed after 2001.

Figure 6.3: Output share of state-owned holding industrial enterprises: Nanjing, Suzhou and Southern Jiangsu (2004-2015)



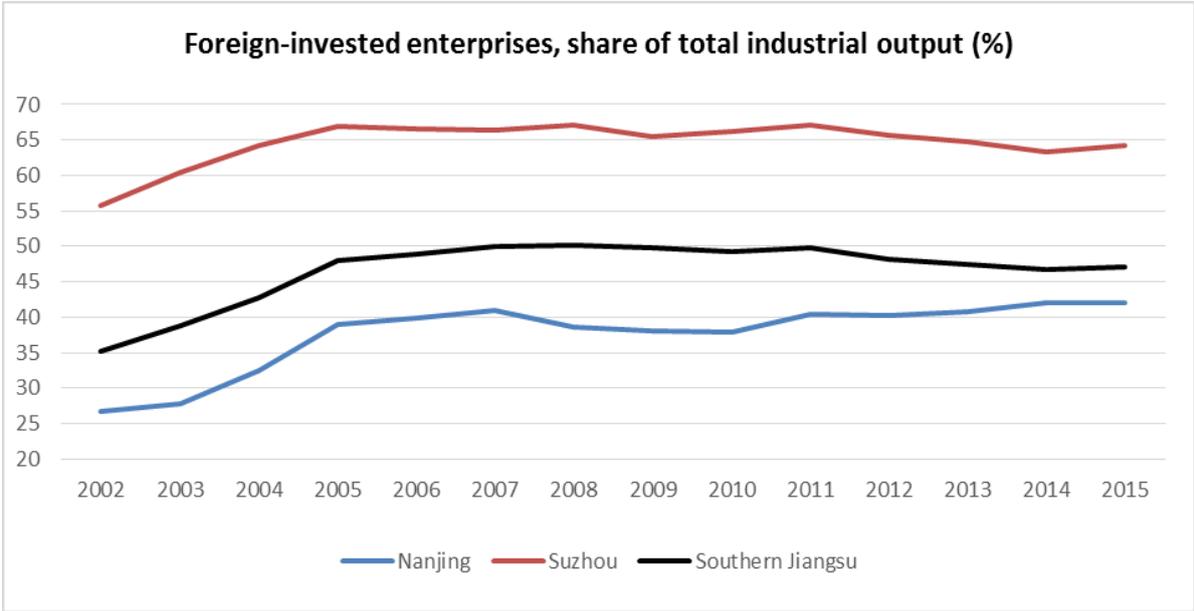
Source: Own elaboration, based on data from JSBS (various years)

As it can be seen, Nanjing has a remarkably high share of state-owned holding enterprises in the industrial sector, well above the average for Southern Jiangsu. Suzhou, on the other hand, displays an opposite trend. Again, this should not come as a surprise, given the massive privatization process experienced throughout the 1990s, which focused primarily in *small and medium* SOEs and COEs. The canonical ‘Sunan model’ was effectively dismantled, and gave birth to a distinct pattern of development in the region. Nanjing, given the large-scale nature

of its industrial SOEs, was to a reasonable extent spared from this process. As the data reveals, however, state-owned holding enterprises are already below the 50% threshold of the total industrial output, indicating the loss of importance of the traditional SOEs sector and the rise of other types of ownership. Crucially for this comparison, nevertheless, the gap between Nanjing and Suzhou is still remarkable.

The loss of importance of state ownership is also associated with the increasing prominence of foreign capital in Southern Jiangsu, especially after 1992. As seen before, both cities managed to attract a great deal of FDI, making use of the establishment of a plethora of DZs and industrial parks, with Suzhou being more successful in that matter. This movement was a response to the restructuring of GPNs, especially in the ICT sector, and to China’s increased opening to international markets and foreign capital. The WTO accession, in 2001, only exacerbated this trend. The scrutiny of the second institutional realm, engagement with foreign capital and foreign markets, follows logically. Figure 6.4 depicts the share of FIEs as part of the total industrial output:

Figure 6.4: Output share of foreign-invested industrial enterprises (FIEs): Nanjing, Suzhou and Southern Jiangsu (2002-2015)



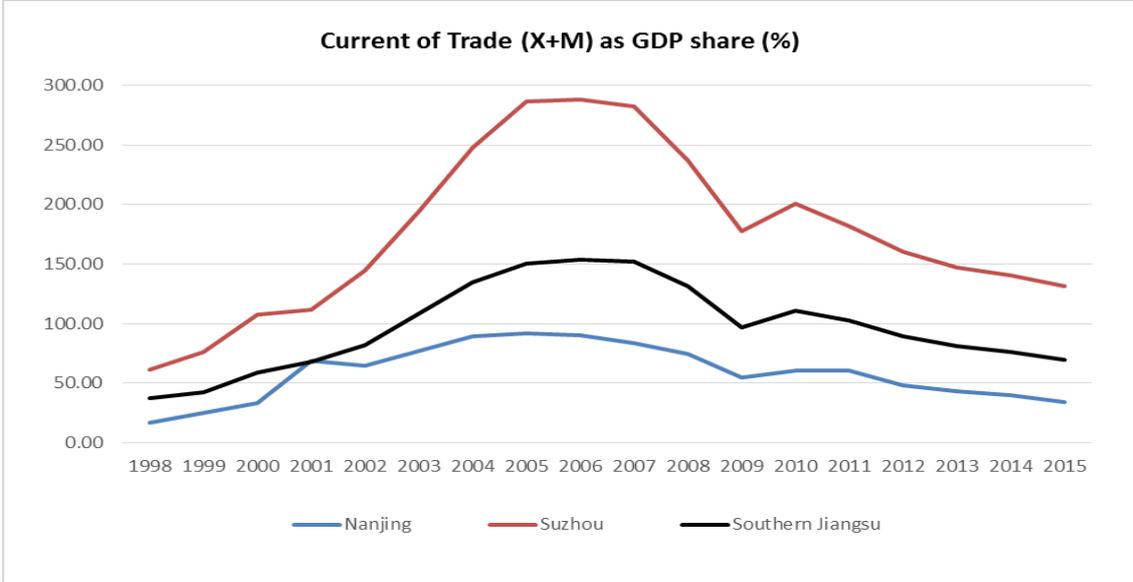
Source: Own elaboration, based on data from JSBS (various years)

As it can be seen, both cities possess a considerable share of FIEs in their respective industrial structures. Nevertheless, Nanjing and Suzhou present obvious differences in this realm. Whereas in Suzhou the share of FIEs has been always above 50%, and always above the

average for Southern Jiangsu, Nanjing displays more modest figures. This is a direct reflex of the distinct strategies pursued by both cities: as discussed earlier, Suzhou (and Kunshan in particular) was the trailblazer in the region when it comes to attracting FDI. Since the late 1980s the city has been taking the lead in luring foreign capital and in endeavouring to promote the ‘strategic coupling’ between its local characteristics (cheaper labour and land, geographical proximity to Shanghai and ports, establishment of DZs, EPZs etc) and the needs of foreign capital, especially of Taiwanese origin and concentrated in the ICT sector (Wang and Lee, 2007). Nanjing, on the other hand, has been the laggard when compared with Suzhou. As seen before, the city delayed its efforts in attracting foreign capital, and in the eyes of foreign investors Nanjing features less transparent open door policies and its local officials are less professional in this matter, when compared with Suzhou (Wei et al, 2010).

The overwhelming presence of FIEs in some Chinese regions is intimately linked with TNCs locational decisions and the restructuring of GPNs. The lure China offered was deeply related with its lower input costs and the ease to export. FIEs in China often were searching for a convenient location to assemble distinct parts and equipment and then ship the final product to global markets. As such, a higher presence of FIEs is expected to be matched with a higher share of exports as well. It is the nature of FIEs’s locational decisions, under this context, to utilize China as an export platform to the rest of world. Therefore, another indicator related to the second institutional realm, engagement with foreign capital and foreign markets, is a locality’s share of current of trade in its local GDP. Figure 6.5 depicts this data for both cities:

Figure 6.5: Current of trade as local GDP share: Nanjing, Suzhou and Southern Jiangsu (1998-2015)



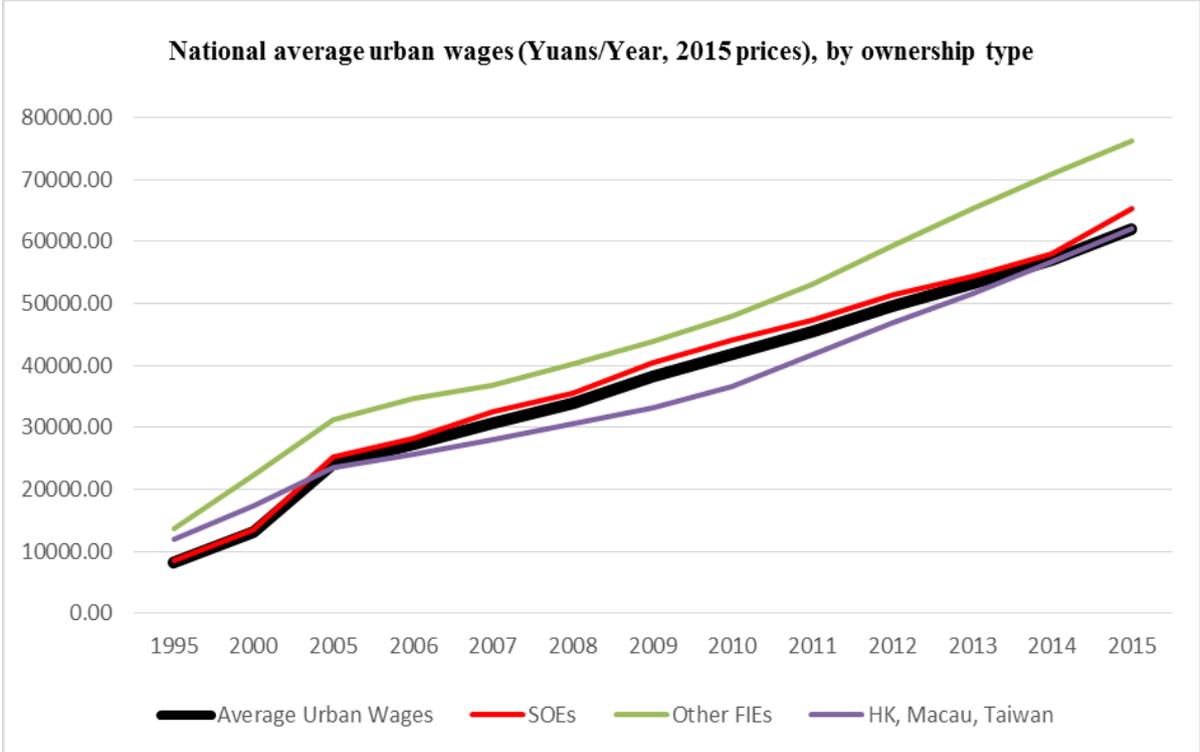
Source: Own elaboration, based on data from JSBS (various years)

As it can be seen, there is a great gap between the performances of Suzhou and Nanjing in this matter. If it is true that both cities display similar trends, marked by escalating numbers from the late 1990s up to the global financial crisis in 2008, followed by decreasing figures after that, the magnitude of the current of trade for both cities is very different. Suzhou, since the beginning of the series, has presented larger numbers. But after 2001, with the WTO accession, the gap between the city and Nanjing has just enlarged. If in 2001 the current of trade as share of local GDP in Suzhou was 1.6 times higher than the one in Nanjing (111,26% vs. 69%) the ratio increased to 3.37 in 2007 (282,5% vs. 83,83%). The global financial crisis has affected Suzhou much more severely than Nanjing in absolute terms: while the former has witnessed a reduction in its current of trade as share of its local GDP of 151, 35% (from 282,5% to 131,12%), the figures for Nanjing have decreased in ‘only’ 49,71% (from 83,83% to 34,11%). This is reflected in a much ‘flatter’ curve for Nanjing, while Suzhou presents more volatile numbers. This is just an echo of Suzhou’s higher dependence on FIEs whose strategy is to use the city as an export platform. In other words, quantitatively speaking Suzhou presents a degree of engagement with foreign markets and foreign capital of markedly distinct magnitude than Nanjing. The average line of Southern Jiangsu, always positioned in between the performance of both cities¹⁶¹, attests to this characterization.

¹⁶¹ With the exception of 2001

As alluded above, many FIEs have on labour costs one of the key determinants in their locational decisions. The restructuring of GPNs, especially when commanded by Taiwanese firms, was driven in part by escalating wages in there and the allure of cheaper labour in mainland China. Hence, one is invited to analyse the third institutional realm, labour markets and the wage-labour nexus. As it is well-known, Chinese larger and wealthier cities attract substantial inflows of migrant workers, normally lured by jobs at the manufacturing sector. With a large supply of labour from agriculture, urban firms are able to increase employment without raising wages substantially. While wages seem to have been growing very slowly until the mid-1990s, in the 2000s urban wages started to experience an upward movement (Freeman, 2015; Li et al, 2012). Figure 6.6 below depicts this trend up to 2015, separating the data by ownership status:

Figure 6.6: National average urban wages, by ownership type (1995-2015)



Source: Own elaboration, based on data from NBS (various years). Data deflated using China’s national CPI

The data presented shows an impressive trend of rising urban wages in China. Interestingly enough, one may observe that there are differences in the levels of wages when the ownership of firms is taken into account. SOEs have wages normally only slightly above the urban average. Foreign-invested enterprises (FIEs), tellingly, present very distinct behaviour according to the home country of the investments: Units with funds from ‘Hong Kong, Macao & Taiwan’ pay normally below the urban average, especially during the 2006-2013 period.

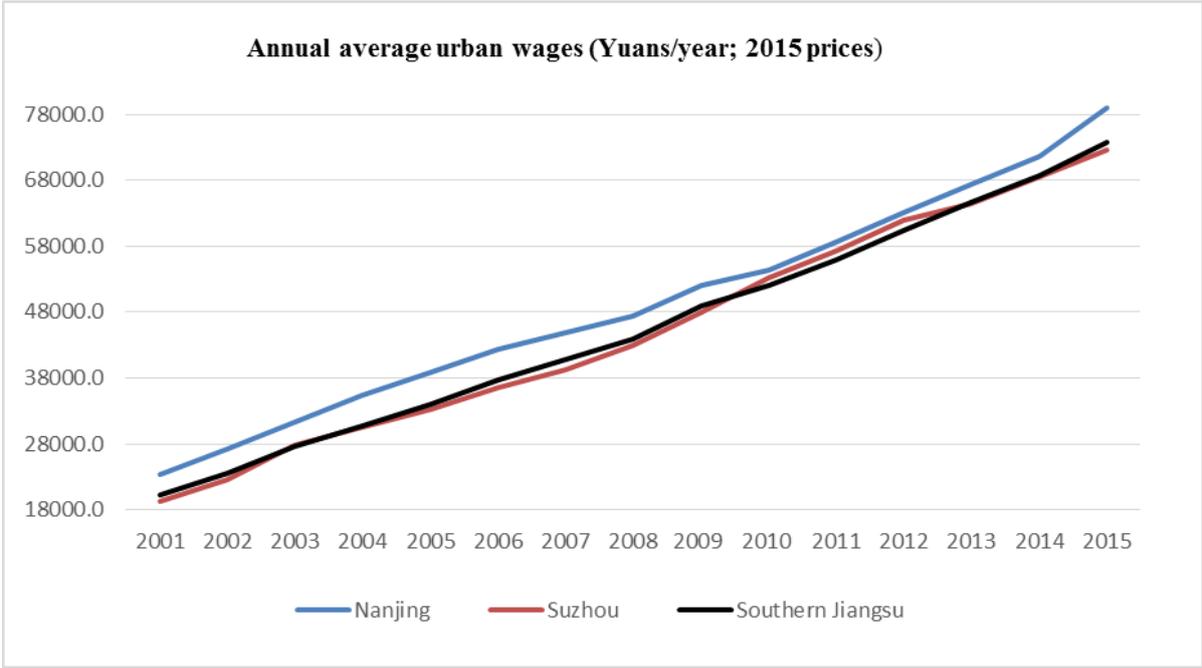
‘Other FIEs’ (i.e., foreign-invested enterprises from countries other than the previous three) on the other hand, offer the highest compensation.

The data presented in Figure 6.6 above illustrates a characteristic of Chinese labour markets already detected by some scholars. Zhao (2002) argues that labour markets in China are segmented, and that unskilled workers in FIEs in general (regardless of home-country effects) earned significantly less than those in the state sector, but skilled workers earned more in FIEs than in the state sector. Unskilled workers, given China’s large supply of agricultural workers and large rural-urban migration, are more abundant in low-productivity and/or informal sectors, allowing FIEs easy access to unskilled workers. However, FIEs must compete with the state sector for skilled workers, driving wages of skilled workers in the foreign sector upwards. The nature of this segmentation means that unskilled workers are better-off at SOEs, but skilled workers are better-off at FIEs.

In a more recent study, Demurger et al (2012) finds out that in 2002 and 2007, FIEs in general (regardless of home country effects) present average wages slightly higher than SOEs, but also are characterized by a wider distribution of earnings. This result should be expected, given the disparate performance of FIEs from ‘Hong Kong, Macao & Taiwan’ and ‘other FIEs’. Indeed, Demurger et al (2012) reports that the Gini coefficient for hourly wages is higher for FIEs in general than for SOEs. In general, FIEs pay better wages, but they are unevenly distributed among workers of different educational levels. SOEs pay comparatively higher wages to low-wage earners while FIEs offer higher wages to the top percentiles of the wages distribution.

With this scenario in mind, the data for urban wages in Nanjing and Suzhou shall be presented:

Figure 6.7: Average urban wages: Nanjing, Suzhou and Southern Jiangsu (2001-2015)



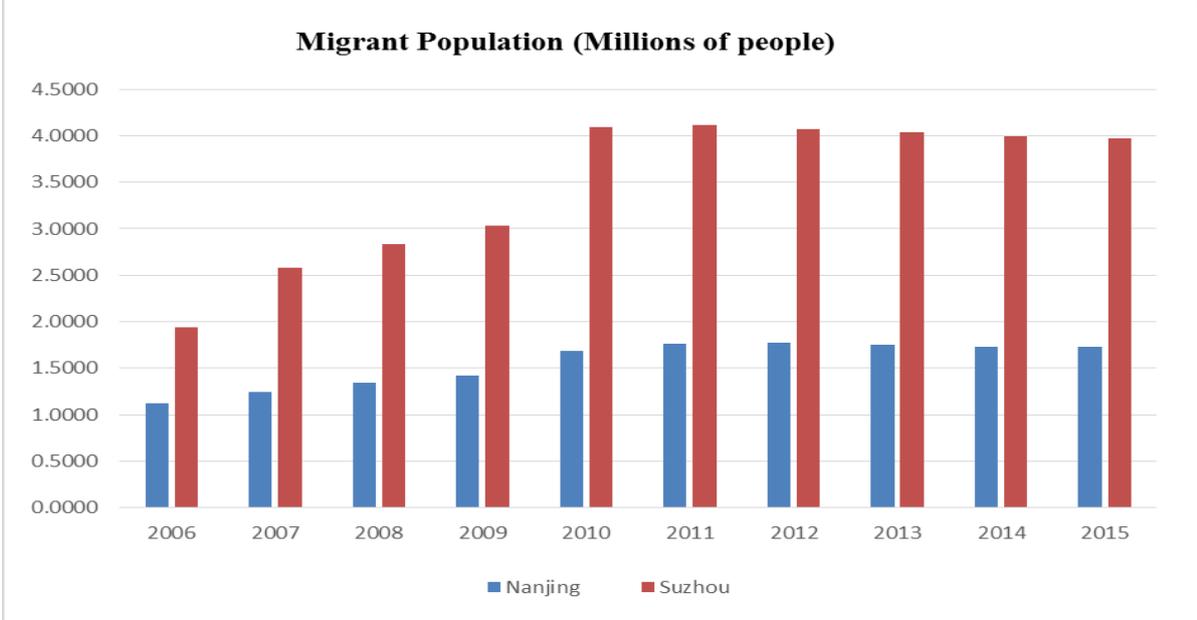
Source: Own elaboration, based on data from JSBS (various years). Data deflated using Jiangsu’s CPI.

Apart from the expected steep trend on rising wages for both cities, it becomes noticeable that Nanjing consistently offers higher wages than Suzhou. Moreover, during most of the period the data for Suzhou is below the average for Southern Jiangsu, while Nanjing is always superior to the average. This pattern, of Suzhou and Nanjing representing opposite archetypes of structural-institutional characteristics in the broader Southern Jiangsu region, has already been observed in the previous institutional forms presented. As seen before, Suzhou has been counted with an overwhelming amount of FDI from Taiwan. Kunshan, particularly, has been dubbed ‘small Taipei’ by many (Wang et al, 2015: p.62). The investments received by Suzhou often were part of a broader re-structuring of GPNs in the ICT sector, and the lure of the city was its cheap labour and land, as well as a local government very willing to respond to the demands of foreign investors and create an institutional environment very conducive to exports. The number of DZs and EPZs, as discussed before, attest that. Hence, the type of foreign capital attracted by Suzhou was precisely looking for relatively lower labour costs, and hence data from figure 6.7 above should not be surprising.

Another aspect of local labour markets one should pay attention to is the number of migrant workers a city is able to attract. While it is common sense to write about the magnitude of the inflow of rural-urban migration, this inflow is unevenly distributed in urban China. Normally,

cities featuring a large share of manufacturing enterprises, especially in labour-intensive sectors, tend to receive more migrant workers. Indeed, according to Cai et al (2008) 40.3% of China’s migrant workers were based in manufacturing sectors. Figure 6.8 estimates the number of migrant workers¹⁶² in Nanjing and Suzhou:

Figure 6.8: Average migrant population: Nanjing and Suzhou (2006-2015)



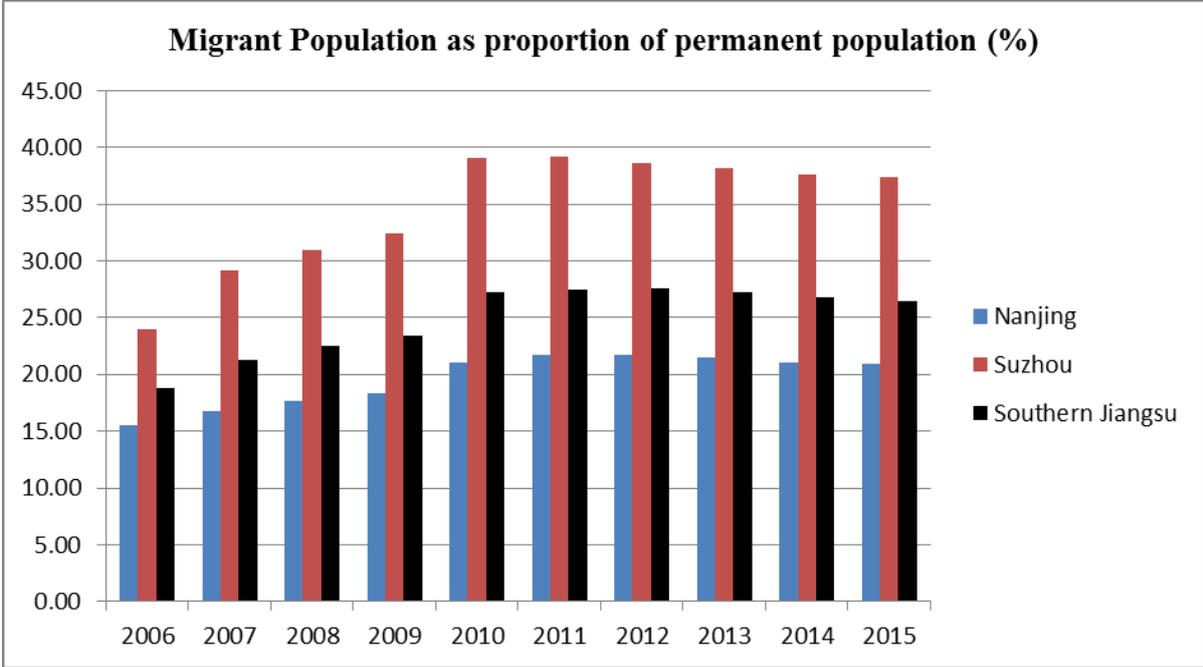
Source: Own elaboration, based on data from JSBS (various years)

While both cities attract substantial numbers, the gap between them is very pronounced. Nanjing’s peak population of migrant workers was registered in 2012, with roughly 1.77 million. Suzhou, on the other hand, has never recorded less than 1.93 million (in 2006) and had a peak of roughly 4.12 million (in 2011). When one keeps in mind the contrast between the productive structures of both cities this gap becomes fairly understandable. Suzhou, dominated by FIEs aiming at making use of cheap labour and betting on exports for the world markets, has expectedly attracted more migrant workers. Nanjing, on the other hand, is less export-oriented, and has on average higher wages, making the city less attractive to this type of foreign capital prevalent in Suzhou. Finally, it is possible to present the data on migrant workers as a share of the permanent population. This strategy allows us to control for the city size¹⁶³ and also to compare both cities with the average of Southern Jiangsu.

¹⁶² See Appendix 7 for the method employed in calculating the migrant population

¹⁶³ One could argue that it may be that Suzhou is just larger than Nanjing, attracting more people in general, in absolute terms.

Figure 6.9: Migrant population as a proportion of the permanent population: Nanjing, Suzhou and Southern Jiangsu (2006-2015)



Source: Own elaboration, based on data from JSBS (various years)

As is evident, even as a proportion of the city’s permanent population Suzhou presents considerably higher figures. What is more, when Southern Jiangsu is included, the same pattern seen before emerges: Nanjing and Suzhou seem to typify two distinct patterns of structural-institutional characteristics in the region, one well below and the other well above the average.

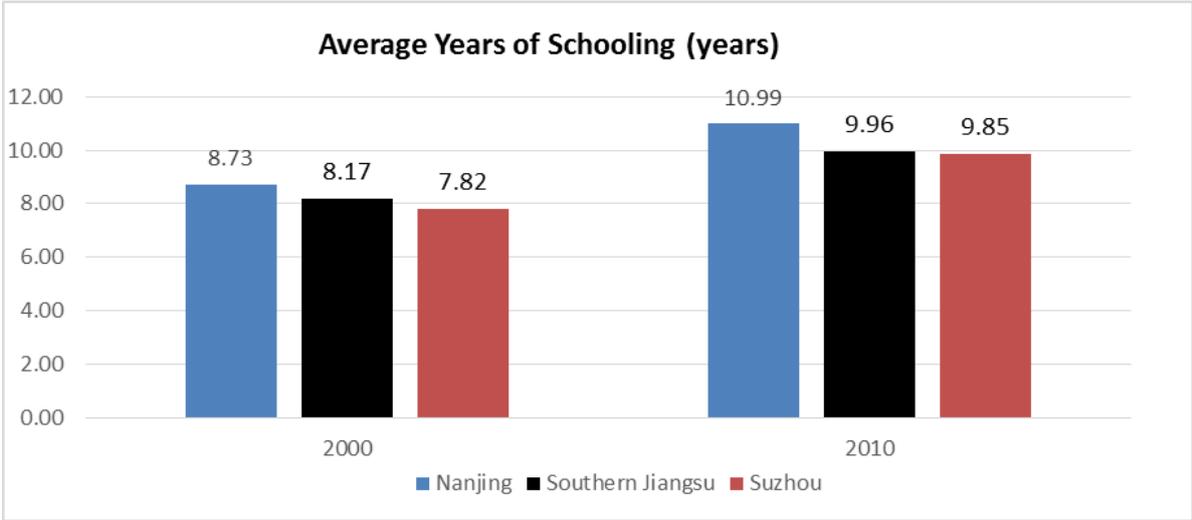
This discussion on labour markets leads us to the fourth institutional realm to be analysed: the education sector. It has already been indicated that China’s labour market is segmented, with wage gaps at the state and foreign sectors, and that unskilled workers are better-off in the former while skilled workers are better-off in the latter. When it comes to educational levels, Cai et al (2008) asserts that returns to schooling were low in China until the early 1990s, but after the end of this decade it started to increase markedly. In particular, returns to higher education escalated even faster than the average. According to the researchers, while in 1988 college graduates earned only 12.2% more than senior high school graduates, in 2001 they earned 37.3% more. Moreover, while this increase in returns for higher education was spread across all subgroups¹⁶⁴, the authors found that non-SOEs and non-COEs enterprises have

¹⁶⁴ Sex, experience, ownership type, sectors and regions

witnessed greater rises in this matter. The research by Demurger et al (2012) confirms this trend with more recent data: In 2002 and 2007 returns to education were significant for the whole Chinese economy, but were the highest in FIEs. Demurger et al’s (2012) research also suggests that in SOEs seniority remains an important factor in wage determination in the sector, most likely reflecting the legacies of the Maoist Era. FIEs, on the other hand, are found to not present significant returns to experience, most likely because workers in there tend to be younger and have less experience than in SOEs.

Nanjing and Suzhou display distinct outcomes of educational indicators. To start with, the basic indicator of average years of schooling shall be presented.

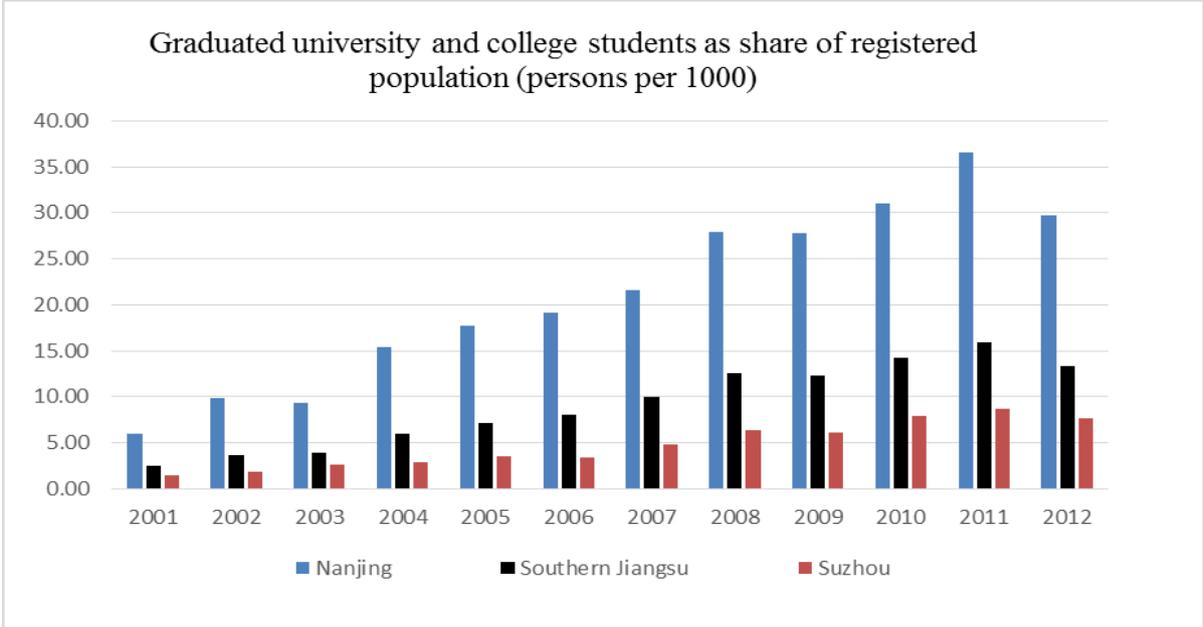
Figure 6.10: Average years of schooling: Nanjing, Suzhou and Southern Jiangsu (2000 and 2010)



Source: JSBS (2002) and NBS (2010b).

The data reveals Nanjing consistently with a higher average of years of schooling. Both cities increased their figures in roughly 26% in the period, with Nanjing keeping its initial advantage. Another useful indicator is one related to higher education specifically. As just seen, the returns to higher education in China experienced a notable increase after the late 1990s. Hence, data on the yearly number of graduated students from university and colleges becomes of great relevance in this study. Figure 6.11 follows:

Figure 6.11: Number of graduated university and college students per year: Nanjing, Suzhou and Southern Jiangsu (2001-2012)



Source: Own elaboration, based on data from JSBS (various years)

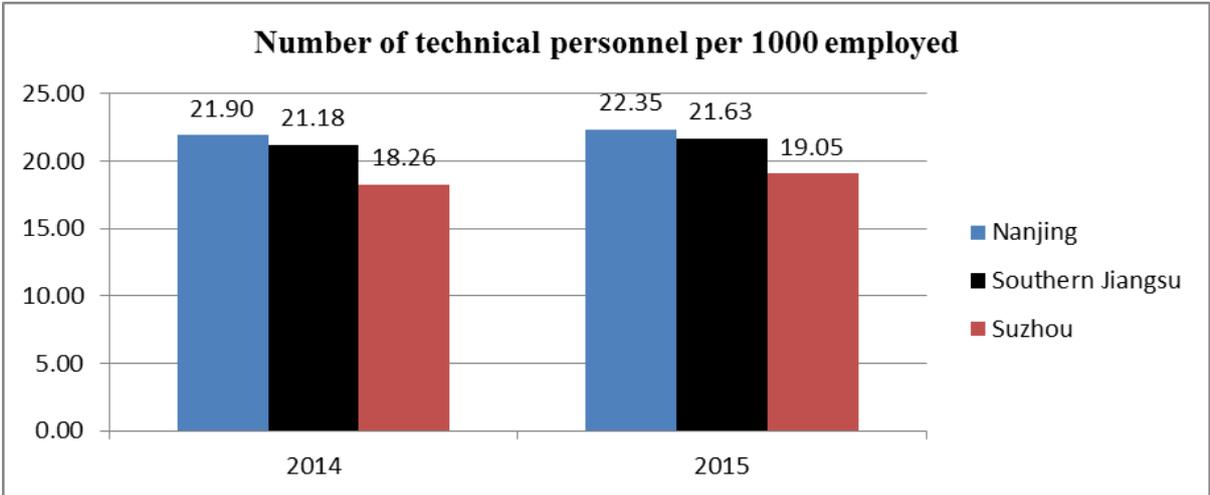
It is obvious from the figure that Nanjing graduates considerably more students from higher educational institutions (HEIs). And just like in the previous figure, one can once again notice that the average for Southern Jiangsu stands in between the two cities, denoting a Nanjing featuring better educational figures while Suzhou lagging behind the whole region.

These quantitative indicators resonate well with other qualitative studies regarding education and human infrastructure in general in both cities. It has already been noticed that Suzhou had no leading universities or national-level research centres (Wang et al, 2015). The fact that Suzhou is a prefecture-level city with less status than provincial capitals or centrally administrated municipalities hinders its potential for central support in this realm. Indeed, normally Chinese leading universities and research centres are located either in provincial capitals or centrally administrated municipalities (Wei et al, 2009). The fact that, in spite of these weaknesses, Suzhou managed to grow very fast from the early 1990s onwards and even to become a ‘model’ to be emulated by other localities in China is of course related to its developmental strategy, centred on large influx of FDI and export-promotion. A crucial matter in this strategy is the *type* of FDI the city attracts, and how to make best use of them. The lack of top-level HEIs and poorer educational figures seriously undermines the city’s

ability to take advantage of knowledge inflows from FIEs and to promote indigenous innovation.

Suzhou’s strategy, naturally, is connected to the nature of the local labour markets. Most of the FIEs in Suzhou, in particular the ones coming from Taiwan, were lured by Suzhou’s low labour costs, and not by its potential for innovation or R&D-related activities. Indeed, Suzhou receives a large influx of migrant workers, and offers lower wages than Nanjing and normally lower than the average for Southern Jiangsu. The data on educational indicators dovetails this scenario. A final indicator of the education sector revolves around the relative size of the specialized workforce¹⁶⁵ in both cities:

Figure 6.12: Number of technical personnel per 1000 employed: Nanjing, Suzhou and Southern Jiangsu (2014-2015)



Source: Own elaboration, based on data from JSBS (2015 and 2016)

Due to data limitations, the figures provided are only for 2014 and 2015. Nanjing’s workforce seems to have a higher share of technicians and skilled workers than Suzhou. The latter, in its turn, again is below the average for the region. This is not to say that Suzhou’s productive structure does not require skilled and qualified workers: in his study of Suzhou and Kunshan, Wei (2002) reports that FIEs there established tend to hire college graduates or cheap rural migrants, creating, thus, a dual labour market. His findings conform well to the nature of China’s segmented labour markets, as seen before. FIEs in Suzhou do hire college graduates, especially for managerial and white-collar positions, while simultaneously relying on the city’s supply of cheap labour.

¹⁶⁵ The sum of engineers, agricultural technicians, scientific research personnel, health technicians and teaching staff

In fact, being aware of its lack of top-level universities and overreliance on cheap labour, Suzhou's leadership has been trying to promote policies aiming at improving the city's higher education standards and its innovation capabilities. As early as 1990, Kunshan was already investing in the formation of scientific and technical workers (Wei, 2002). Later on, Suzhou took a series of initiatives to improve innovation capabilities: it established an array of 'creative platforms' (science parks, software's testing centres etc.), incentives for the high-technology industry (development funds, venture capital, funds for overseas students, services for innovation and firm formation etc.), and created a higher educational district to host local branches of foreign universities and research institutions (Wei et al, 2009). These policies certainly have the potential to boost Suzhou's higher educational indicators and its indigenous innovation prospects, but the research conducted by Dennis Wei and his associates (Wei et al, 2009; Wei et al, 2010) suggests that up to now the city still has a rather weak capacity of R&D.

Nanjing, as the data on the previous three figures reveals, leads the comparison in terms of educational indicators. Indeed, while Nanjing features 54 HEIs, Suzhou contains only 21. When it comes to qualitative indicators, Wei et al (2009) reminds us that in Jiangsu almost all top-ranked universities and research centres are located at the provincial capital. Moreover, Nanjing has 8 institutions part of the '211 Schools Project'¹⁶⁶, while Suzhou has only 1. Currently, Nanjing can be regarded as possessing the most developed university system in the YRD, and its share of population with a university degree, at roughly 26%, surpasses even the figure for Shanghai and is much higher than Suzhou's (15%) (Klibaner et al, 2014). However, given its outstanding number of university's graduates, Nanjing 'loses' many of its skilled professionals to cities like Shanghai and other tier 1 cities. In order to deal with this domestic 'brain drain' problem, in 2014 the city government announced that a Nanjing *hukou* would be granted to all graduates of local universities (Klibaner et al, 2014). Alongside the establishment of numerous DZs, Nanjing also initiated the development of some 'university towns'¹⁶⁷, with the objective of attracting overseas returnees and to compete with other key

¹⁶⁶ The '211 Schools Project' is a national-level initiative with the intention of raising the research standards of Chinese universities. In order to be part of the project, universities must meet certain scientific, technical, and human resources standards. In 2008, these universities consumed 70% of the national scientific research funding. See People's Daily Online (2008).

¹⁶⁷ There are three 'university towns' in the city, located in Pukou, Jiangning and Qixia urban districts. They were established in 1987, 2002 and 2002 respectively.

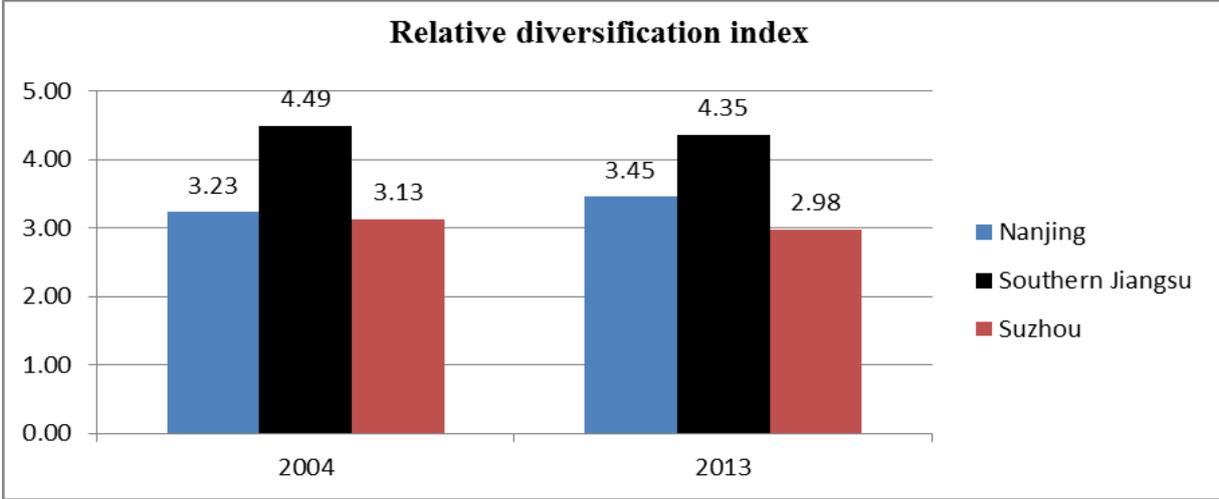
cities in the YRD, like Hangzhou and Shanghai. This is part of a broader strategy to become an innovation hub and to facilitate the development of high-tech industries (Wei, 2015b).

The next institutional realm to be analysed delves more specifically on the productive structure of both cities. In particular, the degree in which the productive structure of a locality is diversified and/or specialized will be gauged. Recall from chapters two (section 2.2.2) and five that this debate borrows explicitly from the mainstream literature on the regional branch of mainstream endogenous growth theories. As explained formerly, the objective here is not to assert which particular characteristic (diversified vs. specialized) is more conducive to economic growth *per se*, but to understand how these characteristics are complementary to the other institutional forms under scrutiny and how they are the product of path-dependent processes.

As discussed previously, Suzhou had to reinvent its growth strategy during the 1990s due to the limitations and shortcomings of the ‘Sunan model’. The new strategy, based on the attraction of FDI and exports, matched very well the concomitant restructuring of GPNs, especially in the ICT sector, which had in Taiwanese firms a lynchpin of the sectorial global value chains. Nanjing, on the other hand, took a less enthusiastic attitude towards foreign capital, and has not attracted so many FIEs, as seen before. To be sure, this was to a great extent due to its inherited industrial base, centred in large-scale SOEs in traditional sectors such as chemicals, iron and steel and automobiles. As such, when China started its more incisive opening-up strategy, Nanjing could rely on a more consolidated and diversified industrial base. Contrariwise, Suzhou had to deal with a model of economic growth already in its twilight, and seized the opportunity to remake its growth strategy. Figure 6.13 below shows the relative diversification index¹⁶⁸ for both cities, in two different points of time:

¹⁶⁸ If economic activity in the city under consideration is fully concentrated in a sector, the index equals 1. The index increases as activities in the city become more diverse. It is important to correct this measure for differences in sectorial output shares at the national level, as some sectors may be over-represented in the whole country. The *relative* diversification index, thus, sums the absolute value of the difference between each sector’s share in local output and its share in national output, for all sectors, for each city. In this index, following the Kaldorian premise of ‘manufacturing as the engine of growth’, only manufacturing sectors are being considered, leaving aside services, agriculture, construction, mining and public utilities. See the Appendices for a full list of the manufacturing sectors considered, as well as their respective output share for each city.

Figure 6.13: Relative diversification index: Nanjing, Suzhou and Southern Jiangsu (2004 and 2013)

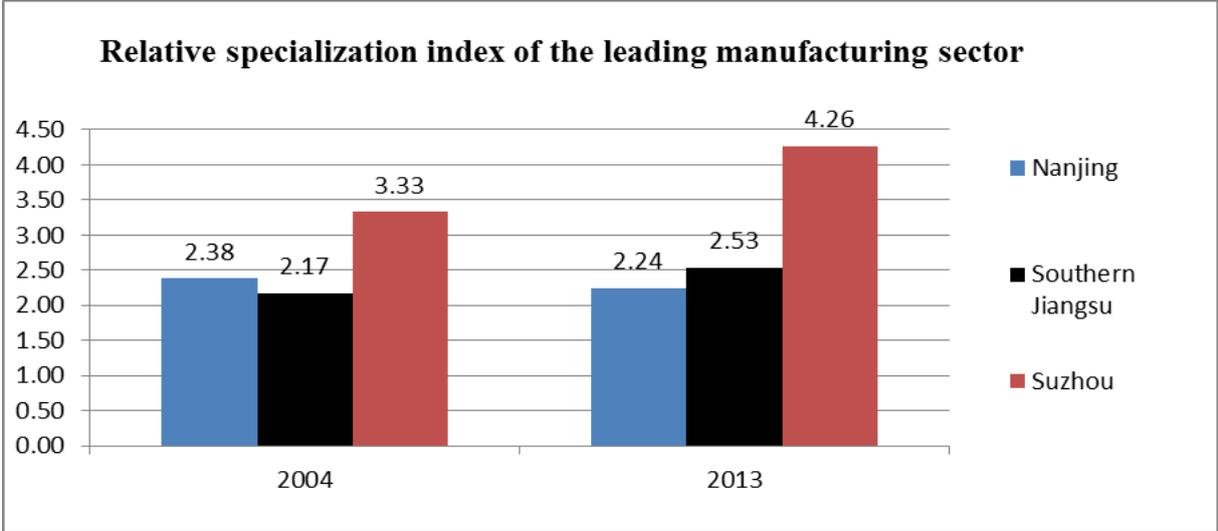


Source: Own elaboration, based on data from JSBS (2014), JSBS (2004) and NBS (2005 and 2014)

As it can be seen, Nanjing has a more diversified industrial structure, in both periods of time. What is more, the gap between Nanjing and Suzhou enlarges from 2004 to 2013, as the city becomes more diversified and Suzhou actually becomes less diversified. Tellingly, both cities are below the regional average, denoting that in spite of important differences between them both cities are relatively specialized in some sectors. Having said that, it becomes imperative to analyse the relative specialization index¹⁶⁹ of the leading manufacturing sector in each city. Figure 6.14 will show the figures for the relative specialization index¹⁶⁹ of the leading manufacturing sector in each city. It turns out that both cities have the same sector, ‘computer, communications and other electronic equipment manufacturing’, as their leading manufacturing sector.

¹⁶⁹ The higher the index, the higher is the output specialization in that sector. As certain sectors account for a larger share of the overall national output than others, the relative index is calculated to correct for this. The share of each sector in local output is divided by its share in national output. See the Appendix for more details.

Figure 6.14: Relative specialization index: Nanjing, Suzhou and Southern Jiangsu (2004 and 2013)



Source: Own elaboration, based on data from JSBS (2014), JSBS (2004) and NBS (2005 and 2014)

Suzhou, as expected, has the highest index for the sector. One cannot overlook the fact that the term ICT, often employed in business analysis and in academic papers alike, is vaguely defined. According to Zuppo (2012) in her literature review on the usage of the term ‘ICT’, the reference to ICT as an economic sector is understood to include manufactured goods like electronic displays, various types of cable, instruments for navigating, cell phones, wireless modems and access points, and numerous other types of electronic and wireless connectivity-related devices. The term ICT does not appear in the official Chinese classification of manufacturing sectors, but it is safe to assume that the ‘computer, communications and other electronic equipment manufacturing’ is the closest in meaning and in products manufactured with the idea of an ICT sector as defined by Zuppo (2012). Hence, that is not a surprise that this is the leading sector in Suzhou. Moreover, Suzhou’s specialization index actually increases throughout time, denoting an increasing specialization in this sector. This is the reflex of the city strategy of attracting Taiwanese enterprises which were looking for cheaper labour amid the restructuring of GPNs in the sector.

Nanjing, in its turn, also has a relatively high specialization index in 2004 (above the region’s average), but later experienced a decline and in 2013 it was already below Southern Jiangsu’s average. The data reveals that Nanjing also has an important base of ICT companies, and managed to modernize its industrial structure. Recall that Nanjing also is home of a great number of FIEs, as figure 6.4 depicted: the share of FIEs in the city’s industrial output

reached roughly 42%. While considerably lower than Suzhou's share, these are not negligible numbers. In addition to that, recent research (Klibaner et al, 2014) indicates that Nanjing has been trying to upgrade its industrial base, moving towards advanced electronics and aerospace sectors. For instance, by 2014 the aircraft manufacturer AVIC (a SOE) was establishing a new plant in Jiangning Development Zone. Moreover, Nanjing has also a more developed services sector in relation to Suzhou. This is partly due to the city's sizable higher education and related research sectors and its investments in the software sector¹⁷⁰.

Finally, it is time to delve at the final institutional realm: financing. The Chinese financial system is still heavily dominated by banking institutions. According to Yi and Guo (2015), the total size of the financial sector, measured by total assets in 2011, reaches the figure of 260% of China's GDP. The banking sector, in particular, corresponds to 90% of total assets of the financial sector. The Chinese banking system has the four state-owned major commercial banks¹⁷¹ as its main pillar, corresponding to 43.3% of the total assets of the financial sector. The gradual reform and development of the system created other types of banking institutions and, in 2011, joint-stock banks amassed 14.8% of total financial assets whereas city commercial banks, normally controlled by local governments, followed with 8.1%. The system remains remarkably domestic-owned, with foreign banks amassing only 2% of the total of banking assets. In recent years other types of financing, especially corporate bonds, entrusted and trust loans and bank acceptance bills have increased in importance, but the major form of financing is still bank loans.

The banking system as whole has experienced fundamental changes from the early 1980s up to the present, including the strengthening of corporate governance, introduction of 'strategic' foreign investors, increasing transparency and prudential accounting standards. Finally, the 'big four' banks were listed in Shanghai and Hong Kong stock exchanges, imposing stricter market discipline, supervision and information disclosure on them. Many of the city commercial banks went through the same kind of market-oriented reforms (Yi and Guo, 2015).

¹⁷⁰ Nanjing's software sector was China's third largest by revenue in 2010, only behind Beijing and Shenzhen. The city even has some specific industrial parks for this purpose, like the Nanjing Software Valley.

¹⁷¹ The Industrial and Commercial Bank of China (ICBC), the Bank of China (BoC), the China Construction Bank (CCB), and the Agricultural Bank of China (ABC)

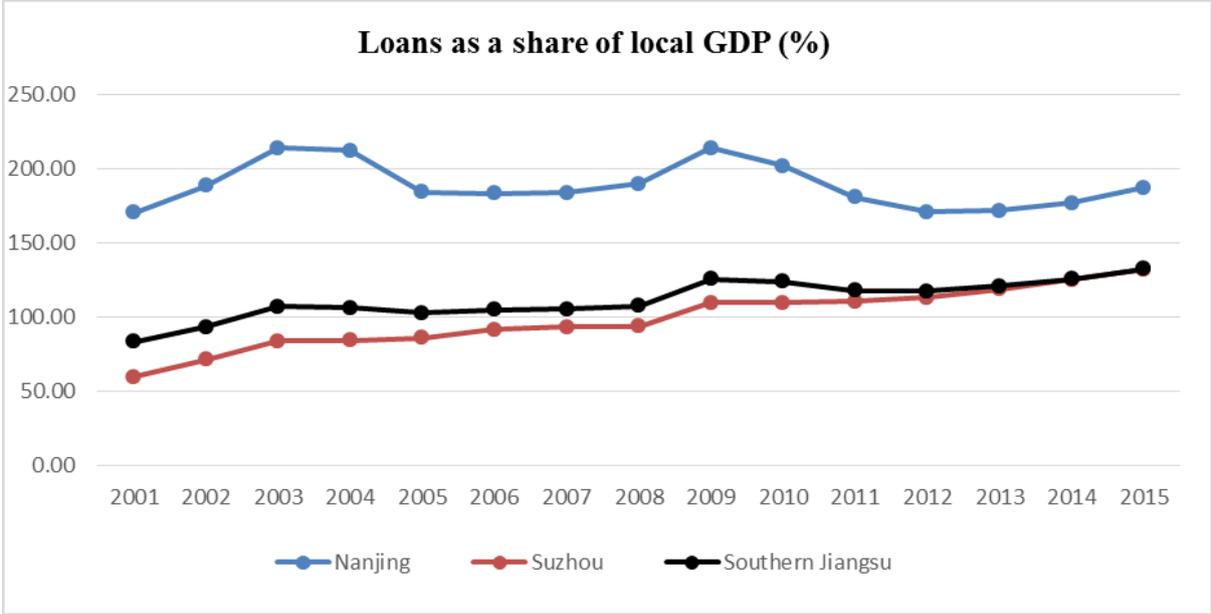
In spite of the undeniable trend of marketization in the sector, important restrictions and controls currently exist in the system. For example, deposit and loans interest rates are not fully liberalized, in effect creating an interest rate margin which can be managed by the government. This margin prevents excessive competition among banks and provides incentives for them to extend loans, supporting, thus, China's economic growth¹⁷². Moreover, there seems to be a consensus that in terms of loans allocations there is a bias towards investments rather than consumption activities, and towards large SOEs rather than to private small and medium enterprises (SMEs) (Yi and Guo, 2015).

An empirical study by Wang and Wang (2013) finds that, when analysing A-shares of local SOEs listed in China's stock markets, local SOEs with chairmen who have government backgrounds receive more bank loans and more governmental grants than those SOEs lacking chairmen with governmental background. These results suggest that the political connections of some SOEs may guarantee them more bank loans. Ohkuma's (2010) study, in his turn, when analysing provincial-level enterprises, suggests that there are strong barriers to cross-regional funds allocation, especially between banks and non-SOEs, which may prevent cross-regional lending to the non-state sector and thus undermine its development. The recent paper by Chen et al (2016), focusing on China's non-listed manufacturing enterprises (SOEs and large-scale non-SOEs alike), arrives at similar results. For the authors, private firms are perceived as riskier borrowers than SOEs, and lending to them do not generate gains associated to political connections. SOEs, on the other hand, are deemed less risky to lend to (as local governments are implicitly expected to repay loans in case of need), but also the bank manager may get a promotion through political connections when lending to local SOEs. FIEs, finally, are considered to rely little on China's financial system, because they can draw funds from their headquarters abroad.

Given this background, and considering the overwhelmingly distinct patterns of state-ownership in Nanjing and Suzhou, one would expect that the former would rely much more in bank loans than the latter. Figure 6.15 reveals the trends on banks loans as a share of the local GDP for both cities:

¹⁷² See Ju and Lo (2012) and Laurenceson and Chai (2001) for the supportive role China's state-led banking system has had in the country's economic growth.

Figure 6.15: Banks loans as share of local GDP: Nanjing, Suzhou and Southern Jiangsu (2001-2015)



Source: Own elaboration, based on data from JSBS (various years)

As expected, Nanjing has consistently higher bank loans as share of the local GDP. Nanjing’s strong base of large-scale SOEs, plus the possible political advantages of being a provincial capital dovetails the high figures presented above. Suzhou, on the other hand, is systematically below the regional average, with the exception of the final years of the series, when the city increases steadily its loans and catches-up with Southern Jiangsu’s average. This final catch-up might be related to recent policies aiming at spurring indigenous innovation in the city, which require state-directed funding.

Another aspect worth of mention is China’s stock market. While still limited in size when compared to the banking system, it is steadily enhancing its importance. The number of listed companies increased from only 10 in 1990 to 1088 in 2000 and to 2613 in 2014¹⁷³. But even in the stock markets the relevance of China’s SOEs is paramount, with the great majority of listed firms being large SOEs (Song, 2015). The prominent state power in the sector is not simply reflected by the dominance of SOEs, but also by the ‘going public’ process, which is heavily permeated by state control and regulations. For example, the Chinese central state has the power of determining the aggregate amount of new shares that can be issued annually (Allen et al, 2008). Later, the shares are distributed to provinces and only then assigned to firms willing to go public. In practice, that is a ‘quota’ system, which selects the amount of

¹⁷³ According to NBS (2015: table 19.16).

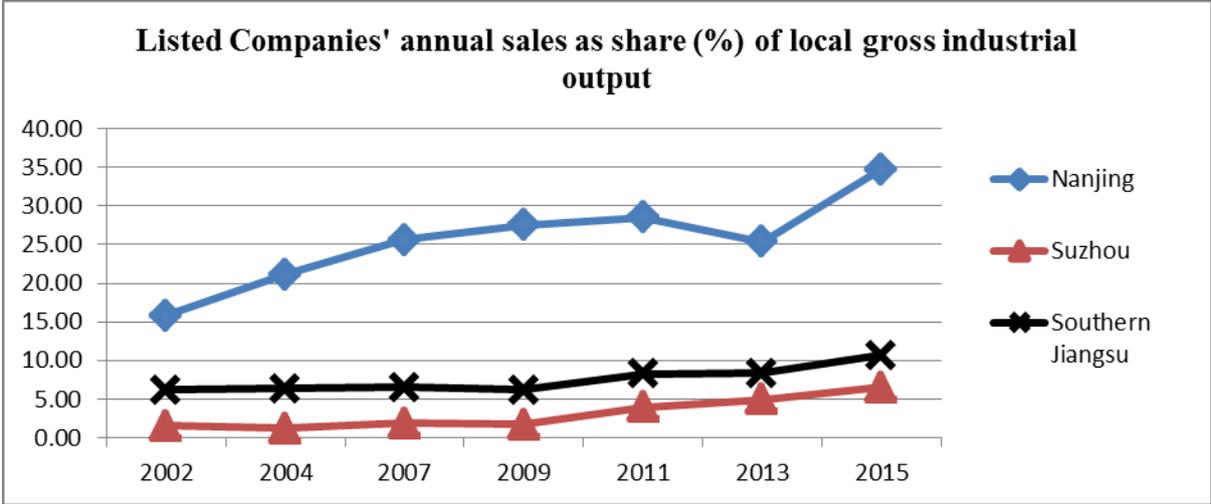
firms which are allowed to go public every year. As part of the process of applying for the quota, firms must disclose financial and accounting information and are subject to a lengthy evaluation process, and also must seek an underwriter in order to apply for the quota. These underwriters are all investment banks authorized to act as bookrunners by the government, and they are all state-owned (Francis et al, 2009). Given these institutional characteristics, for many scholars (Song, 2015; Allen et al, 2008) the Chinese stock market is permeated by favourable biases towards SOEs.

But that is not simply a matter of a dichotomy between SOEs and non-SOEs. The real matter is whether a firm is strongly politically connected or not. Surely, just by being an SOE means the firm may be politically connected, but different types of SOEs have different capabilities on this realm. Moreover, private firms, being aware of such institutional design, also attempt to forge connections with the relevant authorities. Francis et al (2009) conducts an empirical study on the relationship between political connectedness and the key characteristics¹⁷⁴ of an initial public offering (IPO). Francis et al (2009) measure the degree of political connectedness of firms by assessing their board members' background, contending that firms whose directors have or have held high-rank government positions are more connected than others. Given that the state remains the controlling shareholder of SOEs even after they go public, often members of the board of directors are also government cadres. This fact gives SOEs in general an advantage in terms of connections, but the study by Francis et al (2009) also concludes that SOEs that have the central government as its direct controlling shareholder are benefited more than SOEs which have other SOEs as its controlling shareholder (suggesting weaker ties with the central government). Moreover, private enterprises, aware of this scenario, are normally energetic in hiring former high-rank officials. Indeed, in Li and Zhou's (2015) empirical study, private firms whose at least one top manager is a former governmental official is defined as politically connected. Francis et al (2009) concludes that political connections affect positively the process of going public, and hence firms lacking it are more likely to search for global financing, rather than domestic markets. Similarly, Li and Zhou (2015) concludes that firms with stronger political connections are more likely to be approved for an IPO in the 'quota' system and less likely to be selected by the regulatory authorities for on-site auditing.

¹⁷⁴ Formation of offer prices, the degree of underpricing and other costs associated with going public.

Given this scenario, one may now turn to the data on Nanjing’s and Suzhou’s listed companies. Figure 6.16 below displays listed companies’ sales revenues as a share of the total gross industrial output. As expected, Nanjing presents consistently higher figures, always above the regional average, while Suzhou’s figures are always below the average:

Figure 6.16: Listed companies’ annual sales revenues as a proportion of gross industrial output: Nanjing, Suzhou and Southern Jiangsu (2002-2015)



Source: Own elaboration, based on data from the Wind Financial Terminal and JSBS (various years)

One obvious explanation for this pattern is that local firms in Nanjing are better connected with the authorities responsible for managing the ‘going public’ process in China. That might happen due to Nanjing’s higher share of SOEs, while Suzhou has virtually privatized all of its state-sector. Another possibility is that Nanjing’s local officials are simply higher up in the provincial hierarchy, given Nanjing’s status as provincial capital. Being better placed in the provincial government may guarantee preferential treatment to the companies under their purview. It is important to highlight that, according to Francis et al (2009), the ultimate power over decisions in this realm is made by provincial or local governments. Firstly, because these are the governmental levels which have the strongest interests to help politically connected firms; secondly, because after the central government determines the aggregate amount of new shares to be issued, provinces are responsible for assigning the quotas to firms. A final observation worth of mention is that, as just indicated, FIEs are considered to rely little on China’s domestic financial system, either because they can draw funds from their headquarters abroad or because they simply lack the political connections domestic firms may enjoy.

6.2.4) Institutional complementarities in Nanjing and Suzhou: a summary

After laying down the study of the six institutional forms for Nanjing and Suzhou one can now readily understand the interconnections between all of the forms and how they may jointly cohere at the city-level. Each of the institutional forms is connected to the other five, given the particular history and socio-economic legacies of Nanjing and Suzhou. It is the combination of each city’s six institutional forms - with their interrelationships reinforcing each other’s attributes - that renders both cities markedly distinct patterns of accumulation and growth. Table 6.2 summarizes the six institutional forms found in Nanjing and Suzhou:

Table 6.2: Summary of the institutional forms: Nanjing and Suzhou

Institutional Forms	Nanjing	Suzhou
1) State Ownership	Strong SOEs base	Weak SOEs base
2) Engagement with foreign capital and foreign markets	Less dependable on FIEs, exports and imports	Highly dependable on FIEs, exports and imports
3) Labour Markets and Wage-Labour Nexus	Higher wages; weaker attraction of migrant workers	Lower wages; stronger attraction of migrant workers
4) Education Sector	Higher average years of schooling, graduated students from universities and specialized workforce	Lower average years of schooling, graduated students from universities and specialized workforce
5) Productive Structure: Specialization - Diversification	-Lower concentration (ICT) -Higher Diversity	-Higher concentration (ICT) -Lower Diversity
6) Financing	Higher dependency on domestic financial system (both banks loans and stock markets)	Lower dependency on domestic financial system (both banks loans and stock markets)

Source: Own elaboration

Most meaningfully it is to spell out explicitly the interconnections of all the six institutional forms. Nanjing has received as a legacy from the Maoist period and initial years of reform and opening up a local economy dominated by large-scale SOEs. These enterprises were mostly concentrated in traditional manufacturing sectors, like chemicals, iron and steel and automobiles. Another important legacy is the higher educational system, one of the most developed in China. Much of these legacies can be explained by Nanjing’s position as a provincial capital, which means the city has traditionally enjoyed better political connections with the centre and received preferential investments in key industries and in HEIs. Given this ownership and sectorial industrial pattern, the city had enjoyed relatively higher real wages

and better educational indicators, featuring more university graduates and a more qualified workforce. These characteristics induced a somehow more conservative strategy of attracting FDI when China initially pushed for its opening-up strategy. As an YRD city, eventually Nanjing started to lure foreign investments, but to a considerably smaller degree than Suzhou. From the late 1990s onwards Nanjing also hosted foreign investments in the ICT sector, taking advantage of the then concomitant restructuring of GPNs. Indeed, the ICT sector became the one featuring the highest (relative) specialization index in the city. However, other sectors are also important for the city, from the traditional ones to more advanced manufacturing sectors like aerospace manufacturing. Moreover, the lesser relative importance of FDI to the city (especially from HK, Taiwan & Macao) means Nanjing does not receive an outstanding migratory inflow, like Suzhou does, and it is also less export-oriented. The traditional manufacturing base of Nanjing has had China's domestic market as its main source of demand, and therefore export demand has not become as important as it is for Suzhou. Finally, given the likely better political connectedness of Nanjing's firms and local officials, the city benefits from easier access to the stock market and the banking system. Hence, all the six institutional forms under scrutiny either reinforce each other or make up for possible deficiencies. An industrial base dominated by large-scale, domestic-oriented SOEs fits a labour market characterized by higher wages and less migrant workers and an educational sector marked by a more qualified workforce. These enterprises are not incisively engaged in cost-based competition in global markets, therefore do not requiring the kind of labour-intensive, export-oriented foreign investments. There is also no need to excessively concentrate the industrial production in one particular sector, as Nanjing can rely in other industries (inherited from its industrial base) and in the Chinese domestic market. Finally, possible efficiency deficiencies may be compensated by an easier access to finance, either through the banking system or stock markets. Table 6.3 summarizes the interconnections of the six institutional complementarities under scrutiny in Nanjing¹⁷⁵:

¹⁷⁵ The table should be read always following the rows. Each intersection represents one interconnection between the institutional form in the row and the one in the column.

Table 6.3: Complementarities of the six institutional forms in Nanjing

Institutional Forms	State Ownership	Engagement with foreign capital and markets	Labour Markets and Wage-Labour nexus	Education Sector	Specialization - Diversification	Financing
State Ownership	-	Inheritance of large-scale, domestic-oriented SOEs makes the attraction of FIEs and export promotion less imperative	SOEs features higher average wages than FIEs from Taiwan, Macau and HK, and are less dependable on migrant workers and cheap labour	SOEs (more capital-intensive, featuring higher wages and lacking a robust external demand) requires a better skilled workforce and top-level research centres as sources of competitiveness	Inherited a more diversified industrial base, dominated by SOEs in traditional manufacturing sectors	State ownership and local officials facilitating the going public of local companies and the access to bank loans
Engagement with foreign capital and markets	Foreign capital forms Joint-Ventures (JVs) with SOEs	-	FIEs in Nanjing are less dependable on cheap labour and export promotion	JVs with SOEs and FIEs from other countries other than Taiwan, Macao and HK may employ more skilled workers	Attraction of foreign capital not so dependable on one single sector	Lower dependency on FIEs and a stronger domestic orientation makes the domestic financial system more important
Labour Markets and Wage-Labour nexus	Lower attraction of migrant workers and higher wages matches the existence of a large state sector	Higher wages and weaker attraction of migrant workers makes Nanjing less attractive to labour-intensive FIEs (especially from Taiwan)	-	Higher wages matching higher educational standards and top-level HEI and research centres	Higher wages and weaker attraction of migrant workers makes Nanjing less susceptible to specialize in a labour-intensive sector	Higher wages and employment stability requires ready access of finance to fund/make up for possible employment rigidities
Education Sector	Highly skilled labour can be employed in more capital-intensive sectors, normally the case of large-scale SOEs	No need for greater pool of unskilled workers (in relation to Suzhou) as the economy is not so dependable on labour-intensive firms seeking cheap labour	Higher educational standards match higher local wages and lower attraction of migrant workers characterized by poorer educational standards	-	More skilled workers can be employed by a larger array of sectors; more local research centres and HEIs can establish more partnerships with firms in a diversified economy	More local research centres and HEIs may require stronger supply of funds (from the banking system, especially) in order to finance their activities
Specialization - Diversification	Higher diversification allows Nanjing to resist further ownership reforms (less dependable on the success of one particular sector)	Higher diversification did not prompt the city to attract foreign capital so energetically as Suzhou did	Higher diversification (especially in capital-intensive sectors) can offer a larger array of employment opportunities to highly-paid workers	A historically more diversified economy can offer more employment opportunities for skilled workers and allow for more partnerships with HEIs and research centres	-	Higher diversification calls for a ready supply of funds in case some sectors do not encounter robust demand or are not so efficient
Financing	Easy access to domestic finance, making up for possible inefficiencies and rigidities of the state sector	Easy access to domestic finance channelled to local domestic companies (SOEs or private) make the city less dependable on FIEs	Easy access to domestic finance may allow less efficient companies to maintain higher wages and/or employment stability	Easy access to domestic finance may allow companies to invest in specific skills and training (higher specialized workforce)	Easy access to domestic finance may be channelled to a large array of not-so-competitive sectors, keeping the economy more diversified	-

Source: Own elaboration

Suzhou presents a different set of institutional forms, and hence its institutional complementarities are also of distinct nature. Devoid from large-scale SOEs like Nanjing, the city had a distinct path of development. After the twilight of the famous ‘Sunan model’, based on small-scale, collectively-owned TVEs, Suzhou adopted an aggressive strategy of luring foreign capital and boosting exports. Judging in its own terms, the strategy may be deemed successful: indeed, the city attracted a staggering amount of FDI and, taking advantage of the restructuring of GPNs in the ICT sector, Suzhou boosted its exports tremendously. The lower

wages offered by the city was undeniably a key local asset in making this strategy effective, as most of the FIEs hosted (especially those from Taiwan in the ICT sector) were primarily looking for a place that could offer simultaneously cheap labour and enable a flexible and speedy production for global markets. Under this context, a relatively unqualified workforce is not a huge burden, and a continual supply of cheap labour a fundamental advantage. Given the external orientation of Suzhou's growth strategy, its firms do not need to rely extensively on domestic financial markets, as the funding may come from the headquarters. Finally, this set of institutional forms imply a higher concentration of industrial production in one particular sector, in this the case the ICT sector. Enjoying robust external demand and being dominated by TNCs, the hosting of ICT companies in Suzhou was a suitable bet for the city's strategy: it could provide Suzhou a continual source of FDI (boosting immediately the local GDP due to its impact on fixed assets investments), foreign exchange and employment for unskilled workers. Table 6.4 summarizes the interconnections of the six institutional complementarities under scrutiny in Suzhou:

Table 6.4: Complementarities of the six institutional forms in Suzhou

Institutional Forms	State Ownership	Engagement with foreign capital and markets	Labour Markets and Wage-Labour nexus	Education Sector	Specialization - Diversification	Financing
State Ownership	-	Lack of a large-scale and well-established state sector (and the demise of the “Sunan model”) prompted the attraction of FIEs and export promotion as a growth strategy	The lack of a large-scale state sector (and its associated higher wages and employment stability) made the city more reliant on the inflows of migrants workers and cheap labour	Lack of a large-scale, capital-intensive and well-established state sector (featuring higher wages) and state-sponsored top-level HEI and research centres lead to a smaller supply of skilled workers	No inheritance of a diversified and large-scale state sector (and the demise of the “Sunan model”) prompted Suzhou to bet in a sector (ICT) which could count on robust demand and reliable sources of investments (FDI) since its setting up in the city	Lack of a large-scale and well-established state sector (and local officials not so well connected with provincial officials) undermines the going public of local companies and the access to bank loans
Engagement with foreign capital and markets	Foreign capital mainly in the form of wholly-foreign owned enterprises (WFOEs); lower bargaining power of Suzhou in dealing with TNCs	-	FIEs in Suzhou are attracted by lower labour costs and the large inflow of migrant workers	Labour-intensive, export-oriented FIEs following the restructuring of GPNs (especially in the ICT sector) do not require a highly educated workforce	Attraction of foreign capital attached to the restructuring of GPNs, leading to higher specialization in the ICT sector	Strong base of FIEs and a higher external orientation makes the domestic financial system less important. Funds may come from TNCs’ headquarters
Labour Markets and Wage-Labour nexus	Strong attraction of migrant workers and lower wages favours a labour-intensive manufacturing sector (not the case of most SOEs)	Strong inflow of migrant workers and lower wages lures labour intensive, export-oriented FIEs	-	Strong inflow of migrant workers matching lower wages, lower educational standards and less specialized workforce	Strong inflow of migrant workers and lower wages are necessary to supply labour to a particular labour-intensive sector (ICT)	Lower labour costs and higher employment flexibility (larger inflow of migrant workers) allows for quicker adjustments without the aid of extra funding
Education Sector	Less educated workforce to be employed in sectors characterized by labour-intensive processes, and not by capital-intensive ones (like the case of most SOEs)	More unskilled labour can be employed in more labour-intensive sectors, normally the case of FIEs from Taiwan, HK and Macao	Lower educational standards match lower local wages and higher attraction of migrant workers characterized by poorer educational standards	-	A less skilled workforce can find job opportunities in a sector endowed with strong enough demand like the case of the ICT sector (at least until the GFC)	Fewer local research centres and HEI means lower necessity of domestic financing
Specialization - Diversification	Successful higher specialization in one sector (ICT) allows the city to disregard state ownership	Successful higher specialization in one sector (ICT) dominated by FIEs prompts the city to bet in the attraction of more FDI and export promotion	Successful higher specialization in one labour-intensive sector reinforces the importance of cheap labour and a large pool of migrant workers	The restructuring of the GPNs of the ICT sector meant that the parts of the ICT sector located in Suzhou do not require highly skilled workers	-	Higher specialization in a FIE-dominated sector makes domestic financing not so important (funds may come from abroad)
Financing	The smaller state sector means easy access to domestic finance is not so important as in Nanjing, but the local private sector may suffer from the lack of financing	Lack of ready access to domestic finance makes the city more dependable on FIEs (and undermines the growth of a indigenous private sector)	Lack of easy access to domestic finance is not a great constraint given lower labour costs and more flexible labour markets (larger inflow of migrant workers)	Lack of easy access to domestic finance undermines companies’ investments in specific skills and training (lower specialized workforce). It matches Suzhou’s higher reliance on unskilled labour	Lack of easy access to domestic finance means there is not enough funds to finance a large array of diverse sectors, reinforcing the specialized structure of Suzhou’s economy	-

Source: Own elaboration

As it can be noticed, all the six institutional forms are coherently inter-connected in both cities. These interconnections render both cities distinct and well-defined patterns of growth and

development. The significance of path-dependent processes in the forging of these systems of city-level complementarities is conspicuous. It is no coincidence that this section (6.2) was introduced with a brief exposition of the historical background and economic structure of both cities. A study by Chung (2003), comparing Nanjing and Suzhou economic structures and performances until the mid-1990s had already underscored the importance of path-dependence in the developmental strategies of both cities. For the author, the unique institutional backgrounds of these cities constrained and moulded the ‘behavioural space’ local governments encountered when crafting their developmental strategies. The analysis advanced here, for the post-WTO period, achieves similar conclusions. The legacies of a strong base of SOEs, central government planning and political connections of local cadres/managers with upper-level officials played a decisive role in shaping Nanjing’s developmental strategies in the post-2001 period. Ultimately, these legacies have unfolded into a relatively weaker engagement with foreign capital and markets, weaker attraction of migrant workers and higher dependence on domestic institutions on financing. Conversely, the legacies of a ‘hands-on’ and active efforts of lower-level local governments in coping with the process of marketization, coupled with the fading of a TVE-centred model, played a fateful role in shaping Suzhou’s developmental strategies in the post-2001 period. The leadership of Suzhou, bereft of a strong industrial base, executed actively a strategy of attracting foreign investments and becoming adaptable to the needs of foreign capital. Ultimately, these options translated into a strong engagement with foreign capital and markets, strong attraction of relatively cheap labour provided by migrant workers, lower dependence on domestic financial institutions and a higher concentration in one particular and dynamic economic sector, which enjoyed robust external demand.

Path-dependence is a key characteristic of economic growth trajectories, especially when framed from a Kaldorian perspective. As seen before, certain initial conditions, thanks to increasing returns to scale, broadly defined, tend to reproduce themselves overtime. From the alternative institutionalist perspective developed in this thesis (chapter three, section 3.3), institutions are perceived as ‘carriers of history’, reproducing themselves over time in a path-dependent fashion. Institutions have the property of influencing the preferences and motivational purposes of individuals, who in turn are mainly reflexive and adaptive to the institutional environment they are embedded in. From Aoki’s angle, institutions are interdependent and path-dependent. As it will be discussed on the next section, devoted to

scrutinize the growth performance of Nanjing and Suzhou, path-dependence is crucial in analysing the cities' growth outcomes and strategies.

The complementarities of the six institutional forms for each city obey the conceptualization of institutions as the representation of socio-political compromises resulting from the conflict among unequal agents, as defined in chapter three (section 3.3). Moreover, one may recall that in China local states in the reform era can be perceived as catalysts of economic growth, devising developmental strategies which satisfy the interests of both local officials and the local business sector, in a pro-growth symbiotic partnership. The cases of Nanjing and Suzhou symbolize this framework.

Take Suzhou as an example. Already in the mid-1980s the leadership of Kunshan came under pressure from Suzhou's government to improve its economic performance. Afterwards, the pattern of industrial growth led by foreign capital kick-started (Wei, 2002). This strategy was welded by local officials who were eager to attract foreign capital, especially from Taiwan, as seen before. Wang and Lee (2007) recount vividly the interactions between Suzhou's local officials and Taiwanese entrepreneurs. For example, Suzhou new district (SND) industrial park established close ties with Taiwanese investors since its onset. SND's cadres worked in close partnership with managers from BenQ, the first company to set up in the area. At the beginning, BenQ and the local authority of the SND even shared the same building, and they worked together in crafting the regulations and codes of the SND. Key Taiwanese investors normally would play the role of the middle-man in lobbying the local government for the type of regulations and procedures they actually were longing for; sometimes they would introduce Suzhou's cadres to other Taiwanese managers, in order to the former to learn from the latter the institutional design DZs should have in Suzhou. As Wang and Lee (2007) recalls:

'In some cases, leaders in the Taiwanese circle have established close relationships with party secretaries, mayors, and other high-ranking cadres in local states, and they have thus had easy access to the local power elites to help in transferring their experience in Taiwan to the localities' (p.1883)

Taiwanese investors gained a strong voice with local bureaucrats¹⁷⁶, and eventually this relationship was institutionalised with the creation of the Taiwanese Investor Association, which was used by them to purposefully take part in local economic governance issues. In

¹⁷⁶ Wang and Lee (2007) recall that Wu Li-gan, the owner of a Taiwanese company established in Kunshan, was known as the 'foreign mayor' of the city.

some cases, according to Wei (2010), foreign firms would willfully hire local officials and establish connections with local firms, for ‘political purposes’ (p.91).

This intense partnership obviously benefited foreign investors, as they succeeded in making DZs and industrial parks to be tailor-made in some aspects according to their own requirements amid the process of GPNs restructuring. In turn, Suzhou benefited with the establishment of new factories and production lines in the city, amid an intense process of city-level competition for investments in China. Moreover, once established in Suzhou, some foreign companies engaged in bringing some of their suppliers to the city as well. This was a deliberate strategy of Suzhou, consisting in first luring a major TNC or the major contractual supplier in the GPN to the city, and later targeting firms downstream and upstream in the supply chain to entice them to follow.

The key point is that the growth strategy pursued by Suzhou was predicated upon the mutually beneficial interactions among local leaders and the local economic elite. As the city did not count with a strong base of *large-scale* domestic firms, either state-owned or private, this local economic elite was forged due to the interlacing of foreign enterprises with the local state. This pro-growth symbiotic partnership shaped the nature of institutional complementarities found in Suzhou. Nanjing, given its distinct background, forged a different type of partnership among its local elites.

As seen before, Nanjing received the legacy of a dominant large-scale state sector, more domestic-oriented. Even after the comprehensive movement of privatization in the 1990s Nanjing managed to retain a sizable state sector, contrariwise to many other industrial powerhouses of the Maoist Era (Wu, 2007b). As a result, the close political ties between local cadres and local and central level SOEs were preserved to a great extent, and these cadre relations exerted strong influence over Nanjing’s local government developmental strategies. Hence, Nanjing’s adaptation to China’s emerging environment of marketization and opening-up had to be mediated by the existing institutional setting, marked by the interests of large-scale, domestic-oriented SOEs on the one hand and the corresponding bureaucratic structure crystalized in the local state on the other (Chung, 2003).

The strategies pursued by Nanjing reflected these particular local power relations, with a laggard development of rural, small-scale TVEs and a delayed embracement of foreign capital

in relation to Suzhou. When, in the 1990s and especially after China's accession to the WTO in 2001, Nanjing started to attract robust figures of FDI, the *type* of foreign capital inflow was of a different pattern in comparison to Suzhou. FDI in Nanjing came from a more diverse background, not being so concentrated from Taiwan. According to Wei et al's (2010) survey, the leading home-country was the United States, corresponding to 41.7% of the enterprises surveyed. The same survey revealed that the three most important factors guiding the locational decisions of FIEs in Nanjing are better investment incentives, proximity to ports, and government attitudes, with labour costs appearing only in fourth place.

Moreover, still according to the same research, Nanjing had a relatively higher proportion of joint-ventures (JVs) in relation with other YRD cities. JVs were mostly concentrated in sectors dominated by SOEs, like automobiles and (petro)chemical, which are normally more capital-intensive and domestic-oriented. Also, these sectors tend to be more subject to national-level industrial policies measures, like local content requirements. The firms surveyed did not face individual requirements themselves, but the sectors in case (automobiles and petrochemicals) are deemed 'strategic' by national-level policy-makers, enticing sectorial-specific local content requirement policies (Wei et al, 2010).

The points above reflect Nanjing's legacies and status as the provincial capital, featuring more state investments, the existence of explicit upper-government level policies (like local content requirements) and a more diversified industrial sectorial distribution. Nanjing's more interior location within the YRD, domestic orientation, and the close bureaucratic ties between SOEs and local cadres also made the city less attractive to FDI in comparison with Suzhou¹⁷⁷ (Wei, 2015b). Contrariwise to Suzhou, the symbiotic partnership between local cadres and local business sectors in Nanjing was forged always having the state sector as a strong player. SOEs remained important in the city, often crafting JVs with foreign capital, and also by receiving the support of national level industrial policies. Foreign investors, while definitely a significant force in the local developmental strategies, do not seem to enjoy the same degree of influence like in Suzhou.

Even Nanjing's infrastructural projects and urbanization process, common to many Chinese cities in the 21st century, have been marked by a centralized and domestically-oriented

¹⁷⁷ In particular the FDI searching primarily for lower labour costs and very supportive local government attitudes towards foreign capital.

approach which have further concentrated public resources for development (Wei, 2015b). Following the extension of its urban planning efforts, Nanjing led an initiative to form a ‘city-region’: an administrative area envisaged to be a cross-boundary region involving eight independent prefecture-level cities¹⁷⁸, with Nanjing at the centre of the region (Luo et al, 2010). Aiming at coordinating investments across borders, the Nanjing city-region created a forum for discussion involving all major stakeholders in the project, the Nanjing city-region development forum (NCDF). The city-region is a state-led initiative, with Nanjing’s local state playing a key role, but forums like the NCDF have incorporated many non-state actors, such as universities, research institutes, and the business sector, especially the big and influential firms within the region, into the decision-making process. Therefore, the NCDF works as an interaction platform among business and political elites, and the more smooth communication among cities have reduced the barriers to cross-boundaries investments made by companies. The city-region initiative exemplifies a developmental strategy led by domestic actors (state and private), and the how the interests of local governments and the local business sector can be intertwined in a pro-growth symbiotic partnership.

6.3) Growth performances of Nanjing and Suzhou, 2001-2015

After investigating the institutional complementarities in Nanjing and Suzhou, as well as the political economy of local coalitions for growth, now it is time to delve into the growth outcomes of both cities. The previous section has indicated the existence of distinct sets of institutional complementarities, each forged in a path-dependent manner, taking into account each city historical legacies. This section will aim to answer the question of which brand of city-level institutional complementarities is better equipped to render robust growth rates.

As seen in chapter two, growth shall be theorized as demand-led. It is the expansion of aggregate demand which ultimately will explain economic growth of sub-national units. It was also suggested, following the Kaldorian tradition, that economic growth depends on the realization of dynamic increasing returns to scale, which in turn are localized geographically. Regions, thus, must be able to exploit the expansions of macro-level aggregate demand and harness the dynamic increasing returns locally. The ability of regions to do so will depend, as discussed previously, on the local productive structure. Hence, in order to assess the growth

¹⁷⁸ These eight prefecture-level cities are: Nanjing, Zhenjiang, Yangzhou and Huai’an in Jiangsu province, and Wuhu, Maanshan, Chuzhou, Chaohu in Anhui province.

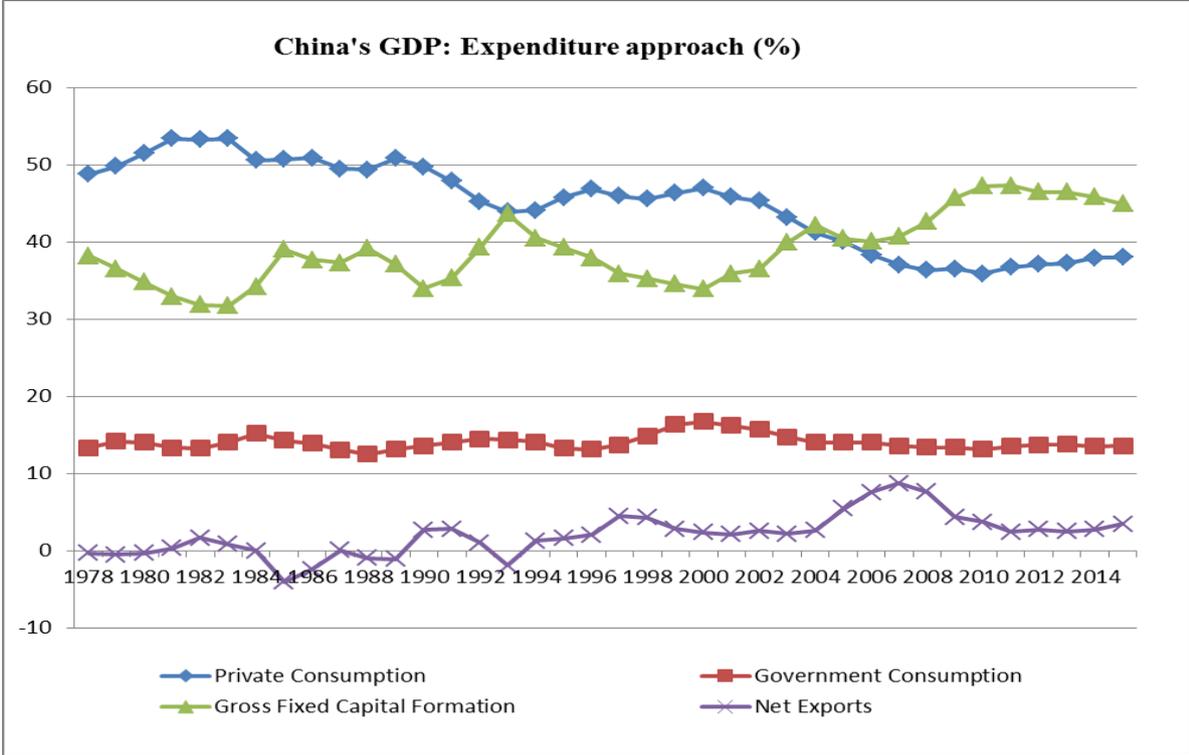
outcomes of Nanjing and Suzhou it will be required to two topics to be examined: firstly, the nature and evolution of the composition of Chinese aggregate demand; and secondly, the particular productive structure of both cities.

As discussed in chapter five (and synthesized in figure 5.2), the local institutional characteristics of a region can be captured by the complementarities among the six local institutional forms under scrutiny (see tables 5.1, 6.2, 6.3 and 6.4); and these local institutional forms can also be perceived to illustrate certain main structural characteristics of a region. From a Kaldorian growth perspective these local institutional forms or structural characteristics can be said to constitute a region's productive structure. Local economic growth, then, will be determined by the appropriate *match* between local structural-institutional characteristics and the growth and composition of the national macroeconomic demand. Where one can find a match between what a region's productive structure is able to produce and an aggregate demand component under expansion, one is expected to witness stronger economic growth at the local level.

6.3.1) China's changing aggregate demand composition, 2001-2015

When analysing China's GDP from the expenditure approach, it becomes clear that the country's impressive economic growth in the post-1978 period has been associated with a rise of investments ('gross fixed capital formation') as GDP share, especially after 2000, and an almost continual decrease of private consumption as GDP share (at least until 2008). This trend has given voice to the so-called 'unbalanced growth' hypothesis, and the concern of a supposed over-investment drive in the country. However, as Kroeber (2016) argues, this 'unbalanced' characteristic was common to the other East Asian countries (Japan, South Korea and Taiwan) which managed to successfully develop, and this phenomenon is actually easily understandable: in undergoing a process of structural change, the installation of huge amounts of fixed capital (factories, infrastructure, etc.) is required, and as a result investments as GDP share rise more than proportionally, with the consumption ratio falling. Absolute consumption, nonetheless, kept growing at robust rates in China, thanks to the continuous rise in wages levels. Kroeber (2016: p.182) reports that between 1990 and 2013 the average annual per capita consumer spending rose at a rate of 7%, outpacing any other major and developing economy in the period. Figure 6.17 shows the data on China's GDP by the expenditure approach:

Figure 6.17: China’s GDP: Expenditure approach (1978-2015)



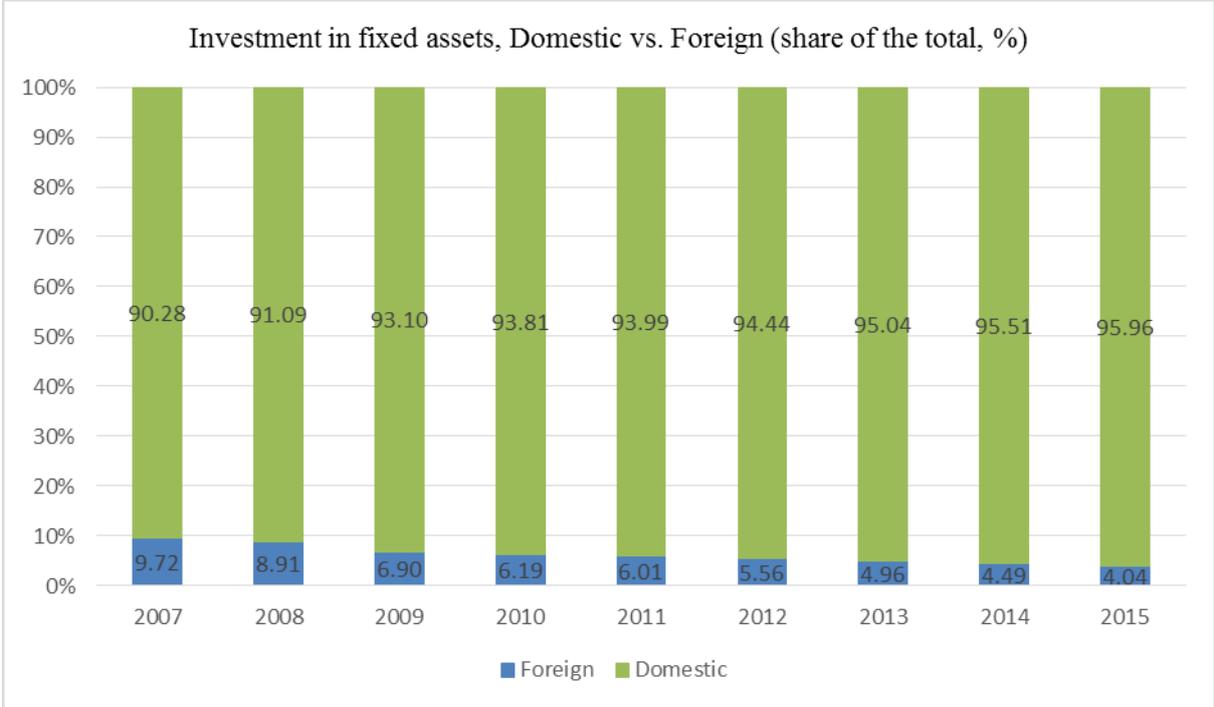
Source: Own elaboration based on data from NBS (2016)

In addition to the trends of consumption and investments, it is also worth looking at the behaviour of external demand (net exports). Often alluded as an ‘export-led’ growth model, China actually registered a certain erratic trajectory for its net exports until the mid-1990s, recording even negative figures in some occasions. It is only with the WTO accession in 2001 that the country starts to experience hefty trade surpluses, but after the 2008 GFC a sudden fall ensues. From the Kaldorian perspective employed here, the existence of massive trade surpluses in the run-up to the crisis represents an unrivalled source of economic dynamism, which can be exploited by different localities by distinct degrees, in accordance with their productive structure. Conversely, the post-2008 fall in net exports also represents a sudden loss of economic dynamism, especially for locations which were able to take advantage of the earlier moment.

The international environment following the GFC registered more timid rates of international trade expansion and also outward productive foreign direct investments. According to Donnan and Leahy (2016), before the GFC trade grew at as much as twice the rate of global output, but after 2011 trade growth rates were equal or below to the growth rate of the global

economy. China, in particular, not only suffered from a less robust external demand for its production, but also from a decrease in foreign investments in fixed assets. Figure 6.18 depicts this last trend:

Figure 6.18: Investments in fixed assets, by source (2007-2015)



Source: Own elaboration based on data from NBS (various years)

From a macroeconomic perspective, investments are the main component of Chinese aggregate demand since 2004, as seen in figure 6.17. Therefore, it seems justifiable to affirm that the post-GFC environment has been translated into a higher domestic orientation of the Chinese economy, at least in terms of macro-level demand and sources of investments. External demand and foreign investments continue to play an important role in China’s economic growth, but a diminished one in relation to the period between the WTO accession and the GFC¹⁷⁹.

The above exposition reveals important changes in China’s composition of aggregate demand, especially from the beginning of the century until 2015, precisely the timeframe of this thesis analysis, as justified in section 6.2.1. In particular, the GFC seems to be a major watershed, and as hinted in section 6.2.1, it will be used as a dividing point in this section: the growth

¹⁷⁹ This is not to say that China has been purposefully ‘closing’ its economy. In fact, projects like the Belt and Road Initiative (BRI) point to the opposite direction. The point here is simply that foreign capital and markets have become clearly less important in terms of *sources of demand*.

performances of Nanjing and Suzhou will be considered for the period *pre-GFC* and *post-GFC*.

While the changes in the macro demand composition shown above are telling, they are still very broad. Investments, as indicated, are a major component. One may, hence, attempt to disentangle which sub-sectors within the broad category of gross fixed capital formation (investments) have grown the most throughout the whole period of analysis, and in the different sub-periods. In particular, manufacturing sectors will be analysed, given its importance in the Kaldorian growth schema.

Unfortunately, there are some data limitations when one aims at scrutinizing manufacturing sectors. Ideally, data utilizing output should be used in this case (like the data shown for the GDP composition by the expenditure approach). Lamentably, the output data is not consistent throughout the whole period of analysis, or is absent. The same caveat applies for assets data. Employment data, however, is available and is consistent at this level of disaggregation. Hence, here it will be analysed the growth of employment for each Chinese manufacturing sector. In total, there are 28 manufacturing sectors¹⁸⁰. The period of analysis will be divided in two: the first, prior to the GFC, encompasses the 2003-2009 period. The second is the post-GFC period, from 2009 to 2015¹⁸¹.

Tables 6.5 and 6.6 below organize manufacturing sectors by a ranking of employment growth. It will be shown only the leading sectors in each period of time, and not all the sectors. The objective is to present the manufacturing sectors which have grown the most nationally, therefore indicating the demand for the goods of these sectors were in evident expansion. In the next section (6.3.2) the specialization indexes for these top growing sectors will be presented, for both Nanjing and Suzhou, in order to suggest whether or not a match exist between the expanding components of the macro-level aggregate demand and the local productive structures.

¹⁸⁰ See the Appendices for a full list and for further explanations.

¹⁸¹ 2009 is considered the watershed year, and appears in both periods, first as the ending point in the pre-GFC period, and later as the initial point in the post-GFC period. Both periods encompasses seven years of analysis, therefore. The decision to choose 2009 as the turning point in the analysis, instead of 2008 (normally associated with the GFC) is due to the impacts of the GFC in China's external trade: 2008 still registers a relatively high trade surplus (7.64% of GDP), and it is only in 2009 that a substantially lower series of values starts (4.34%).

The criteria to determine how many sectors should be included in this analysis will be based on the *top 25th percentile*. Commonly, a percentile indicates that a certain percentage of the total sample falls below (or above) the chosen percentile. Hence, the sectors presented here are all among the top 25% sectors which have grown the fastest in terms employment growth in the period. Alternatively, it can be said that the remaining 75% sectors have presented smaller growth rates than the sectors here presented¹⁸². Table 6.5 and Table 6.6 lay out the top growing manufacturing sectors for both periods:

Table 6.5: Top growing manufacturing sectors in China, by employment (2003-2009)

Highest employment growth by manufacturing sector, 2003-2009	Growth
Manufacture of Communication Equipment, Computers and Other Electronic Equipment	142.7%
Manufacture of Furniture	127.1%
Processing of Timber, Manufacture of Wood, Bamboo, Rattan, Palm, and Straw Products	104.7%
Manufacture of Electrical Machinery and Equipment	101.8%
Manufacture of Metal Products	86.5%
Processing of Food from Agricultural Products	85.9%
Manufacture of Rubber and Plastics Products	76.1%

Source: Own elaboration, based on data from NBS (2004 and 2010a)

During the first period, 2003-2009, the top growing sector is the ‘computer, communications and other electronic equipment manufacturing’, registering a growth in employment of 142.7%. Recall that this is the sector in which both Nanjing and Suzhou are the most specialized at, with the latter city presenting even higher indexes. As suggested before, this is a sector which, given the GPNs restructuring that took place from the early 1990s onwards, is heavily export-oriented. The following sectors includes metallurgy (‘manufacture of metal products’), chemicals (‘manufacture of rubber and plastic products’), electronics (‘manufacture of electrical machinery and equipment’) and lower added-value sectors (‘processing of timber, manufacture of wood, bamboo, rattan, palm, and straw products’).

¹⁸² See the Appendix for an explanation of how to calculate the percentiles (for both methods employed in this chapter), as well as the complete list of manufacturing sectors and their respective growth rates.

Table 6.6: Top growing manufacturing sectors in China, by employment (2009-2015)

Highest employment growth by manufacturing sector, 2009-2015	Growth
Manufacture of Articles For Culture, Education and Sport Activity	91.6%
Manufacture of Medicines	43.6%
Manufacture of Beverages	40.2%
Manufacture of Communication Equipment, Computers and Other Electronic Equipment	37.0%
Manufacture of Transport Equipment	33.0%
Manufacture of Foods	30.3%
Processing of Food from Agricultural Products	25.8%

Source: Own elaboration, based on data from NBS (2010a and 2016)

The second period, 2009-2015, presents a very distinct composition, as well as growth rates. To start with, it is obvious that the manufacturing sector as whole diminished its growth impetus, as witnessed by substantially lower growth rates. The leading sector now is the ‘manufacture of articles for culture, education and sport activity’, followed by the ‘manufacture of medicine (pharmaceuticals)’ and the ‘manufacture of beverages’. The manufacturing of ‘computer, communications and other electronic equipment’ only appears in fourth place, registering a growth rate of only 37% this time. The top three growing sectors seem to be less traditional (like chemicals and metallurgy) and more domestic-oriented. Pharmaceuticals, in particular, are posited to experience a large growth as China’s burgeoning middle-class and rapidly-aging society may represent an enlarged demand for the sector.

Alternatively, instead of calculating the top 25% *sectors* which have grown the fastest in each period (7 sectors in both periods, given the total of 28 sectors), one can calculate how many sectors may be included among the top 25% *growth* among all the sectors. While the first method is concerned with the *ranking* of the sectors, the second is concerned with the actual growth rates, and their relative magnitude. As the distribution is skewed, the leading sectors may have grown much faster than the remaining ones, and the first method, relying on the ranking, does not take that into account. The second method has the advantage of excluding sectors which may not have grown that fast, but are included because they belong to the top 7 ranking anyways. Following this second method, during the first period (2003-2009) only the top two growing sectors (‘manufacturing of computer, communications and other electronic equipment’ and ‘manufacturing of furniture’) qualify to be among the top 25% growth of all sectors. During the second period (2009-2015) only the first top growing sector (‘manufacture of articles for culture, education and sport activity’) qualifies. That happens because the manufacturing growth was overwhelmingly concentrated in the top of table,

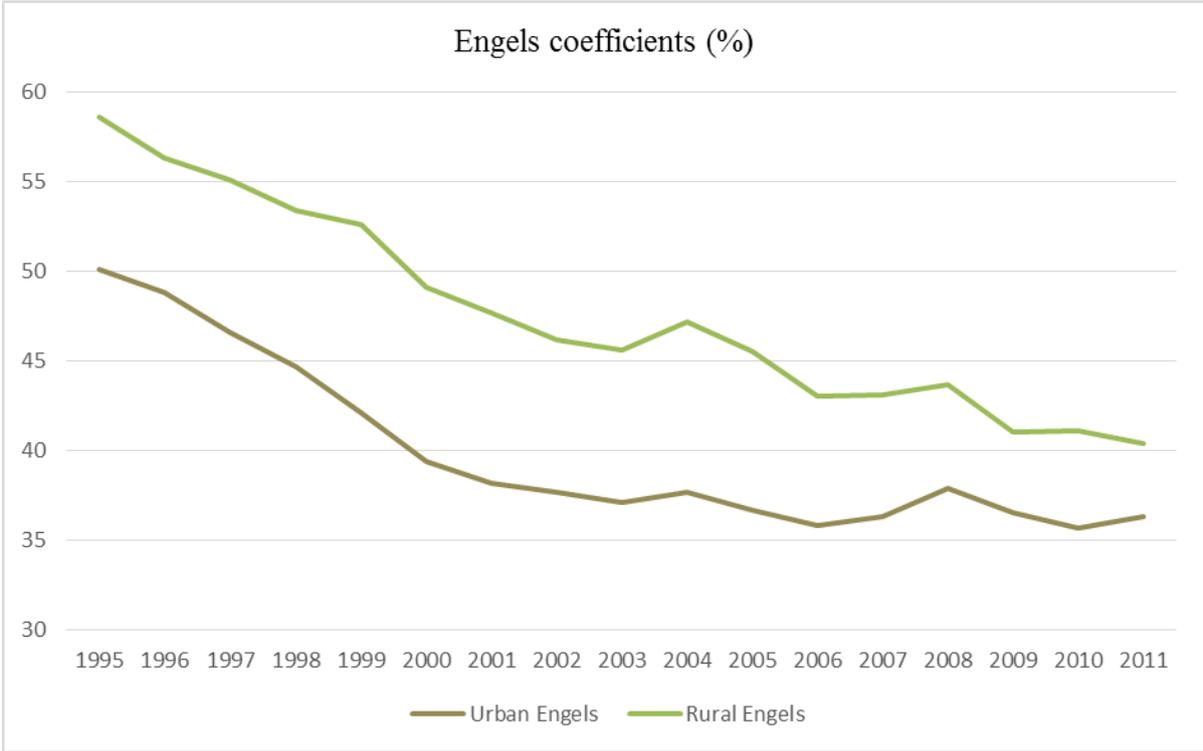
especially for the second period (the leading sector grew 91.6%, more than the double of the second sector, with 43.6%).

Interestingly enough, some manufacturing sectors experienced a decrease in their employment. During the first period, 2003-2009, the ‘manufacture of tobacco’, a very traditional, low value-added sector, decreased its employment in 5.6%. During the second period, 2009-2015, a total of six sectors shed workers, ranging from 3.1% (‘manufacture of general purpose machinery’) to 68.8% (‘manufacture of artwork and other manufacturing’). Traditional sectors, like ‘manufacture of rubber and plastics products’, which was among the top 25% percentile in the first period, lost 5.1% of its workers in the second period¹⁸³. Overall, China’s manufacturing seems to be moving towards less traditional, more diversified and perhaps higher value-added sectors.

This trend may be said to parallel the country’s changing consumption composition as well. China’s aggregate consumption seems to be moving towards more sophisticated goods, so that the share of basic consumption goods is decreasing over time. The Engels coefficient measures the share of food expenditure as a proportion of total household spending. If the coefficient decreases over time, the most likely interpretation is that the country is going through a process of structural change with households increasingly spending proportionally less in food (and in less sophisticated items) and conversely spending more in higher value-added goods. Figure 6.19 depicts the Chinese trend, showing a continuous fall of the coefficient.

¹⁸³ The complete list is available at the appendices

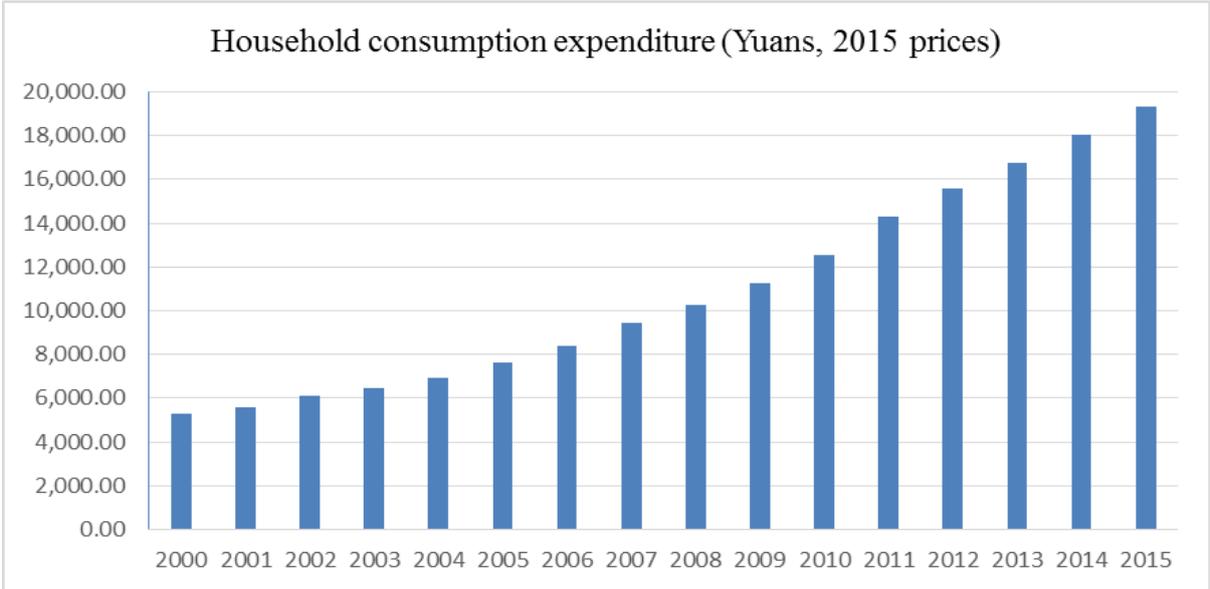
Figure 6.19: Urban and rural Engels coefficient (1995-2011)



Source: NBS (2012)

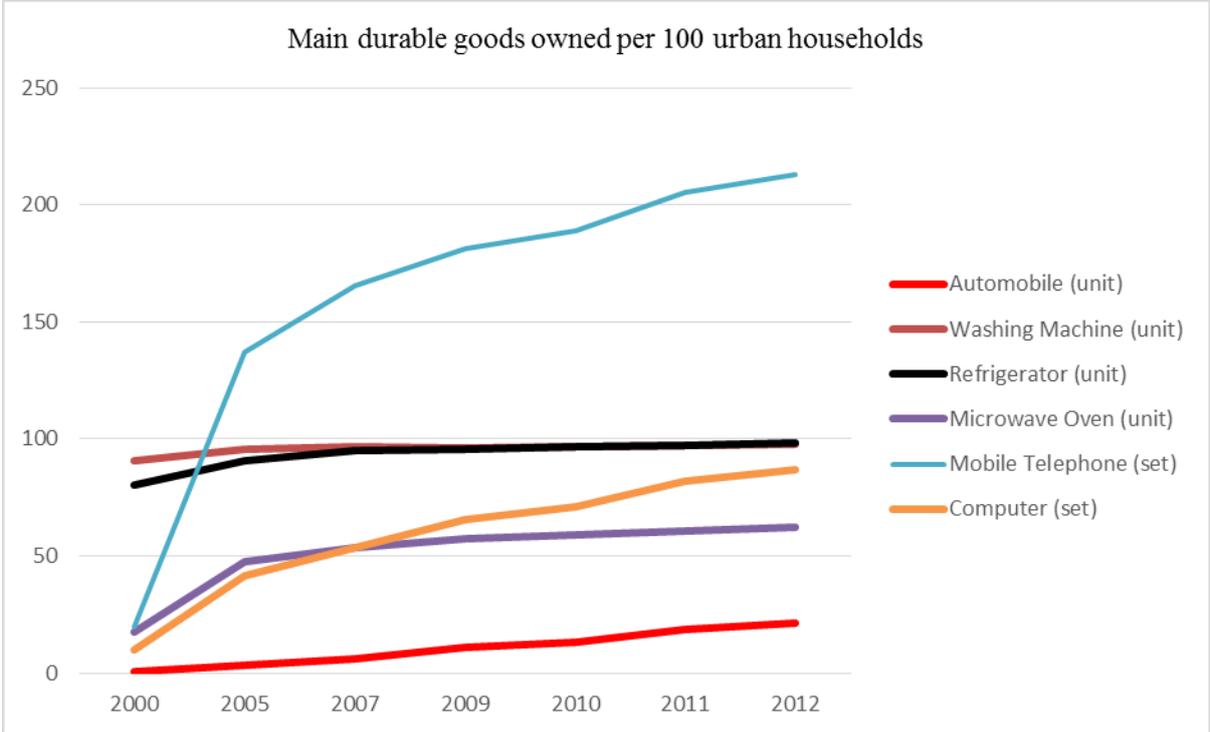
Indeed, the consumption of ‘modern’ durable goods has been spreading throughout China, revealing the creation and development of a mass consumption society. As the Chinese economic growth unfolded, the typical Western consumption pattern based on the acquisition of main durable goods such as automobiles, home appliances, white goods etc has been generalized throughout the country. It means household consumption and China’s domestic market increasingly serves as a source of reliable demand for producers. Figure 6.20 below depicts the total numbers for China’s consumption expenditure per household, portraying the rising trend in overall consumption expenditure the country is undergoing. Figure 6.21 depicts the trends for the consumption of selected main durable goods. It is important to highlight the rise of the consumption of automobiles, leaping from 0.5 units per 100 urban households in 2000 to 21.54 in 2012. While this rise is proportionally less impressive than other goods (especially mobile phones), one must bear in mind that the unitary cost of an automobile is of greater magnitude than the other consumption goods, representing, thus, a more sizable unitary impact.

Figure 6.20: China’s average household consumption expenditure (2000-2015)



Source: Own elaboration, based on data from NBS (2016). Data deflated using China’s CPI

Figure 6.21: Possession of selected main durable consumption goods (2000-2012)

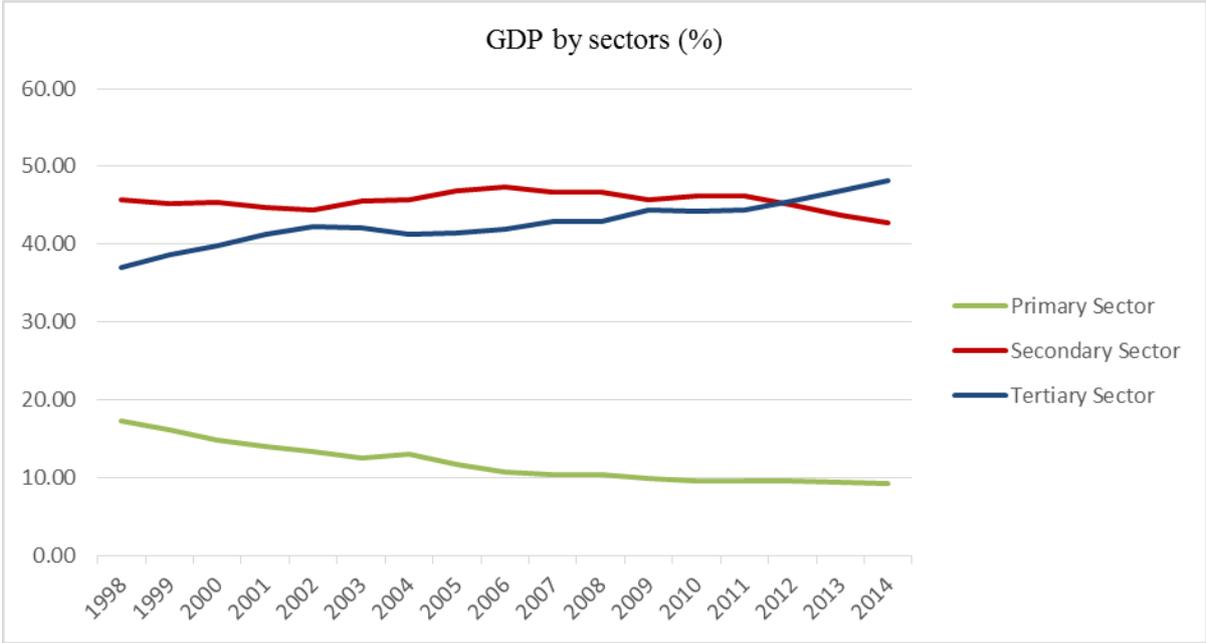


Source: Own elaboration, based on data from NBS (various years)

Finally, and in spite of the main focus here on manufacturing, it is important to highlight the growing importance of the services sector for the Chinese economy. As figure 6.22 reveals, services output as a share of the GDP have been continuously increasing, overtaking the secondary sector in 2012 as the leading sector of the Chinese economy. This movement is not

disassociated with the rise of Chinese income per capita and living standards. As the country grows rich, more people are able to afford more expensive products, after having met their immediate consumption needs. Indeed, Kroeber (2016) indicated that since 2010 the share of the Chinese population which earns more than USD 20,000 a year (dubbed the ‘affluent’ by the scholar) is growing faster than any other social stratum in the country. These are the people who are able to spend in advanced services, like healthcare, education¹⁸⁴, tourism¹⁸⁵ and financial services.

Figure 6.22: China’s GDP by sectors (1998-2014)



Source: Own elaboration, based on data from NBS (2015)

6.3.2) Nanjing and Suzhou local productive structures and growth performance, 2001-2015

After analysing the changing composition of aggregate demand in China between 2001 and 2015, now one may come back to the discussion on Nanjing and Suzhou. It was observed that during the first period (2001-2008), prior to the GFC, China enjoyed a higher external demand for its products, as can be attested by the large trade surpluses registered just before the GFC. Investments as a share of the GDP were on the rise, and consumption falling. Accordingly, the top growing manufacturing sector in this period was the ‘computer,

¹⁸⁴ The total number of enrolments for the regular undergraduate level (*pūtōng běn zhuānkē*, 普通本专科) increased from 5,561 thousand people in 2000 to 26,253 thousand people in 2015, representing an increase of 4.72 times (NBS, 2016: table 21-8).

¹⁸⁵ China’s total expenditure in domestic tourism, measured in 2015 prices, has leaped from 450,130.8 million Yuan in 2000 to 3,419,510 million Yuan in 2015, representing an increase of roughly 7.6 times (NBS, 2016: table 17-10). Data deflated by China’s national CPI.

communications and other electronic equipment manufacturing’ (perhaps the closest in definition with the ICT sector), most likely to be heavily export-oriented. The following top growing sectors included some traditional areas like metallurgy (manufacture of metal products), chemicals (manufacture of rubber and plastic products), and lower added-value sectors (processing of timber, manufacture of wood, bamboo, rattan, palm, and straw products).

The second period, post-GFC, registered a clear fall in external demand, as attested by the fall of trade surpluses from 2009 onwards. Moreover, while investments kept increasing its share in the GDP until 2011, consumption halted its descendent trajectory and experienced a slight increase, from 35.9% of the GDP in 2010 to 38.1% in 2015. The loss of external dynamism was also felt in the sources of investments in fixed assets, which became increasingly more domestic-oriented (as seen in figure 6.18). Meanwhile, Chinese consumption patterns seem to be moving from a more traditional one, centred on basic goods, to a more sophisticated one. The generalization of a mass consumption society, at least among urbanites, is clearly on the way. In tandem with the process of structural change China is undergoing, the services sector overtook the secondary sector in 2012, boomed by a rising middle-class. The top-growing manufacturing sectors reflect these trends, with more sophisticated and domestic-oriented sectors like the manufacture of ‘articles for culture, education and sport activity’, and the ‘manufacture of medicine’ (pharmaceuticals) leading the list.

Given this scenario, one may speculate which city, Nanjing or Suzhou, has performed better in each period of time (or whether the same city has consistently outperformed the other, throughout the whole 2001-2015 period). The six institutional forms/ structural characteristics for Nanjing and Suzhou presented previously (section 6.2) can be said to typify a region’s productive structure, and offer valuable insights for this question. An extra aid may come from the specialization indexes for all the top-growing manufacturing sectors identified previously in tables 6.5 and 6.6.

Table 6.7 below shows the relative specialization indexes for all the seven sectors presented on table 6.5 (period 2003-2009). Table 6.7 takes data for the year 2004 as the representative of the whole period. It becomes clear that, for all sectors presented, Suzhou has higher relative specialization indexes than Nanjing. In some cases the difference among the cities is very pronounced, as the case for the ‘manufacture of furniture’, for instance (Suzhou’s index is

more than six times Nanjing's). Table 6.8 shows the relative specialization indexes for all the seven sectors presented on table 6.6 (period 2009-2015). Table 6.8 takes data for the year 2013 as the representative of the whole period. Here the scenario is almost perfectly reversed: Nanjing presents higher relative specialization indexes than Suzhou for all the sectors under scrutiny, with the exception of the fourth in the ranking. Hence, while during the first period the national top growing manufacturing sectors were overwhelmingly represented in Suzhou's productive structure, for the second period the top growing sectors were solidly represented in Nanjing's productive structure.

Table 6.7: Relative specialization indexes, Nanjing and Suzhou (2004)

Relative Specialization Index (2004)		
Highest employment growth by manufacturing sector, 2003-2009	Nanjing	Suzhou
Manufacture of Communication Equipment, Computers and Other Electronic Equipment	2.38	3.33
Manufacture of Furniture	0.20	1.24
Processing of Timber, Manufacture of Wood, Bamboo, Rattan, Palm, and Straw Products	0.10	0.56
Manufacture of Electrical Machinery and Equipment	0.81	1.03
Manufacture of Metal Products	0.63	0.89
Processing of Food from Agricultural Products	0.35	0.46
Manufacture of Rubber and Plastics Products	0.58	1.02

Source: Own elaboration, based on data from NBS (2005) and JSBS (2004)

Table 6.8: Relative specialization indexes, Nanjing and Suzhou (2013)

Relative Specialization Index (2013)		
Highest employment growth by manufacturing sector, 2009-2015	Nanjing	Suzhou
Manufacture of Articles For Culture, Education and Sport Activity	1.03	0.81
Manufacture of Medicines	0.62	0.30
Manufacture of Beverages	0.25	0.09
Manufacture of Communication Equipment, Computers and Other Electronic Equipment	2.24	4.26
Manufacture of Transport Equipment	0.90	0.26
Manufacture of Foods	0.54	0.32
Processing of Food from Agricultural Products	0.34	0.26

Source: Own elaboration, based on data from NBS (2014) and JSBS (2014)

This is a major shift, which potentially indicates that during the 2001-2009 period Suzhou's productive structure enjoyed a strong match with China's aggregate demand composition, while during the 2009-2015 period it was Nanjing's productive structure which encountered a robust aggregate demand. These conjectures fit well with the scenario previously described: Nanjing's productive structure can be said to be more domestically-oriented and diversified, while Suzhou can be said to be more export-oriented and specialized (in the ICT sector, especially). Moreover, China's increasingly lower reliance on foreign sources for investments in fixed assets (again refer to figure 6.18 above) is also illustrated in specific manufacturing

sectors. Table 6.9 below depicts the diminished importance of foreign investments for newly increased urban fixed assets, for the manufacturing sector as a whole and some selected¹⁸⁶ manufacturing sectors:

Table 6.9: Foreign investments as share of the total newly increased urban fixed assets: China

Sources of newly increased urban fixed assets: Foreign Investment as share of the total (%)					
Sector	Manufacturing (total)	Manufacture of Communication Equipment, Computers and Other Electronic Equipment	Manufacture of Articles For Culture, Education and Sport Activity	Manufacture of Furniture	Manufacture of Medicines
Year					
2004	12.24%	41.12%	32.70%	16.63%	5.69%
2008	6.49%	28.51%	10.31%	5.77%	4.50%
2014	1.45%	6.15%	1.97%	0.74%	0.97%

Source: Own elaboration, based on data from NBS (various years)

As seen in the table, the manufacturing sector as whole and the selected sub-sectors all experienced a fall in foreign investments as a share of total investments from 2004 to 2014. The ‘manufacture of computer, communications and other electronic equipment’, for instance, saw the share of foreign investments in the sector to decrease from 41.12% in 2004 to 6.15% in 2014. Cities more reliant on foreign investments, precisely the case of Suzhou, allegedly suffered more from this trend than more domestic-oriented cities.

Moreover, other trends like the increase of services in the Chinese economy and the expansion of the domestic consumer market, as hinted before, are likely to benefit more Nanjing than Suzhou. The former has a more diversified economy, with a larger services sector and, due to its historical legacies, tend to be more domestically-oriented. Suzhou, on the other hand, is more reliant on manufacturing, and in particular the ICT/ ‘manufacture of computer, communications and other electronic equipment’ sector. It is less diversified and more export-oriented, therefore less geared (in relation to Nanjing) towards China’s domestic market. The GFC seems to have triggered a period of sluggish external demand and lower availability of foreign investments; in parallel, China witnessed the relative increase in importance of more domestic-oriented sectors. This whole scenario described so far, and the changes having the GFC as a watershed, leads to the tentative inference that Suzhou enjoyed a superior economic performance prior to the GFC, but after that Nanjing most likely took the lead.

¹⁸⁶ It was selected the top two growing sectors for both periods of time.

These structural characteristics of both cities are further confirmed by the existing literature, especially studies focusing on the type, sectorial diversity and features of foreign investments attracted by Nanjing and Suzhou. Klibaner et al (2014), for instance, recalls Nanjing's recent wave of FDI specifically in R&D, many of which came to complement existing manufacturing facilities. Computing and telecommunications companies like SAP, IBM and Ericsson (not to mention Chinese giants Huawei and ZTE) all established R&D facilities or innovation centres in the city. In the automobile sector, Ford established a subsidiary to research the manufacture of automobile components, and the German company Bosch established a production hub and R&D base in the city in 2013.

A more detailed study by Zeng and Bathelt (2011) shed a light on the chemical and petrochemical sector in Nanjing. The city was already an important site for chemical production during the Maoist Era, but large scale production took-off again since the late 1990s, after the Asian Crisis. Under this context, the Nanjing Chemical Industrial Park (CIP) was reformulated and attracted more international investors. The CIP enjoyed easy access to shipments of crude oil and other resources, as well access to the pipeline connecting the northern Chinese oil fields. Nanjing's several universities and research institutes, counting with programmes in chemistry/chemical engineering, also could supply the CIP with specialized workforce. Given Nanjing's historic-institutional legacies, the CIP was already dominated by SOEs, and was oriented towards China's domestic market. Sinopec, and its subsidiaries, is a case in point. The CIP had as a goal to complement and strengthen Sinopec's chemical production competencies, and to support the development of the park into a key petrochemical production base in China. In other words, to maintain and advance Nanjing's leading role in the petrochemicals sector within China. As such, Zeng and Bathelt (2011) aptly noticed that the CIP's goals 'did not include a vision that went beyond national borders' (p.688). This is a key point, stressing the more inward-looking nature of the park, in contrast with other chemical parks like the one in Shanghai, which had since its onset a more international and outward orientation. Following this inward-looking orientation, companies established in the CIP followed the logic of large vertically-integrated sectors.

Much of the FDI the CIP attracted from the late 1990s onwards came in the form of JVs between FIEs and SOEs. Moreover, as the chemical industry has a market entry regulated by the Chinese central government, FIEs in the CIP seek to have a Chinese partner as a manner to benefit from established distribution channels (Zeng and Bathelt, 2011). Perhaps the most

import illustration of this model is the JV between the Yangtze Petrochemical Co (YPC), a subsidiary of Sinopec, and the German corporation BASF. The BASF-YPC joint-venture opened its first facility in 2005, and, according to Zeng and Bathelt (2011) ‘it produced *exclusively for the Chinese market and did not engage in export activities*’ (p.689, emphasis added). The JV was part of BASF’s plan to increase its overall share of sales in China and in the Asia Pacific region. In 2014, BASF announced a 60% increase in its CIP production capacity, in order to meet the growing demand of China and the Asia Pacific region (M2 Presswire, 2014).

The already mentioned study by Wei et al (2010) also was able to capture the growing significance of the Chinese market to FIEs in Nanjing. The American company A.O.Smith, for instance, established product development and marketing facilities for the Chinese market, in order to cater to the specificities of Chinese consumer’s needs. Both Wei et al (2010) and Zeng and Bathelt (2011) studies highlight the importance of Nanjing’s historical domestic orientation, impacting the strategies of TNCs in the city. It is justifiable to believe that during the second period of our analysis (2009-2015) Nanjing’s growth prospects could have been favoured by China’s enhanced domestic demand, *vis-à-vis* the diminished weight of external demand in the country’s aggregate demand. In the case of the petrochemical industry, as seen, the JVs between SOEs and TNCs were forged aiming to better exploit China’s national-wise resources and to employ the CIP’s inherited corporate networks. As a result, it was witnessed an on-site modernization of SOEs and state-driven networks.

Suzhou, as seen before, could be characterized by an externally driven manufacturing sector. Indeed, recent surveys on the ICT sector in the city conducted by Wei (2010; 2015a) confirm that FIEs in Suzhou are overwhelmingly export oriented, seek lower labour costs, feature labour-intensive productive processes and are established mostly in the form of wholly foreign-owned enterprises (WFOEs). Wei (2010) found that only 4.5% of the companies surveyed were Sino-foreign JVs, in a stark contrast with the examples provided above about Nanjing. Moreover, if in Nanjing labour costs ranked only fourth among all the factors in determining locational investments of ICT firms, in Suzhou labour costs leads the ranking, followed by better regional/local market potential and agglomeration of similar enterprises (Wei, 2010).

Tellingly, Wei (2010; 2015a) surveys captures both the original purposes of FIEs and ICT firms in Suzhou, as discussed earlier, but also relevant changes taking place in the past few years. His first survey (Wei, 2010) shows that most of the FIEs (81.8%) were involved in exports, and that they normally maintained a significant proportion (45.3%) of products for export. But the same researcher (Wei, 2015a) also captured the growing importance of Chinese domestic markets for FIEs based in Suzhou, pointing to the gradual shift of functions from production for global markets towards infiltrating the Chinese domestic market, while continuing to export. As the author (Wei, 2010) encapsulated:

‘Serving the world market, which is supposed to be the main function of FIEs in China, at least during the earlier stage of the reform, is no longer the main function. This reflects the drastic rise of the Chinese domestic market and represents a significant strategic change for foreign investors’ (p.85)

This change is also part and parcel of Suzhou’s policies brought by the post-GFC new macroeconomic environment. On the one hand, Suzhou has also embraced the promotion of infrastructural development projects in order to generate local demand, by improving transportation facilities like expressways and undergrounds (Wang et al, 2015). But on the other hand the city has initiated a series of policies aiming at promoting indigenous innovation capabilities, the development of business services and local private enterprises, in order to offset its dependence on foreign markets and capital (Wei, 2015a).

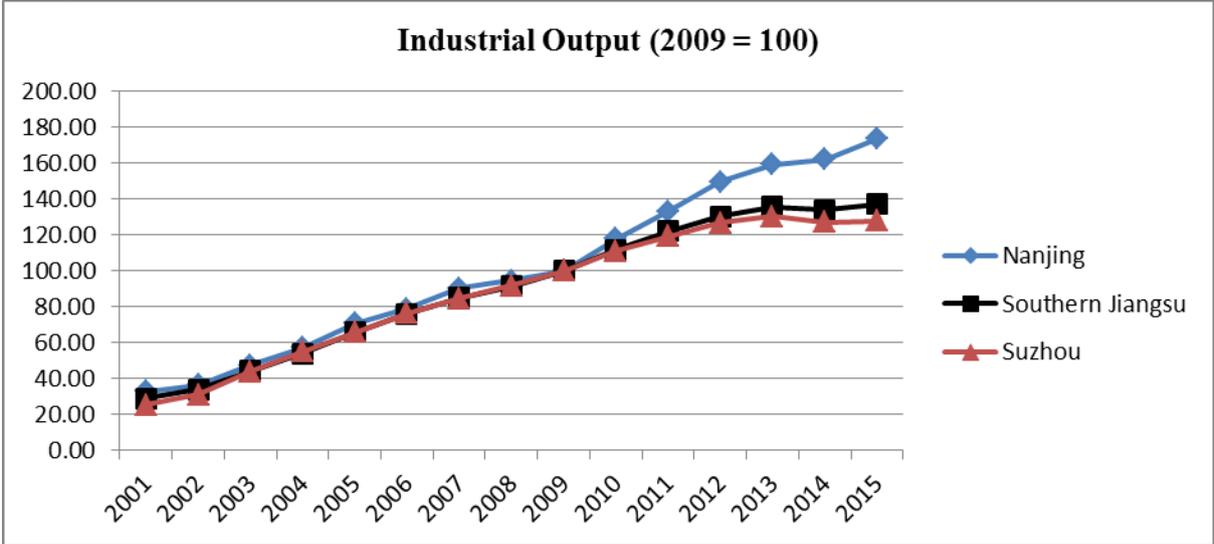
These policies aiming indigenous innovation, while looking opportune and applaudable, face limited prospects of success according to Wei (2010; 2015a). The lack of R&D facilities, as seen before, alongside with Suzhou’s status as a non-provincial capital makes the objective of a highly technologically innovative domestic sector difficult to be realized in the city. Moreover, Wei’s (2010; 2015a) research has shown that TNCs in Suzhou are networking among themselves in the YRD, with FIEs supplying inputs for other FIEs. In other words, much of the domestic sales of FIEs goes to another FIEs, and not to the final Chinese consumer. In practice, that means that FIEs in Suzhou, *while regionally embedded, are not locally embedded*. TNCs in the area managed to forge their own ‘glocal’ networks of production, excluding indigenous firms. This scenario undermines considerably the prospects of local knowledge spillovers, reducing the growth potential of the region in a context of sluggish external demand.

Taking into account these circumstances for Nanjing and Suzhou, one may now look at the data versing around economic growth outcomes for both cities. Following the Kaldorian approach to economic growth presented in chapter two, one should always remember that growth is theorized as demand-led. A robust growth of demand will trigger higher production. In particular, manufacturing¹⁸⁷ production is considered the ‘engine of growth’, given its power to generate dynamic increasing returns to scale and technical progress. A higher output production in this sector is thought to trigger a higher productivity growth, via the Kaldor-Verdoorn Law. Recall, still, that for Kaldor capital accumulation and technical progress cannot be easily disentangled, as there is a bi-causality mechanism between them: both are at the same time cause and consequence of each other. As seen before, allowing for increasing returns makes technical progress endogenous (to output growth). Extended markets (higher demand) enable the exploitation of economies of large-scale production and an enhanced capital-labour ratio and labour productivity. A higher productivity and technical progress in the manufacturing sector will spill over to the rest of the economy, in the form of either embodied (in capital goods) or disembodied knowledge , triggering a rise of productivity for the whole economy and thence a higher domestic output for the whole economy. With a higher domestic production the Kaldorian process of circular and cumulative causation is completed, and growth reinforces itself.

With the changing composition of the Chinese aggregate demand scrutinized before, one is expected to see how those shifts have impacted the manufacturing output of Nanjing and Suzhou. Figures 6.23 and 6.24 below depicts industrial and manufacturing gross output, but setting the year 2009 as base 100, in order to the changes after 2009 to be better visualized.

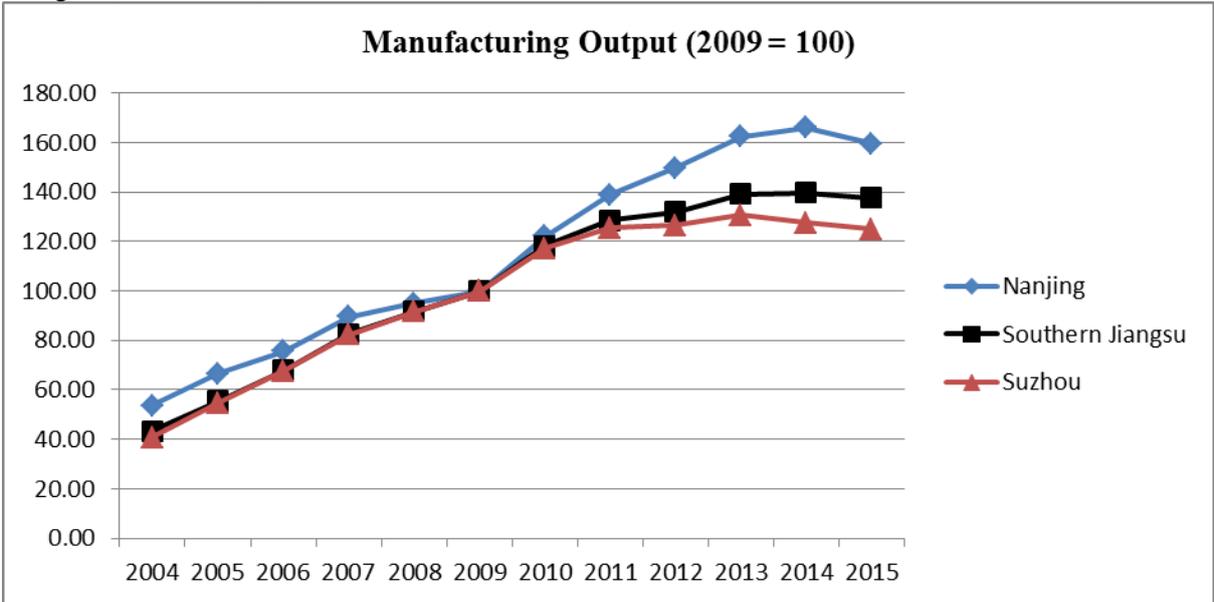
¹⁸⁷ The secondary sector is composed by industry and construction. The former can be further sub-divided into three groups: manufacturing, mining and utilities. Ideally, data for manufacturing alone is the preferred case, but not always available. The second-best data is industry alone, as it does not include construction data. When not possible, data for the secondary sector as a whole will be presented.

Figure 6.23: Industrial output (2009 = 100): Nanjing, Suzhou and Southern Jiangsu (2001-2015)



Source: Own elaboration, based on data from JSBS (various years)

Figure 6.24: Gross manufacturing output (2009 = 100): Nanjing, Suzhou and Southern Jiangsu (2004-2015)

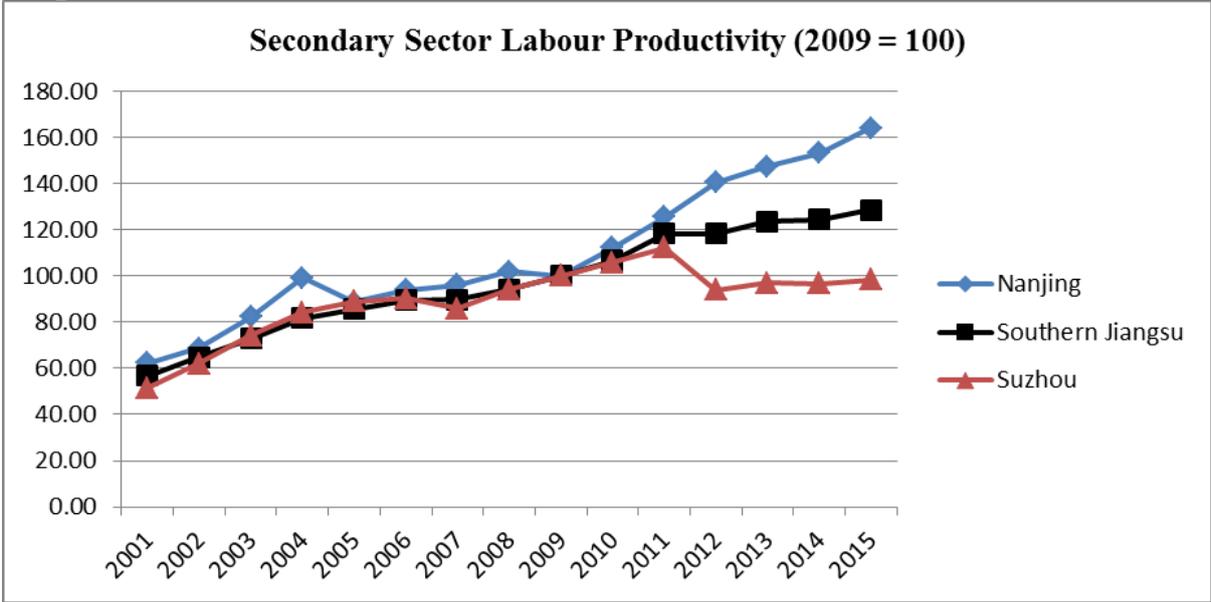


Source: Own elaboration, based on data from JSBS (various years)

As expected, Nanjing presented higher industrial and manufacturing output growth during the second period of analysis (2009-2015), while Suzhou presented better figures during the first period (2001-2009). These data confirms the prediction made before, based on the premise that the Chinese aggregate demand composition of the first period matched Suzhou’s productive structure better than Nanjing’s productive structure, while after 2009 the scenario is reversed. A city enjoying higher demand for its goods is more likely to expand production,

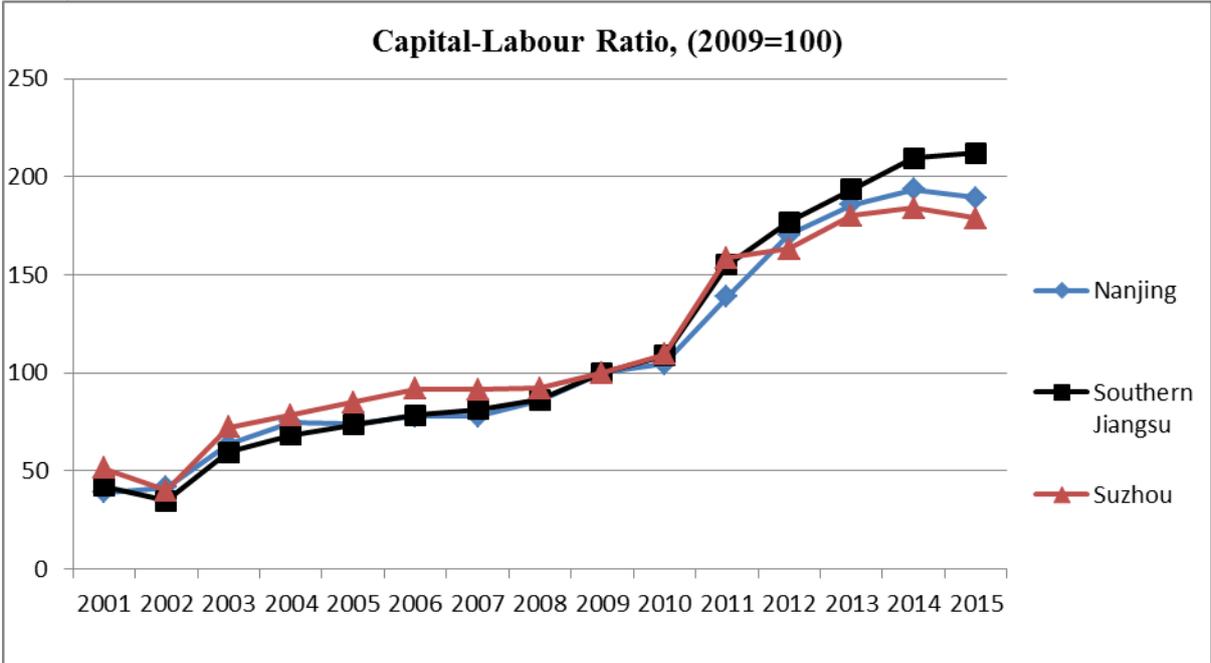
in order to exploit the existing demand. Following an enhanced industrial/manufacturing output, one is expected to observe a higher growth rate of capital accumulation and technical progress, via KV Law as explained before. Data for the secondary sector labour productivity and city-level capital-labour ratio is presented next:

Figure 6.25: Labour productivity, second sector (2009 = 100): Nanjing, Suzhou and Southern Jiangsu (2001-2015)



Source: Own elaboration, based on data from JSBS (various years)

Figure 6.26: Capital-labour ratio (2009 = 100): Nanjing, Suzhou and Southern Jiangsu (2001-2015)

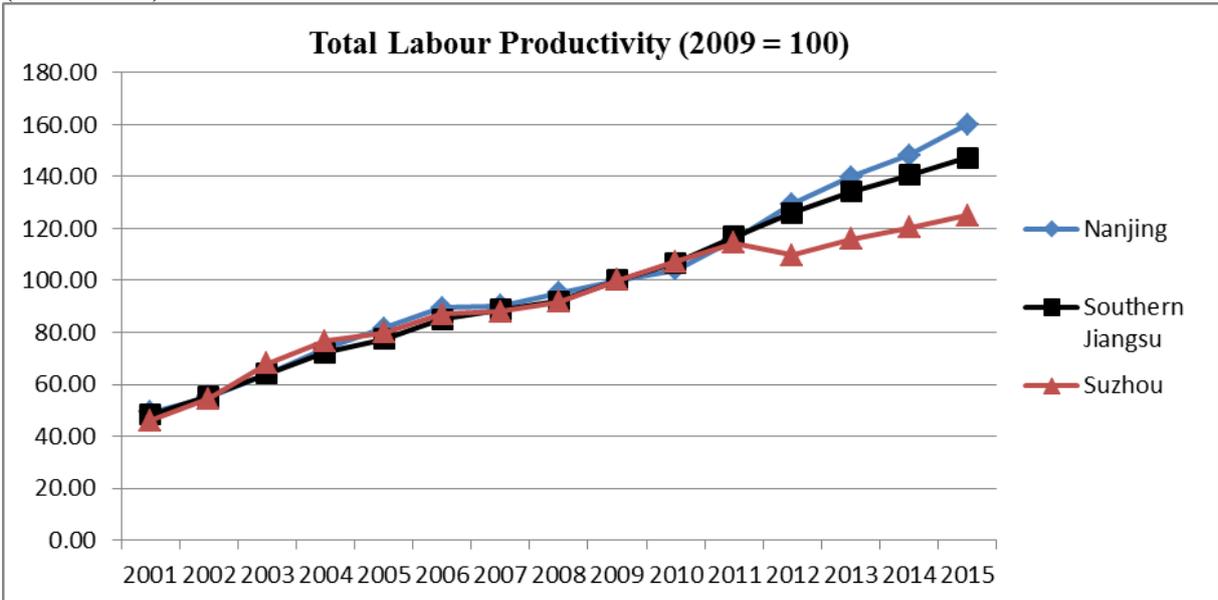


Source: Own elaboration, based on data from JSBS (various years)

For both capital-labour ratio and the secondary sector labour productivity, Nanjing presented faster growth rates, as expected, during the second period. Capital accumulation, proxied by the capital labour ratio, is both cause and consequence of economic growth. A higher demand and production will enable an economy to accumulate more capital (here shown solely in the form of embodied capital), and the KV Law guarantees that faster technical progress will follow from an increased output production. The data presented above is theoretically consistent and dovetails nicely the data on industrial and manufacturing output presented in figures 6.23 and 6.24. Suzhou displays faster second sector labour productivity growth during the first period, but the scenario is reversed after 2009. Note, however, that for the capital-labour ratio Nanjing grows faster than Suzhou in both periods, revealing the more capital-intensive nature of its productive structure *vis-a-vis* Suzhou's more labour-intensive structure, regardless of the period.

Capital accumulation and technical progress are interwoven, and they also spark economic growth. Hence, higher figures in the previous figures (6.25 and 6.26) are expected to be matched by higher total labour productivity growth (due to inter-sectorial spillover effects). A higher labour productivity (both total and secondary sector) is anticipated to be translated into both cost and non-cost competitiveness gains, entailing accelerated GDP growth rates. Figure 6.27 below depicts the outcomes for total labour productivity:

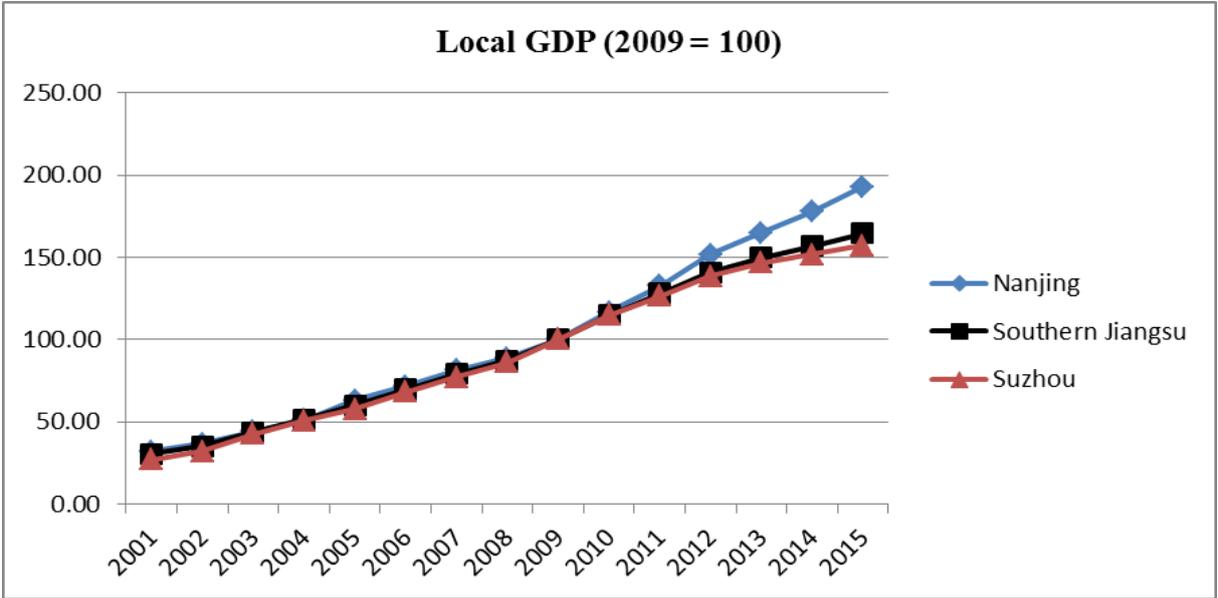
Figure 6.27: Total labour productivity (2009 = 100): Nanjing, Suzhou and Southern Jiangsu (2001-2015)



Source: Own elaboration, based on data from JSBS (various years)

Once again, the theoretically-informed prediction is confirmed by the data. During the first period (2001-2009), when Suzhou enjoyed higher demand for its production, the city also recorded higher industrial and manufacturing output growth, faster secondary sector labour productivity growth and now one can notice a higher total labour productivity growth in the same period as well. Nanjing presents inferior results for this period, but after 2009 records a superior performance in all the indicators under scrutiny. Data for GDP growth closes the empirical analysis:

Figure 6.28: Gross domestic product (2009 = 100): Nanjing, Suzhou and Southern Jiangsu (2001-2015)



Source: Own elaboration, based on data from JSBS (various years)

As anticipated, Suzhou records faster economic growth between 2001 and 2009, but after that Nanjing takes the leadership. Table 6.10 summarizes the statistical data for all these indicators presented:

Table 6.10: Growth rates for main economic performance indicators: Nanjing and Suzhou (2001-2009 and 2009-2015)

Growth Rates (%) of Main Indicators of Economic Performance: Nanjing and Suzhou, 2001-2009 and 2009-2015												
Indicator	Manufacturing gross output		Industrial gross output		Capital-Labour Ratio		2nd Sector Labour Productivity		Total Labour Productivity		Gross Domestic Product (GDP)	
	Nanjing	Suzhou	Nanjing	Suzhou	Nanjing	Suzhou	Nanjing	Suzhou	Nanjing	Suzhou	Nanjing	Suzhou
2001 - 2009*	86.31%	144.86%	205.89%	294.80%	155.74%	94.74%	60.56%	94.18%	103.06%	117.29%	210.46%	271.21%
2009 - 2015	59.65%	25.04%	73.53%	27.58%	89.32%	78.76%	64.26%	-1.48%	59.96%	24.99%	92.68%	57.12%

Source: Own calculations based on data from JSBS (various years)

*Data for manufacturing gross output starts in 2004, not in 2001.

Suzhou presents superior figures for all the six indicators during 2001-2009, but from 2009-2015 the situation is fully reversed, with Nanjing leading in all indicators¹⁸⁸. It is important to highlight the cumulative nature of the growth cycles presented here: once a city's superior growth performance is set in motion, it tends to reproduce itself along time. That was the case of Suzhou until 2009 and Nanjing after that, creating two very clear and distinct periods for economic growth analysis, having the year 2009 as a watershed. But if growth is circular and cumulative, one must spell out why Suzhou interrupted its superior growth trajectory back in 2009. The explanation, as already hinted, is centred on China's macro-demand composition shift: the GFC represented a staggering external shock for the Chinese economy, and localities which built their economic structure primarily on the strength of external demand and foreign capital suffered the most. Moreover, there were already important domestic changes slowly taking place in China, with the rise of a burgeoning middle-class and a rapidly-aging society representing an enlarged demand for some sectors which Nanjing was more suited to exploit.

¹⁸⁸ Again, the only exception is the capital-labour ratio, with Nanjing presenting faster growth rates in both periods. As mentioned before, this might be due to the city's structurally more capital-intensive nature of production. But even in this case bear in mind that Suzhou witnesses a decrease in the growth rate of the capital-labour ratio, in accordance with all the other indicators.

Chapter 7: Conclusions

This thesis set out to understand what explains regional economic growth in contemporary China. After reviewing the literature on growth and institutional theories, as well as the debate on the local state in China, in chapter five an original framework was developed. This framework was forged exclusively to scrutinize China's regional economic growth, tailor-made to suit the particularities of the Chinese case. In spite of that, it also has a strong theoretical component, welding the insights of both growth and institutional theories. The framework was thus employed in chapter six, in a comparison between two cities in Southern Jiangsu: Nanjing and Suzhou. These cities present very distinct historical developmental paths, which unfolded in divergent institutional and structural characteristics. As such, they fit very well the rationale of this thesis, of underscoring dissimilar trajectories and patterns of growth in contemporary China.

In order to analyse economic growth, Kaldorian theories were employed, as exposed in chapter two. In particular, the process of circular and cumulative causation was stressed, highlighting path-dependency and the importance of the interactions between supply and demand, with the latter taking the theoretical primacy in explaining economic growth. The Kaldorian growth schema is demand-led, and relies on the so-called dynamic increasing returns to scale to generate endogenous technical progress.

Productivity gains are generated through innovations, capital-deepening, higher specialization and the further extension of markets. These productivity gains interact with the formation of aggregate demand, and can be perceived to be shared between profits and wages, and/or between consumption, investments and net exports. The interactions and feedbacks between how productivity gains are generated – the productivity regime (PR) – and how they are shared macro-economically – the demand regime (DR) – will determine the robustness of growth episodes. Crucially, however, any particular growth episode (and its associated DR and PR) is embedded into a wider historical context, which can be apprehended by an overall institutional architecture to be gauged by a set of stylized (institutional) facts.

This institutional architecture can be regarded as the ‘social infrastructure’, the ‘operating regime’ in which growth episodes will take place. Hence, we are led to the institutional debate. Institutions, crystalized in specific forms, are the main conduits of long-term economic growth, as they will govern the pattern of interactions between the DR and the PR, ultimately defining the key parameters of the cumulative causation growth episodes.

Institutions may be defined in several manners. The approach utilized in this thesis considers a political economy definition, in which institutions are perceived as socio-political compromises resulting from diverse interests among heterogeneous agents. Institutions, and hence these socio-political compromises, will be materialized in certain *forms*. Following this theoretical tradition, institutional forms are simply the representation of certain social regularities we observe, denoting a codification of a main social relationship (Boyer, 1988a). Advancing further, this study relies on the notion of institutional complementarities: when certain institutional forms are jointly present, they ‘reinforce each other and contribute to improving the functioning, coherence or stability of specific institutional configurations,’ (Amable, 2016: p.79). It is the interconnections among a certain set of institutional forms which will lend institutional support to an accumulation regime to materialize and thus to the Kaldorian growth schema to take place virtuously.

Hence, in order to actually understand what explains local economic growth in contemporary China one must first gaze at the set of institutional complementarities possibly existent at each city. In chapter five the specific institutional realms and their respective institutional forms (table 5.1) were nominated, and the *conceivable* institutional complementarities among them were presented (table 5.2). In addition, prefecture-level cities were introduced and justified as the proper local level unit of analysis for this thesis. Before delving into growth performance data, therefore, the empirical analysis of this thesis starts with an inquiry on the set of institutional complementarities conceivably existing in Nanjing and Suzhou. Notwithstanding, as the definition of institutions here employed is centred on a political economy approach, before mechanically seeking and searching for certain institutional forms and complementarities in Nanjing and Suzhou the empirical analysis (chapter six) began with a historical background of both cities (section 6.2.2), aiming at identifying their particular institutional legacies. With those historical-institutional legacies in mind, one can smoothly move to the analysis of institutional complementarities in Nanjing and Suzhou.

Nanjing inherited a strong base of large-scale SOEs and, even after successive rounds of privatization and ownership transformations by the beginning of the century the city's industrial structure was still remarkably dominated by state-holding enterprises. Those enterprises tend to be more capital-intensive and domestic-oriented than most private and FIEs (especially from Taiwan, Macao & Hong Kong). Nanjing's educational sector also received an important set of legacies from the past: as a provincial capital, the city was a privileged location in central and provincial investments in HEIs and research centres, not to mention a better primary education system. When China decidedly moved towards an open-door approach, Nanjing did not have the same urge to attract FDI and promote exports as cities like Suzhou, Wuxi and Dongguan had. To be sure, Nanjing attracted, and still attracts, a considerable amount of FDI. However, the values are smaller than those in Suzhou and the type of FDI is slightly different. Nanjing consistently offers higher wages than other cities in the YRD in Jiangsu, undermining its attractiveness to the type of labour-intensive, export-oriented FDI. Indeed, in Nanjing an important fraction of FIEs forge JVs with SOEs, often to exploit China's domestic market, as the BASF-YPC partnership attests. With an industrial base with such characteristics, Nanjing may offer higher wages and attract less migrant workers as well. The inheritance of large-scale SOEs (as well as Nanjing's position as a provincial capital) also plays an important role in the access to the domestic financial system: local enterprises seem to enjoy a smoother process in going public and also in obtaining bank loans. Finally, the city counts with a more diversified economic structure as well, a result of previous investments in a larger array of sectors inherited from the past, a more developed service sector and an educational system of superior quality. All of these characteristics are interconnected, with one complementing and reinforcing each other, yielding a system-level coherence and compatibility. Table 6.3 in chapter six summarized all of these institutional complementarities.

Suzhou has managed to forge a distinct set of institutional complementarities. With the kick-start of the 'reform and opening-up' in 1978 the city soon became famous as the cradle of the 'Sunan model': rural industrialization promoted by TVEs, based on light manufacturing industries employing unskilled workers and low technology. Just as the city was starting to feel the downfall of the model, China was already moving more decidedly towards the lure of foreign capital and export-promotion. Suzhou seized this historical opportunity and, coupled with the concomitant restructuring of the GPNs of the ICT sector, started to attract FDI in manufacturing. The lack of a strong SOEs base and the twilight of the canonical 'Sunan

model' prompted the city to remake its industrial structure: Suzhou became a hotspot of labour-intensive, export-oriented manufacturing dominated by FIEs, especially in the ICT sector. The large inflow of migrant workers and the lower levels of wages in the city contributed to the success of this new industrial structure, which could also forgo a highly educated workforce and top-level HEIs. In comparison with Nanjing, these characteristics also meant the city could abdicate from an easy and ready access to domestic financial institutions. All of these characteristics are interconnected, with one institutional form complementing and reinforcing each other, yielding a system-level coherence and stability. Table 6.4 in chapter six summarized all these institutional complementarities.

After presenting these two distinct sets of institutional complementarities, found in Nanjing and Suzhou, one must ask which one is better equipped to deliver superior growth performances. As alluded before, economic growth is ultimately a demand-led process. When analysing local economic growth, however, a problem is posed because demand is essentially a national-level, macroeconomic phenomenon. In other words, the DR – how the productivity gain are accrued or shared – is common to every single region in China. As explained in chapter five and summarized in figure 5.2, it will be the interaction of this common aggregate demand with a locally-specific PR which will generate distinct growth outcomes. The locally-specific PR is a function of the unique set of institutional complementarities found in each city, as discussed before. Hence, to assess the growth performances of two cities in China is to assess the match (or otherwise) between their city-specific PR and a common, national level, DR.

In chapter six (section 6.3.1) it was portrayed the changes in the composition of China's aggregate demand from 2001 to 2015, the period of analysis of this thesis. Regarding the main stylized facts, initially China counted with a more robust external demand, especially between 2004 and 2008. Moreover, private consumption as a share of the national GDP was falling until 2010, while investments were on the rise until 2011. Within manufacturing, the top growing sectors between 2003 and 2009 were the 'computer, communications and other electronic equipment manufacturing' (the closest in meaning with the ICT sector), followed by traditional sectors like metallurgy (manufacture of metal products), chemicals (manufacture of rubber and plastic products), and lower added-value sectors (processing of timber, manufacture of wood, bamboo, rattan, palm, and straw products).

The GFC inaugurates a new pattern of demand composition in China, marked by weaker external demand. Moreover, while investments kept increasing its share in the GDP only until 2011, consumption halted its descendent trajectory and experienced a slight increase, starting in 2010. The loss of external dynamism was also felt in the sources of investments in fixed assets, which became increasingly more domestic-oriented. Meanwhile, Chinese consumption patterns seem to be moving from a more traditional one, centred on basic goods, to a more sophisticated one. The generalization of a mass consumption society, at least among urbanites, is clearly on the way. In tandem with the process of structural change China is undergoing, the services sector overtook the secondary sector in 2012, boomed by a rising middle-class. The top-growing manufacturing sectors in this second period reflect these trends, with more sophisticated and domestic-oriented sectors like the manufacture of articles for culture, education and sport activity, and the manufacture of medicine (pharmaceuticals) leading the list.

The description presented in the two paragraphs above indicates that China experienced a shift in its DR: between 2001 and 2009, roughly, the country's aggregate demand had as a hallmark a more robust external demand, rising importance of investments (with a higher significance of foreign investments), greater relevance of the secondary sector, and, within manufacturing, more traditional (metallurgy, chemicals), low added-value (processing of wood products) and external-oriented (ICT) sectors. This particular composition of the aggregate demand favoured the productive structure found in Suzhou. In other words, during this period there was a strong match between Suzhou's PR and China's DR. Thus, a virtuous interaction between the local level PR and the national level DR was set in motion, kick-starting¹⁸⁹ the Kaldorian cumulative causation growth scheme for Suzhou. Data for economic growth performance was summarized in table 6.10 in chapter six, empirically confirming this trend for the period 2001-2009.

Between 2009 and 2015, however, China's aggregate demand portrayed a contrasting composition: external demand has weakened, external funding for investments has decreased, private consumption experienced a slight increase as share of the GDP, the generalization of a mass consumption society kept its trajectory, the services sector gained further momentum

¹⁸⁹ The period of analysis starts in 2001, but one can infer with a considerable degree of reliability that this virtuous interaction started even earlier, when Suzhou forged its set of institutional complementarities (by the early or mid-1990s, most likely) and thus established its local productive structure as we know it. Feasibly, the accession to the WTO in 2001 fortified this pattern of virtuous interactions even further.

overtaking the secondary sector, and, within manufacturing, more sophisticated and domestic-oriented sectors are leading the list. This particular composition of the aggregate demand favoured the productive structure found in Nanjing. In other words, during this period there was a strong match between Nanjing's PR and China's DR. Thus, in relation to Suzhou, a more virtuous interaction between the local level PR and the national level DR was set in motion, and the process of cumulative causation was stronger in Nanjing than in Suzhou during this period. Data for economic growth performance was summarized in table 6.10 in chapter six, empirically confirming this trend for the period 2009-2015.

The relative growth performances of Nanjing and Suzhou during the period 2001-2015 illuminate crucial aspects discussed at full length in the theoretical literature review of this thesis. Elements pertaining to the growth and institutional theories debated previously, as well as the role of the local state in China's development may be highlighted.

Path-dependency, a concept dear to both the Kaldorian and institutional complementarities approaches, revealed its full thrust in this study. Growth episodes characterized by increasing returns to scale and cumulative causation are said to be path-dependent, as advantageous initial conditions relative to other regions tend to reproduce themselves over time. A system of institutional complementarities, relatedly, is deemed to be to a reasonable extent stable and self-reproducing over time. The analysis of Nanjing and Suzhou unveils the historically-determined, path-dependent process of institution building and replication over time.

Nanjing and Suzhou's distinct sets of institutional complementarities, as well as their respective developmental strategies, are largely a function of the cities' unique institutional backgrounds. It is fair to consider that Suzhou would not be able to choose and implement a strategy centred on the development of large-scale SOEs aimed primarily at the domestic market. Conversely, it is fair to consider that Nanjing would encounter very significant hindrances in implementing a strategy solely based on export-oriented manufacturing reliant on cheap labour.

This is not to say that Nanjing and Suzhou developmental options were already prearranged – that would be tantamount to a crude form of determinism. In fact, the histories of both cities also illustrate that it is possible to promote institutional changes and remake growth models. After the fall of the canonical 'Sunan model', Suzhou managed to craft a new developmental

strategy based on foreign capital, exports and productive specialization. The same goes for Nanjing, which managed to attract FDI and privatize some of its SOEs, but also to retain the more large-scale SOEs and promote JVs with them, and to bet on a more diversified economy and higher educational standards coupled with its distinct productive structure. The examples of Nanjing and Suzhou confirms the idea that local officials are pivotal actors in pushing for institutional changes and display evident agency in making developmental choices - both new strategies necessitated conscious changes and policies. The point is, however, that the historical legacies of each city (crystalized in their productive structure and local-level institutional complementarities) governed the feasible opportunities and obstacles they found ahead. To paraphrase Marx, cities make their own history, but not as they please; they do it under pre-existing institutional circumstances, given and transmitted from the past.

The current inferior economic performance of Suzhou may also highlight another theoretical aspect: lock-in effects. The system of institutional complementarities forged in Suzhou encountered a powerful match with China's aggregate demand until the outbreak of the GFC. However, after 2009 China's new DR seems not to be in harmony with Suzhou's productive structure, generating negative feedbacks between the local-level PR and the national DR. The practical results are much lower growth performances, as attested in table 6.10. The inferior performances, given the Kaldorian process of cumulative causation, become hard to be reversed: without a robust demand, productivity and technical progress growth are undermined and the region enters a phase of (relative) decline. The city can be said to be stuck into a lock-in position, and needs further institutional changes to surf into a new wave of virtuous PR and DR interaction.

Tellingly, the city has been trying to implement new policies, either to tap into the new demand composition available at the national level or to change some of its institutional characteristics. Once again, the proactivity of local officials is evident. As discussed in chapter six, Suzhou has been investing in innovation and research centres, incentivizing indigenous innovation and local start-up companies, and more state-directed funding has been channelled to local companies. Regarding the rising importance of China's domestic markets, even some of the FIEs there established are redirecting their sales to domestic consumers (Wei, 2015a).

However, the empirical analysis reveals that, at least up to 2015, Suzhou has not only been performing worse than Nanjing but also worse than the average for the whole Southern Jiangsu region. One must recall from chapter three that institutional complementarities are characterized by a ‘loose enough coupling’ between institutions, so that institutional changes acquires the form of limited adjustments, instead of a total break-up of the system or perfect immutability. Alternatively, from the post-Keynesian perspective developed by Setterfield, it is the inter-relatedness among different components of the productive process that makes the whole institutional-structural characteristics of the region difficult to be altered. These complementarities and system-level coherences make further institutional changes in one realm in isolation difficult to be achieved smoothly. Indeed, the recent research by economic geographers in the region reveals that it is precisely the characteristics which made Suzhou’s economy so successful prior to the GFC that may be now perceived as obstacles in the city’s quest for further institutional changes: According to Wei (2015a), TNCs in China normally favour locations such as Shanghai and Beijing when setting their regional administrative and R&D activities, in detriment of Suzhou. Most FIEs in the city do not promote cooperation with domestic firms when it comes to R&D and innovative activities, which can be seen as a result of TNCs networking mainly with other TNCs in the YRD, ostracizing indigenous firms in Suzhou. The practical result is that the city still has a rather weak capacity of R&D and innovation, finding it difficult to move beyond the set of structural-institutional characteristics forged decades ago and reproduced ever since.

If one recalls that institutions can be perceived as the representation of certain main social relationships, or the crystallization of socio-political compromises resulting from the conflict among heterogeneous interests, it follows that institutional change should be perceived as a political economy matter. The particular form an institution will acquire, and its probability of change, will be contingent on the tortuous social-political conflicts and on the imperatives of economic reproduction. Institutional change, thus, comes about when the social-political compromises sustaining a given set of institutions is shaken, disrupted, or challenged, to varying degrees of intensity. The difficulty in forging a new set of institutional complementarities, from this angle, may arise from the entrenched interests in Suzhou’s local polity. As discussed in chapter six (section 6.2.4), the symbiosis between local political and economic groups representing some FIEs has cemented the construction of the current set of institutional complementarities in the city. A successful institutional change under these

conditions will require a deeper modification or amendment of the compromises currently prevailing in Suzhou.

From Aoki's game-theoretical perspective, the current dis-adjustment or mismatch between the PR and DR can be seen as a change in the overall environmental conditions under which agents take decisions. Ergo, the dis-adjustment or mismatch disrupts the way in which the games have been played so far, leading to a questioning of the shared beliefs about the salient ways in which the game is repeatedly played. Hence, agents will adjust the way they play and, with time and repetition, a new pattern of plays may start to become predominant. Whether or not the cumulative outcomes of the repeated plays will unfold into a new coherent set of institutional complementarities will depend on whether agents' new choices are able to yield an adequate pay-off for them or not. As we are in a world of multiple-equilibria, there is no guarantee of which solution will be the chosen one (i.e., the new possible set of institutional complementarities cannot readily be predicted and will be found out only *ex post*), nor how transient or stable it will be. Perhaps what can be said, with a certain degree of confidence, is that the current dis-adjustment or mismatch between the PR and DR may entail a process of 'hybridisation' in Suzhou, one in which some previous institutional forms persist, while others are transformed. Hybridisation leads to the creation of new complementarities, instead of threatening the whole coherence of the system. The exact configuration of these complementarities, as well as how this process will take place, however, will depend on the actions (to be) undertaken by key agents in the city¹⁹⁰.

Nanjing's set of institutional complementarities, on the other hand, seems to be better suited for China's current DR. The city headquarters large domestic companies like Panda (electronics manufacturer), Suning (retail sector¹⁹¹) and Yurun Group (food processing¹⁹²), which are all well-positioned to exploit China's booming consumer market¹⁹³. It has also been able to diversify its economy among distinct sectors (including services) and incorporate more advanced manufacturing sectors, like aircraft manufacturing, pharmaceuticals and smart grid technology (Klibaner et al, 2014). When it comes to innovation capabilities, the city is home

¹⁹⁰ Central policies and central-level agents may impact this process to a great extent as well. As pointed out before, cities are connected to the central government by China's distinctive political-administrative system, and the central government often enacts economic policies which have a paramount impact in some localities (currently, that could be the case of the 'Made in China 2025' plan, for instance).

¹⁹¹ Considered China's largest private company by revenue in 2013 (Klibaner et al 2014)

¹⁹² Considered China's largest supplier of processed meat.

¹⁹³ These three companies are all listed in stock exchanges (either in Shanghai, Shenzhen or in Hong Kong).

to a good number of innovation parks and incubators, research centres and laboratories, many of them affiliated with key universities and major local enterprises; moreover, the city is being able to attract FDI directed to R&D, as discussed before. The current match between Nanjing's PR and China's composition of aggregate demand, however, cannot be assumed to be eternal, and may be transitory and highly contingent on certain national-level policies which impact the country's composition and robustness of domestic demand.

With that last note in mind, one must conclude that the dissimilar set of institutional complementarities scrutinized in this thesis should not be perceived as antagonist 'models' – they are *not* competing against each other. The relative success of one locality *vis-à-vis* another will depend on the broader macroeconomic context, and cannot be judged in isolation. This should be an expected outcome of a study employing the institutional complementarities approach: recall that this theoretical perspective opens a possibility for the existence of alternative institutional arrangements, equally effective or efficient. This is a conclusion that runs against the idea of the existence of a set of 'best practices', to be universally adopted, in a 'one-size-fits-all' recipe fashion¹⁹⁴.

Indeed, one may even argue that these two institutional prototypes represented by Nanjing and Suzhou are actually interdependent and complementary *at the national level*. From a macroeconomic perspective, a locality prone to promote substantial trade surpluses is helpful in that it relaxes the country's balance of payments constraint (as discussed in chapter two). The growth trajectories of the East Asian newly industrialized countries (NICs) suggest that for a developing nation it is critical to promote trade surpluses and avoid prolonged periods of trade deficits. However, it is equally crucial to develop indigenous companies and not be a hostage of TNCs decisions. There is strong evidence suggesting that in general the core technological capabilities of TNCs remains vastly concentrated in their home countries, and TNCs do not have the voluntary tendency of embedding themselves in local learning relationships when they move to the developing world (Allen and Thompson, 1997; Gertler, 2003)¹⁹⁵. Moreover, a city like Nanjing, presenting higher wages than other similar cities in economic size, is important in boosting the country's domestic demand, therefore enhancing

¹⁹⁴ For Aoki, remember that the observed varieties and diversity of institutional arrangements can be seen as the epiphenomena of more basic, abstract, multiple-equilibria outcomes stemming from repeated games.

¹⁹⁵ In China, a compelling case suggesting the key importance of *large domestic* groups in dealing with TNCs is the one of Qingdao: domestic groups, like Haier, have played the leading role, orchestrating a complex supplier-buyer and R&D networks, with FIEs playing a supporting role. This model seems to have been more successful for the local economy (see Kim and Zhang, 2008).

the domestic absorption and facilitating the enlargement of the domestic market for indigenous companies (regardless of which city they are based in). Indeed, data for local GDP from the expenditure approach reveals that private consumption in Nanjing accounts for 35.05%, 36.05% and 37.17% of the local GDP for the years 2013, 2014 and 2015, respectively. The data for Suzhou is much smaller for the same three years: 26.75%, 27.60% and 28.23%¹⁹⁶.

The internal institutional heterogeneity found in China, as evidenced by the case studies conducted in this thesis, is not something new. As suggested in chapter four, China has a long story of relatively autonomous local states, and after the ‘reform and opening’ local states can be said to have been granted the necessary leeway to craft local developmental paths in accordance with the local conditions found in there. This diversity of local strategies, found in many distinct regions across the Chinese territory, can be said to be a hallmark of China’s distinctive brand of capitalism, combining central control in core issues but allowing local discretion in the observance of local conditions and in the forging of singular developmental strategies.

This research has built on this ongoing debate, and has ambitioned to shed a light on a particular case study, a comparison between Nanjing and Suzhou. The contribution of this thesis to the existing knowledge on the topic is two-fold: firstly, it offers a new framework to be employed by the interested scholar. As such, it opens new avenues for further research, by allowing the redeployment of the framework here developed in other localities in the country and thus enabling further investigations concerning the open-ended transformations taking place at prefecture-level cities in China. While well-established approaches all have important contributions to the topic, ranging from economic mainstream approaches (normally employing cross-section and panel data analyses) to studies carried out by non-economists (especially by economic geographers), none of them have adopted the institutional complementarities concept at the local level in combination with the Kaldorian approach to economic growth, as synthesized in chapter five. This new framework can be claimed to be an original contribution to this area of academic inquiry. Secondly, this research contributes to the better understanding of Nanjing and Suzhou themselves, in their own right. While countless studies on these two cities surely exists (and many were acknowledged in chapter

¹⁹⁶ Own calculations based on data from the JSBS (2014, 2015 and 2016)

six), this thesis has illuminated the institutional characteristics and growth performances of both cities in a unique manner. As such, the research has strengthened the overall academic scholarship and knowledge specific to Nanjing and Suzhou.

In spite of these contributions, this thesis is not without its own limitations. Firstly, some pertinent aspects on local economic growth were overlooked. For example, transportation costs, a variable dear to the NEG literature, was left behind. This was in part due to NEG's own theoretical flaws (as exposed in chapter two) and in part due to the theoretical approach privileged in this study, which normally neglects this variable. Secondly, and similarly, some aspects which could be touted as important drivers of regional economic growth particularly in China, like the construction sector, were not given full attention in this study. This was, again, mainly due to the theoretical lenses favoured in this study. In any case, the performance data on manufacturing and industrial output do not include data from construction and is consistent with the performance data on local GDP and total labour productivity, which include data on construction. Overall, the qualitative conclusions of the thesis seem to be unaltered. Thirdly, some empirical concerns may be raised. For instance, it may be claimed that knowledge spillovers and other externalities from different cities may affect the growth performances of Nanjing and Suzhou, but this is not reflected in the peculiar structural-institutional characteristics of each city. While this concern is valid, there are restrictions on data availability which preclude the incorporation of insights of this kind to the empirical strategy adopted in this study. Moreover, while those externalities surely exist, the ability of absorbing them is still city-specific and may be a function of the structural-institutional characteristics presented. At any rate, there will always be relevant variables missing in a research which proposes to investigate economic growth, and there will always be issues concerning the operationalization of some theoretical concepts. The purpose of this thesis is not to provide a full and complete account of the phenomena under scrutiny, nor to provide a definitive answer to the problem. Rather, it was sought to underscore what I believe are the central aspects to this type of inquiry, in a theoretically and empirically consistent manner.

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Appendices

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**1) Manufacturing sectors and their respective total employment for the national level:
Years 2003, 2009 and 2015**

Unfortunately, there are some data limitations when one aims at scrutinizing manufacturing sectors in China. Ideally, data utilizing output should be used in order to assess the changing demand composition of all the manufacturing sectors, but output data is not consistent throughout the whole period of analysis, or is absent. The same caveat applies for assets data. Employment data, however, is available and is consistent at this level of disaggregation. Hence, the tables below were calculated based on employment data at the national level, guaranteeing consistence and comparability throughout the whole period of analysis.

The list contains 28 manufacturing sectors, after the exclusion of public utilities and mining.

Some further adjustments were made in order to make the lists from all the three years comparable:

-In 2003 and 2009 the sectors ‘manufacturing of rubber’ and ‘manufacturing of plastics’ were lumped together in order to be directly comparable with the ‘manufacture of rubber and plastic products in 2015.

- The sector ‘manufacture of transport equipment’ includes the sectors ‘automotive manufacturing’ and ‘Rail, shipbuilding, aerospace and other transportation equipment manufacturing’.

Table A.1: China's manufacturing sectors and their respective employment figures for 2003, 2009 and 2015

Manufacturing Sectors		Average annual workers (10,000 people)		
		2003	2009	2015
农副食品加工业	Processing of Food from Agricultural Products	181.66	337.66	424.75
食品制造业	Manufacture of Foods	101.07	162.7	212.05
饮料制造业	Manufacture of Beverages	89.00	119.02	166.82
烟草制品业	Manufacture of Tobacco	21.22	20.03	20.89
纺织业	Manufacture of Textile	499.16	617.04	464.45
纺织服装、鞋、帽制造业	Manufacture of Textile Wearing Apparel, Footware, and Caps	289.19	449.31	449.49
皮革、毛皮、羽毛(绒)及其制品业	Manufacture of Leather, Fur, Feather and Related Products	165.37	257.57	293.94
木材加工及木、竹、藤、棕、草制品业	Processing of Timber, Manufacture of Wood, Bamboo, Rattan, Palm, and Straw Products	63.83	130.67	140.78
家具制造业	Manufacture of Furniture	43.39	98.56	120.08
造纸及纸制品业	Manufacture of Paper and Paper Products	113.95	152.64	134.95
印刷业和记录媒介的复制	Printing, Reproduction of Recording Media	59.41	82.13	98.07
文教体育用品制造业	Manufacture of Articles For Culture, Education and Sport Activity	87.14	122.36	234.49
石油加工、炼焦及核燃料加工业	Processing of Petroleum, Coking, Processing of Nuclear Fuel	59.66	84.95	93.29
化学原料及化学制品制造业	Manufacture of Raw Chemical Materials and Chemical Products	311.33	440.49	492.03
医药制造业	Manufacture of Medicines	115.40	160.48	230.48
化学纤维制造业	Manufacture of Chemical Fibers	34.22	41.45	46.65
橡胶和塑料制品业	Manufacture of Rubber and Plastics Products	203.15	357.78	339.68
非金属矿物制品业	Manufacture of Non-metallic Mineral Products	396.22	508.91	589.86
黑色金属冶炼及压延加工业	Smelting and Pressing of Ferrous Metals	255.91	323.02	364.9
有色金属冶炼及压延加工业	Smelting and Pressing of Non-ferrous Metals	106.60	177.64	202.42
金属制品业	Manufacture of Metal Products	171.24	319.31	380.82
通用设备制造业	Manufacture of General Purpose Machinery	283.49	486.52	471.28
专用设备制造业	Manufacture of Special Purpose Machinery	205.31	309.24	354.12
交通运输设备制造业	Manufacture of Transport Equipment	311.77	498.33	662.54
电气机械及器材制造业	Manufacture of Electrical Machinery and Equipment	265.12	535	629.87
通信设备、计算机及其他电子设备制造业	Manufacture of Communication Equipment, Computers and Other Electronic Equipment	273.46	663.64	909.26
仪器仪表及文化、办公用机械制造业	Manufacture of Measuring Instruments and Machinery for Cultural Activity and Office Work	71.96	112.61	105.23
工艺品及其他制造业	Manufacture of Artwork and Other Manufacturing	103.22	136.82	42.75
	Total	4882.45	7705.88	8675.94

Source: Own elaboration, based on data from NBS (2004, 2010a and 2016)

2) Manufacturing sectors growth rates of employment for the national level: periods 2003-2009 and 2009-2015

The table below is calculated based on table A.1, and displays the employment growth rates for each manufacturing sector between 2003 and 2009 and between 2009 and 2015.

Table A.2: Manufacturing sectors growth rates of employment for the national level (2003-2009 and 2009-2015)

Manufacturing sectors growth rates of employment for the national level			
Manufacturing Sectors		2003-2009	2009-2015
农副食品加工业	Processing of Food from Agricultural Products	85.87%	25.79%
食品制造业	Manufacture of Foods	60.98%	30.33%
饮料制造业	Manufacture of Beverages	33.73%	40.16%
烟草制品业	Manufacture of Tobacco	-5.61%	4.29%
纺织业	Manufacture of Textile	23.62%	-24.73%
纺织服装、鞋、帽制造业	Manufacture of Textile Wearing Apparel, Footware, and Caps	55.37%	0.04%
皮革、毛皮、羽毛(绒)及其制品业	Manufacture of Leather, Fur, Feather and Related Products	55.75%	14.12%
木材加工及木、竹、藤、棕、草制品业	Processing of Timber, Manufacture of Wood, Bamboo, Rattan, Palm, and Straw Products	104.72%	7.74%
家具制造业	Manufacture of Furniture	127.15%	21.83%
造纸及纸制品业	Manufacture of Paper and Paper Products	33.95%	-11.59%
印刷业和记录媒介的复制	Printing, Reproduction of Recording Media	38.24%	19.41%
文教体育用品制造业	Manufacture of Articles For Culture, Education and Sport Activity	40.42%	91.64%
石油加工、炼焦及核燃料加工业	Processing of Petroleum, Coking, Processing of Nuclear Fuel	42.39%	9.82%
化学原料及化学制品制造业	Manufacture of Raw Chemical Materials and Chemical Products	41.49%	11.70%
医药制造业	Manufacture of Medicines	39.06%	43.62%
化学纤维制造业	Manufacture of Chemical Fibers	21.13%	12.55%
橡胶和塑料制品业	Manufacture of Rubber and Plastics Products	76.12%	-5.06%
非金属矿物制品业	Manufacture of Non-metallic Mineral Products	28.44%	15.91%
黑色金属冶炼及压延加工业	Smelting and Pressing of Ferrous Metals	26.22%	12.97%
有色金属冶炼及压延加工业	Smelting and Pressing of Non-ferrous Metals	66.64%	13.95%
金属制品业	Manufacture of Metal Products	86.47%	19.26%
通用设备制造业	Manufacture of General Purpose Machinery	71.62%	-3.13%
专用设备制造业	Manufacture of Special Purpose Machinery	50.62%	14.51%
交通运输设备制造业	Manufacture of Transport Equipment	59.84%	32.95%
电气机械及器材制造业	Manufacture of Electrical Machinery and Equipment	101.80%	17.73%
通信设备、计算机及其他电子设备制造业	Manufacture of Communication Equipment, Computers and Other Electronic Equipment	142.68%	37.01%
仪器仪表及文化、办公用机械制造业	Manufacture of Measuring Instruments and Machinery for Cultural Activity and Office Work	56.49%	-6.55%
工艺品及其他制造业	Manufacture of Artwork and Other Manufacturing	32.55%	-68.75%
	Average Growth	57.83%	12.59%

Source: Own elaboration, based on data from NBS (2004, 2010a and 2016)

3) How to calculate the top 25th percentile

After calculating the growth rates of each manufacturing sectors, one can order them in a decreasing order, starting from the top growing sector and ending with the sector featuring the lowest growth rate. Tables A.3 and A.4 below displays these orderings for both periods of time:

Table A.3: Growth rates of China's manufacturing sectors (2003-2009)

Growth rates of manufacturing sectors, 2003 - 2009		
Manufacturing Sectors	Growth rate	Rank
Manufacture of Communication Equipment, Computers and Other Electronic Equipment	142.68%	1
Manufacture of Furniture	127.15%	2
Processing of Timber, Manufacture of Wood, Bamboo, Rattan, Palm, and Straw Products	104.72%	3
Manufacture of Electrical Machinery and Equipment	101.80%	4
Manufacture of Metal Products	86.47%	5
Processing of Food from Agricultural Products	85.87%	6
Manufacture of Rubber and Plastics Products	76.12%	7
Manufacture of General Purpose Machinery	71.62%	8
Smelting and Pressing of Non-ferrous Metals	66.64%	9
Manufacture of Foods	60.98%	10
Manufacture of Transport Equipment	59.84%	11
Manufacture of Measuring Instruments and Machinery for Cultural Activity and Office Work	56.49%	12
Manufacture of Leather, Fur, Feather and Related Products	55.75%	13
Manufacture of Textile Wearing Apparel, Footware, and Caps	55.37%	14
Manufacture of Special Purpose Machinery	50.62%	15
Processing of Petroleum, Coking, Processing of Nuclear Fuel	42.39%	16
Manufacture of Raw Chemical Materials and Chemical Products	41.49%	17
Manufacture of Articles For Culture, Education and Sport Activity	40.42%	18
Manufacture of Medicines	39.06%	19
Printing, Reproduction of Recording Media	38.24%	20
Manufacture of Paper and Paper Products	33.95%	21
Manufacture of Beverages	33.73%	22
Manufacture of Artwork and Other Manufacturing	32.55%	23
Manufacture of Non-metallic Mineral Products	28.44%	24
Smelting and Pressing of Ferrous Metals	26.22%	25
Manufacture of Textile	23.62%	26
Manufacture of Chemical Fibers	21.13%	27
Manufacture of Tobacco	-5.61%	28

Source: Own elaboration, based on data from NBS (2004 and 2010a)

Table A.4: Growth rates of China’s manufacturing sectors (2009-2015)

Growth rates of manufacturing sectors, 2009 - 2015		
Manufacturing Sectors	Growth rate	Rank
Manufacture of Articles For Culture, Education and Sport Activity	91.64%	1
Manufacture of Medicines	43.62%	2
Manufacture of Beverages	40.16%	3
Manufacture of Communication Equipment, Computers and Other Electronic Equipment	37.01%	4
Manufacture of Transport Equipment	32.95%	5
Manufacture of Foods	30.33%	6
Processing of Food from Agricultural Products	25.79%	7
Manufacture of Furniture	21.83%	8
Printing,Reproduction of Recording Media	19.41%	9
Manufacture of Metal Products	19.26%	10
Manufacture of Electrical Machinery and Equipment	17.73%	11
Manufacture of Non-metallic Mineral Products	15.91%	12
Manufacture of Special Purpose Machinery	14.51%	13
Manufacture of Leather, Fur, Feather and Related Products	14.12%	14
Smelting and Pressing of Non-ferrous Metals	13.95%	15
Smelting and Pressing of Ferrous Metals	12.97%	16
Manufacture of Chemical Fibers	12.55%	17
Manufacture of Raw Chemical Materials and Chemical Products	11.70%	18
Processing of Petroleum, Coking, Processing of Nuclear Fuel	9.82%	19
Processing of Timber, Manufacture of Wood, Bamboo, Rattan, Palm, and Straw Products	7.74%	20
Manufacture of Tobacco	4.29%	21
Manufacture of Textile Wearing Apparel, Footware, and Caps	0.04%	22
Manufacture of General Purpose Machinery	-3.13%	23
Manufacture of Rubber and Plastics Products	-5.06%	24
Manufacture of Measuring Instruments and Machinery for Cultural Activity and Office Work	-6.55%	25
Manufacture of Paper and Paper Products	-11.59%	26
Manufacture of Textile	-24.73%	27
Manufacture of Artwork and Other Manufacturing	-68.75%	28

Source: Own elaboration, based on data from the China statistical yearbook (2010a and 2016)

There are two manners of calculating the top 25th percentile: the first consists in centring the calculation on the ranking of each sector, while the second consists in centring the calculation on the actual growth rates of each sector.

The first manner of calculating the percentiles follows the formula below:

$$\text{Rank} = \text{Percentile} / 100 * (\text{number of items} + 1)$$

Where:

-Number of items: 28 (total number of manufacturing sectors)

-Percentile: 25

-Rank: the final ordinal number indicating the position of the top 25th percentile sector according to the ranking list.

Substituting, the Rank equals to 7.25 (for both periods)

It means that the top 25th percentile of the data, according to the ranking criteria, falls at or below than the rank 7.25. Because rankings are ordered only in whole numbers, without allowing for fractions, the top 25th percentile of the data encompasses the seven top growing sectors. Hence we are led to the tables 6.5 and 6.6 presented in chapter six.

The second manner of calculating the percentiles follows the formula below:

$$\text{Growth Rate} = [(Hi - Li) * \text{Percentile}] + Li$$

Where:

Hi: growth rate of the highest growing sector

Li: growth rate of the lowest growing sector

Percentile: 0.75

Growth Rate: the final growth rate indicating where the top 25th percentile should be positioned, considering the distribution of growth rates of each sector

Substituting for the first period (2003-2009), the final growth rate is 105.6%.

It means that the top 25th percentile of the data, according to the growth rates of each sector, falls at or above than the growth rate of 105.6%. The next step is to refer back to the table A.3 and check how many sectors display growth rates equal or superior than 105.6%. It turns out that only two sectors qualify: ‘manufacture of computer, communications and other electronic equipment’, registering a growth rate of 142.68%, and the ‘manufacture of furniture’, registering a growth rate of 127.15%. The third on the list, ‘processing of timber, manufacture of wood, bamboo, rattan, palm, and straw products’, grew only 104.72%, below the threshold of 105.6%. In other words, it is below the top 25th percentile criteria.

Substituting for the second period (2009-2015), the final growth rate is 51.54%.

It means that the top 25th percentile of the data, according to the growth rates of each sector, falls at or above than the growth rate of 51.54%. The next step is to refer back to the table A.4

and check how many sectors presented growth rates equal or superior than 51.54%. In this period only one sector qualifies: ‘manufacture of Articles for Culture, Education and Sport Activity’, registering a growth rate of 91.64%. The second on the list, ‘Manufacture of Medicines’, grew only 43.62%, below the threshold of 51.54%. In other words, it is below the top 25th percentile criteria.

Note that while for the first criteria (ranking) the results are the same for both periods, for the second criteria (growth rates) the results differs for the periods. That happens because the ranking criterion is independent of the actual growth rates of each sector. The only information that matters in the total number of sectors (28) and the percentile sought. As these two variables are the same for both periods, the results are the same. The second criterion (growth rates) takes into consideration the actual growth rates of each sector, regardless of their ranking positions. As a result, with the distribution of growth rates among sectors being different in the two periods, the final result is also likely to differ. Hence, for the second period (2009-2015) only the first top growing sector can be considered as belonging to the top 25th percentile, because it has grown much faster than the second top growing sector. During the first period (2003-2009) the growth rates distribution was slightly less skewed, allowing for the inclusion of a second sector among the top 25th percentile.

4) Specialization and diversification indexes

The calculation of the specialization and diversification indexes is based on Duranton and Puga (2000).

4.1) Specialization Index

The specialization index can be obtained by quantifying the share of each city’s largest sector in local employment. Denoting s_{ij} as the share of industry j in city i , one can define the following specialisation index:

$$ZI_i = \underset{j}{Max}(s_{ij})$$

However, some sectors account for a larger share of the *national* employment than others. To correct for possible distortions, then, it is important to calculate the city’s relative (rather than

absolute) specialisation index. The relative specialization index is obtained by dividing the share of each sector in local employment by its share in the national employment:

$$RZI_i = \text{Max}_j(s_{ij}/s_j)$$

Where, s_j is the share of industry j in national employment.

4.2) Diversification Index

The diversification index can be obtained by calculating the inverse of the sum of the square of each sector share in local employment for all sectors.

$$DI_i = 1/\sum_j s_{ij}^2$$

Again, one must consider the differences in sectorial employment shares at the national level, and correct for that. The relative diversity index is obtained, thus, by summing for each city, over all sectors, the absolute value of the difference between each sector's share in local employment and its share in national employment:

$$RDI_i = 1/\sum_j |s_{ij} - s_j|$$

If economic activity in the city under scrutiny is fully concentrated in one sector the diversity index is equal to one, and it increases as activities in the city become more diverse.

5) Calculation of Specialization and Diversification Indexes

5.1) Relative Specialization Index

Nanjing and Suzhou's relative specialization indexes were calculated for the national-level seven top-growing manufacturing sectors, for 2004 and 2013. The results are presented in tables 6.7 and 6.8, in chapter six.

Moreover, the relative specialization index was calculated for both Nanjing and Suzhou for their leading manufacturing sector, for both 2004 and 2013. For both cities, and for both periods, the leading sector was the 'manufacture of computer, communications and other electronic equipment'. The results are presented in figures 6.14 in chapter six. For the year 2004, the figure is repeated in figures 6.7 (first sector) and for the year 2013 the figure is repeated in figure 6.8 (fourth sector)

The calculation was done following the formula presented in section 4.1 and utilizing the data on the tables A.5, A.6 and A.7 presented in section 6 of this appendix.

5.2) Relative Diversity Index

The relative diversification index was calculated for Nanjing, Suzhou and Southern Jiangsu, for 2004 and 2013, considering all the 28 sectors presented in table A.7 of this appendix (section 6.2). The calculation followed the formula presented in section 4.2 of this appendix. The results were presented in figure 6.13 in chapter six.

6) Manufacturing sectors and their respective shares of the total manufacturing output: 2004 and 2013.

6.1) Local data: Southern Jiangsu, Nanjing and Suzhou

The list contains 31 manufacturing sectors, after the exclusion of public utilities and mining.

Data on employment is not available for manufacturing at the local level. The only data available is for output.

Some adjustments were made in order to make the lists of both years (2004 and 2013) comparable:

-In 2004 the sectors ‘manufacturing of rubber’ and ‘manufacturing of plastics’ were lumped together in order to be directly comparable with the ‘manufacture of rubber and plastic products in 2013.

-In 2004 the sector ‘automotive manufacturing’ is included under the sector ‘Rail, shipbuilding, aerospace and other transportation equipment manufacturing’

Table A.5: Manufacturing sectors and their respective output as share of the total: Southern Jiangsu, Nanjing and Suzhou (2004)

Manufacturing Sectors and their respective output as share of the total (%) - 2004			
Manufacturing Sectors	Southern Jiangsu	Nanjing	Suzhou
Total	100.00	100.00	100.00
农副食品加工业 (Agricultural and sideline food processing industry)	1.28	1.12	1.47
食品制造业 (Food industry)	0.68	0.82	0.62
酒、饮料和精制茶制造业 (Wine, beverages and refined tea manufacturing)	0.21	0.54	0.17
烟草制品业 (Tobacco Products Industry)	0.34	2.18	0.00
纺织业 (Textile industry)	9.22	1.38	10.94
纺织服装、服饰业 (Textile and apparel, apparel industry)	3.32	2.36	2.95
皮革、毛皮、羽毛及其制品和制鞋业 (Leather, fur, feathers and footwear industry)	0.55	0.55	0.71
木材加工和木、竹、藤、棕、草制品业 (Wood processing and wood, grass products industry)	0.52	0.07	0.39
家具制造业 (Furniture Manufacturing)	0.34	0.10	0.63
造纸和纸制品业 (Paper and Paper Products)	1.72	0.39	2.16
印刷和记录媒介复制业 (Printing and Recording Media Reproduction)	0.44	0.44	0.37
文教、工美、体育和娱乐用品制造业 (Cultural/educ/sports/entertainment products manufacturing)	0.55	0.49	0.71
石油加工、炼焦和核燃料加工业 (Petroleum processing, coking and nuclear fuel processing)	1.62	7.62	0.39
化学原料和化学制品制造业 (Chemical Raw Materials and Chemical Products)	9.86	18.69	5.63
医药制造业 (Pharmaceutical manufacturing)	0.86	1.00	0.77
化学纤维制造业 (Chemical fiber manufacturing)	1.63	0.30	1.87
橡胶和塑料制品业 (Rubber and Plastic Products Industry)	3.28	1.95	3.45
非金属矿物制品业 (Non - metallic mineral products industry)	2.67	3.21	2.15
黑色金属冶炼和压延加工业 (Smelting and Pressing of Ferrous Metals)	10.81	11.19	7.71
有色金属冶炼和压延加工业 (Smelting and Pressing of Nonferrous Metals)	2.92	0.85	2.81
金属制品业 (Metal products industry)	3.43	1.70	2.39
通用设备制造业 (General Equipment Manufacturing)	5.68	3.88	4.34
专用设备制造业 (Special equipment manufacturing)	2.86	1.44	2.49
铁路、船舶、航空航天和其他运输设备制造业 (Rail, shipbuilding, aerospace/other transportation equipment manufacturing)	4.43	7.50	2.47
电气机械和器材制造业 (Electrical machinery and equipment)	7.02	4.78	6.07
计算机、通信和其他电子设备制造业 (Computer, communications and other electronic equipment manufacturing)	21.76	23.95	33.43
仪器仪表制造业 (Instruments Manufacturing)	1.51	1.07	2.43
其他制造业 (Other Manufacturing Industries)	0.32	0.37	0.23
废弃资源综合利用业 (Comprehensive utilization of waste resources)	0.14	0.09	0.24
金属制品、机械和设备修理业 (Metal products, machinery and equipment repair industry)	0.00	0.00	0.00

Source: Own elaboration, based on data from JSBS (2004)

Table A.6: Manufacturing sectors and their respective output as share of the total: Southern Jiangsu, Nanjing and Suzhou (2013)

Manufacturing Sectors and their respective output as share of the total (%) - 2013			
Manufacturing Sectors	Southern Jiangsu	Nanjing	Suzhou
Total	100.00	100.00	100.00
农副食品加工业 (Agricultural and sideline food processing industry)	0.97	1.38	1.06
食品制造业 (Food industry)	0.54	0.94	0.55
酒、饮料和精制茶制造业 (Wine, beverages and refined tea manufacturing)	0.19	0.50	0.17
烟草制品业 (Tobacco Products Industry)	0.00	0.00	0.00
纺织业 (Textile industry)	4.10	0.78	4.92
纺织服装、服饰业 (Textile and apparel, apparel industry)	2.74	3.01	2.50
皮革、毛皮、羽毛及其制品和制鞋业 (Leather, fur, feathers and footwear industry)	0.34	0.55	0.23
木材加工和木、竹、藤、棕、草制品业 (Wood processing and wood, grass products industry)	0.48	0.11	0.20
家具制造业 (Furniture Manufacturing)	0.18	0.15	0.33
造纸和纸制品业 (Paper and Paper Products)	1.20	0.27	1.65
印刷和记录媒介复制业 (Printing and Recording Media Reproduction)	0.57	0.36	0.65
文教、工美、体育和娱乐用品制造业 (Cultural/educ/sports/entertainment products manufacturing)	0.75	0.93	0.74
石油加工、炼焦和核燃料加工业 (Petroleum processing, coking and nuclear fuel processing)	2.07	8.84	0.42
化学原料和化学制品制造业 (Chemical Raw Materials and Chemical Products)	10.21	14.63	5.73
医药制造业 (Pharmaceutical manufacturing)	1.12	1.75	0.84
化学纤维制造业 (Chemical fiber manufacturing)	2.61	0.38	4.29
橡胶和塑料制品业 (Rubber and Plastic Products Industry)	1.96	1.38	2.59
非金属矿物制品业 (Non-metallic mineral products industry)	2.62	2.83	1.96
黑色金属冶炼和压延加工业 (Smelting and Pressing of Ferrous Metals)	10.35	6.35	9.62
有色金属冶炼和压延加工业 (Smelting and Pressing of Nonferrous Metals)	3.57	2.63	2.18
金属制品业 (Metal products industry)	3.91	3.14	2.76
通用设备制造业 (General Equipment Manufacturing)	5.41	3.21	6.24
专用设备制造业 (Special equipment manufacturing)	3.70	2.20	3.37
汽车制造业 (Automotive Manufacturing)	4.76	13.04	3.02
铁路、船舶、航空航天和其他运输设备制造业 (Rail, shipbuilding, aerospace/other transportation equipment manufacturing)	2.11	2.78	0.81
电气机械和器材制造业 (Electrical machinery and equipment)	11.51	6.27	8.27
计算机、通信和其他电子设备制造业 (Computer, communications and other electronic equipment manufacturing)	19.74	17.44	33.19
仪器仪表制造业 (Instruments Manufacturing)	1.66	2.34	1.16
其他制造业 (Other Manufacturing Industries)	0.06	0.00	0.02
废弃资源综合利用业 (Comprehensive utilization of waste resources)	0.32	0.28	0.54
金属制品、机械和设备修理业 (Metal products, machinery and equipment repair industry)	0.01	0.05	0.00

Source: Own elaboration, based on data from JSBS (2014)

6.2) National level data

The list contains 28 manufacturing sectors, after the exclusion of public utilities and mining, and also the exclusion of ‘comprehensive utilization of waste resource’ and ‘Metal products, machinery and equipment repair industry’. Data for these two final sectors are not disclosed at the national level and present negligible values at the local level under scrutiny. Their exclusion, therefore, does not affect the final conclusions.

The calculation was based on total assets, in order to keep the consistency between 2004 and 2013. Output data is not available, and employment data was available only in 2004 but not in 2013.

Some adjustments were made in order to make the lists comparable in both years (2004 and 2013)

- Data for the ‘manufacture of automobiles’ for the year 2004 is included in the sector ‘Rail, shipbuilding, aerospace and other transportation equipment manufacturing’

-In 2004 the sectors ‘manufacturing of rubber’ and ‘manufacturing of plastics’ were lumped together in order to be directly comparable with the ‘manufacture of rubber and plastic products in 2013.

Table A.7: Manufacturing sectors and their respective assets as share of the total: China national (2004 and 2013)

Share of each manufacturing sector in the national total (%)		
Manufacturing Sectors	2004	2013
Processing of Food from Agricultural Products	3.22	4.10
Manufacture of Foods	1.76	1.73
Manufacture of Liquor, Beverages and Refined Tea	2.25	1.96
Manufacture of Tobacco	2.01	1.22
Manufacture of Textile	5.78	3.33
Manufacture of Textile, Wearing Apparel and Accessories	1.84	1.69
Manufacture of Leather, Fur, Feather and Related Products and Footwear	1.11	0.94
Processing of Timber, Manufacture of Wood, Bamboo, Rattan, Palm and Straw Products	0.70	0.78
Manufacture of Furniture	0.51	0.62
Manufacture of Paper and Paper Products	2.48	1.99
Printing and Reproduction of Recording Media	1.02	0.66
Manufacture of Articles for Culture, Education, Arts and Crafts, Sport and Entertainment Activities	0.57	0.91
Processing of Petroleum, Coking and Processing of Nuclear Fuel	3.18	3.57
Manufacture of Raw Chemical Materials and Chemical Products	8.07	9.15
Manufacture of Medicines	3.19	2.84
Manufacture of Chemical Fibres	1.32	0.96
Manufacture of Rubber and Plastics Products	3.37	2.73
Manufacture of Non-metallic Mineral Products	5.83	6.17
Smelting and Pressing of Ferrous Metals	9.85	9.62
Smelting and Pressing of Non-ferrous Metals	3.33	4.89
Manufacture of Metal Products	2.67	3.28
Manufacture of General Purpose Machinery	5.35	5.39
Manufacture of Special Purpose Machinery	3.61	4.55
Manufacture of Automobiles	-	7.18
Manufacture of Railway, Ship, Aerospace and Other Transport Equipments	9.15	3.08
Manufacture of Electrical Machinery and Apparatus	5.88	7.12
Manufacture of Computers, Communication and Other Electronic Equipment	10.05	7.80
Manufacture of Measuring Instruments and Machinery	1.19	1.00
Other Manufacture	0.70	0.30
Total	100	100

Source: Own elaboration, based on data from NBS (2005 and 2014)

7) Migrant population

The data on migrant population displayed in figures 6.8 and 6.9 is obtained by subtracting the total registered population from the total permanent population. The permanent population includes registered residents (disregarding the ones who left the city half a year or more before) and non-registered residents (disregarding the ones who are residing in the city for less than half a year). Therefore, the difference between the permanent and registered populations gives a proxy for the total migrant population of each city.

The Jiangsu statistical yearbook started to disclose data on the permanent population only in 2006, so the calculations for migrant population, as defined above, can only be presented from 2006 onwards.

8) Manufacturing structure, by degree of technological content

Table 6.1 in chapter six presented data on the manufacture structure of Southern and Northern Jiangsu, displaying the figures for both ‘labour-intensive and resource-intensive’ and ‘high-skill and technology-intensive’ manufactures as share of the total manufacturing output. This classification was made following the UNCTAD division of manufactured goods by degree of manufacturing groupings, and consists in four categories: Labour-intensive and resource-intensive manufactures; Low-skill and technology-intensive manufactures; Medium-skill and technology-intensive manufactures; and High-skill and technology-intensive manufactures.

More information on the UNCTAD data classification can be found at: <http://unctadstat.unctad.org/EN/Classifications.html>

The UNCTAD division of manufactured goods by degree of manufacturing groupings follows UNCTAD (2016b) and can be found online at: http://unctadstat.unctad.org/EN/Classifications/DimSitcRev3Products_Tdr_Hierarchy.pdf

I tried to follow the UNCTAD division as close as possible, but in some cases the subcategories offered by the Chinese statistical system did not match exactly the UNCTAD presented one. In the end, the final classification of Chinese manufacturing subsectors became as it follows:

(1) Labour-intensive and resource-intensive manufactures

农副食品加工业 (Agricultural and sideline food processing industry)

食品制造业 (Food industry)

酒、饮料和精制茶制造业 (Wine, beverages and refined tea manufacturing)

烟草制品业 (Tobacco Products Industry)

纺织业 (Textile industry)

纺织服装、服饰业 (Textile and apparel, apparel industry)

皮革、毛皮、羽毛及其制品和制鞋业 (Leather, fur, feathers and footwear industry)

木材加工和木、竹、藤、棕、草制品业 (Wood processing and wood, grass products industry)

家具制造业 (Furniture Manufacturing)

造纸和纸制品业 (Paper and Paper Products)

(2) Low-Skill and technology-intensive manufactures

印刷和记录媒介复制业 (Printing and Recording Media Reproduction)

非金属矿物制品业 (Non - metallic mineral products industry)

黑色金属冶炼和压延加工业 (Smelting and Pressing of Ferrous Metals)

有色金属冶炼和压延加工业 (Smelting and Pressing of Nonferrous Metals)

金属制品业 (Metal products industry)

其他制造业 (Other Manufacturing Industries)

金属制品、机械和设备修理业 (Metal products, machinery and equipment repair industry)

(3) Medium-Skill and technology-intensive manufactures

文教、工美、体育和娱乐用品制造业 (Cultural/educational/sports/entertainment products manufacturing)

橡胶和塑料制品业 (Rubber and Plastic Products Industry)

通用设备制造业 (General Equipment Manufacturing)

汽车制造业 (Automotive Manufacturing)

电气机械和器材制造业 (Electrical machinery and equipment)

废弃资源综合利用业 (Comprehensive utilization of waste resources)

(4) High-skill and technology-intensive manufactures

石油加工、炼焦和核燃料加工业 (Petroleum processing, coking and nuclear fuel processing)

化学原料和化学制品制造业 (Chemical Raw Materials and Chemical Products)

医药制造业 (Pharmaceutical manufacturing)

化学纤维制造业 (Chemical fiber manufacturing)

专用设备制造业 (Special equipment manufacturing)

铁路、船舶、航空航天和其他运输设备制造业 (Rail, shipbuilding, aerospace/other transportation equipment manufacturing)

计算机、通信和其他电子设备制造业 (Computer, communications and other electronic equipment manufacturing)

仪器仪表制造业 (Instruments Manufacturing)