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**The Evolution of Trade Theory:
An Exercise in the Construction of Surrogate or
Substitute Worlds?**

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Thesis submitted for the degree of PhD in 2013

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Declaration for PhD thesis

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Finally, I would like to dedicate this work to the memory of my deceased friend and colleague Eoghan Garvey, who always encouraged me to trust my instincts and who inspired by example.

Abstract

This thesis interrogates the nature of neoclassical economics through the prism of the evolution of international trade theory. A unique feature of trade theory has been the successful transformation of the core hegemonic model of comparative advantage from its roots in classical political economy into forms compatible with neoclassical thought. This continuity serves to convey an image of progress in economic thought. Moreover, the type of abstraction associated with the comparative advantage model of trade, and the counter-intuitive insights that derive from it, have been frequently cited by economists as proof of the scientific nature of orthodox economic theorising. It is therefore important to appraise the epistemic nature of trade theorising, especially given the paucity (until relatively recently) of empirical work.

It is the contention of this thesis that the development of trade theory was characterised by a retreat from social realism. Model development was increasingly driven by tractability considerations as opposed to ontological ones. Initially, this necessitated describing the social environment in an unrealistic, idealised way. The narrowing associated with this process reached its culmination when trade theory was successfully subsumed as part of general equilibrium analysis. Latterly, this process of narrowing has been reversed, with trade modelling allowing for various forms of imperfect markets. This thesis attempts to show that the process of narrowing and subsequent broadening was driven, primarily, by internal, discipline-specific considerations of tool development and not by concerns with empirical adequacy. This assertion is bolstered by considering the multifarious stratagems used by mainstream theorists to defend core trade propositions from various empirical challenges during the period of mainstream model construction. The ultimate effect of these theoretical endeavours has been the creation of “substitute worlds” that do little to facilitate a deeper understanding of causal reality, possibly because that is not their purpose.

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Chapter 1. Introduction

1.1 Preamble

This thesis is a critical analysis of the history of international trade theory from its classical political economy roots to its current neoclassical expressions. The over-arching aim of the work is to use the subject matter of international trade to cast some light on the nature of neoclassical economic theorising. Theorising in the domain of international trade has not been static and understanding the forces driving its change is central to appreciating the methodological commitments of neoclassical theory. The central issue at stake is whether economics as currently practised is a rigorous, vibrant discipline that casts light on social reality in a useful way or whether it is a degenerate scholastic exercise whose methodological commitments hinder rather than help our understanding of economic and social processes. A related and equally important issue is to address whether there are natural limits to the scientific aspirations of a subject like economics (given the social material that is its essence) and whether current practices strain at those limits or whether there is scope for improvement? Before explaining why the history of international trade theory was the chosen subject matter of this work, and the hoped for contribution of this exercise, presentation of some disciplinary context is in order so as to contextualise the debate and highlight the particular cognitive challenges raised by the subject matter of economics.

1.2 Disciplinary Context

The ambiguous status of economics as a science is partly revealed by its status at the annual Nobel awards in recognition of scientific and cultural advances. Economics became what could be best described as an associate member of the club sixty seven years after the awarding of the first Nobel prizes, with the establishment of the Sveriges Riksbank Prize in Economic Sciences in Memory

of Alfred Nobel. Yet, it is the only social science discipline so honoured. Moreover, in recent times, the distinction between it and the other sciences appears blurred, to the extent that all winners (excluding the Peace prize) are honoured at the same ceremony. Furthermore, it is commonplace to refer to the honour as the Nobel Prize in Economics.

The peculiar nature of economics was further on display at a roundtable discussion of the 2008 winners late that year (Nobel Media AB/BBC World 2008). 2008 was the year that Paul Krugman won the economics prize for his work on international trade. As international trade is the subject matter of this thesis (in which Krugman's work and views figure prominently) and, given the timing of the meeting (just a few months after the economic and social world was rocked by the collapse of Lehman Brothers), there is a certain piquancy to the discussion that ensued. When invited to discuss the nature of their work, the prize winner in literature, Jean-Marie Le Clezio, demarcated his work from that of the scientists, saying that it was a different creative process, insofar as science reflects a belief in progress and the future.¹ The achievements that the (natural) scientists in their respective disciplines recounted ranged from: the discovery of the HIV virus; the discovery of a protein that changes colours when injected into animal cells, thus allowing researchers to study cell processes that were previously invisible; and the discovery of the mechanism of broken symmetry in subatomic physics that can aid our understanding of the asymmetry between matter and anti-matter in the universe. When it was Krugman's turn, he said that his work showed why similar countries often produce similar goods but still beneficially trade with one another. If Krugman felt any embarrassment about using the term "scientific discovery" in the same company as the natural scientists (not to speak of appropriating the term to describe what, arguably, the informed punter in the street might already know), nothing in his demeanour revealed any such discomfort. In a separate documentary recounting what it was that he did, Krugman referred to the reception of his work by his relatives, for whom his insights appeared to be obvious. His reaction was that it took a lot of work to make these obvious

¹ Interestingly, at the end of the hour long discussion, he alluded to a previously unseen link between literature and science, which he defined as the coherence of humanity in all its diversity.

insights clear. In the same documentary clip, fellow economist (also his spouse) Robin Wells spoke of how good one has to be to be as simple in one's theorising as Krugman, while an earlier recipient of the Nobel distinction, Joseph Stiglitz, applauded the commonsense aspect of Krugman's work with the aphorism that commonsense can be quite uncommon (Nobel Media AB 2008).

However, what the 2008 roundtable discussion did underline very starkly was that economics as a discipline is undoubtedly important, to the extent that it allows us to understand economic processes and to take measures to avert or mitigate adverse economic events. All the winners present spoke of the expected impact on the funding of their various research projects as a result of the recently erupted global financial and economic crisis. According to Krugman (and few would dispute his diagnosis), this was the most serious economic crisis since the great depression of the 1930s, but he averred that it could have been much worse, but for the advances that had been made in economic science in the interim. For him, improved economic knowledge is our only defence (Nobel Media AB/BBC World 2008).

Yet, there was an element of double-speak about Krugman's discourse. He asserted that better economic data is for economists, what the Hadron collider is for physicists. This, from a man whose work has been distinctly unempirical, in the sense of studying and explaining the data on actual evolving patterns of economic activity and trade! Nevertheless, Krugman's work is considered to be so impactful within trade theory that, according to Stiglitz, it is appropriate to talk of trade theory before and after Krugman (Nobel Media AB 2008). Some economists and historians of trade allege that what he helped to initiate was nothing less than a paradigm shift or a new scientific research programme (see Greenaway and Milner, 1987; Bense and Elmsie, 1992; Maneschi, 2002). Given the subject matter of this thesis, this is an issue to which we will return. Suffice it to say what is at issue is the cognitive status of the type of work for which Krugman has gained so much renown within the economics fraternity, a distinction that, arguably, evokes some bewilderment at both ends of the scientific spectrum, among lay people and possibly even the natural scientists.

Before proceeding, I wish reveal my own position, which is that of the optimist, in the sense of believing that the material that economics should aim to understand is worthy of the designation science and that, therefore, it is appropriate to ask whether or not, there has been progress? One can subscribe to the view that economics is a science and yet despair at the practices of economists. This was the perspective of the historian of economic thought and methodologist, Mark Blaug, for whom neoclassical economics was insufficiently empirical and suffused with “the disease of formalism” (Blaug, 2002, p. 34). By contrast, for fellow methodologist Uskali Maki, formalism in economics (by which both he and Blaug mean model building) is, potentially, entirely respectable and scientifically useful, given the nature of the subject matter of economics, where controlled experiments are difficult to conduct. But while Maki may defend economic modelling as a scientifically useful thought experiment, he does so, only to the extent that the models constructed are “representative systems” which have the capacity to resemble real world social systems in some useful way (Maki, 2009, pp. 74-75). Maki also distinguishes between the, by and large, observable social material that the economist deals with (which he designates “commonsensibles”) and the unobservable material that is the domain of natural scientists (such as quarks, photons, magnetic fields), which place different ontological constraints on respective scientific practitioners (Maki, 2009, pp. 87-88). For him, economic theorising in model form amounts to the re-arranging of these commonsensibles, which, if done right, will permit the commonsense picture to be replaced by a scientific one in such a way as to reveal the unexpected and paradoxical, such as “arguments for trade [and] against protectionism” (p. 88). All of which brings us to the commonsense material that Krugman works with, the model building that has been his forte and, the often paradoxical and counter-intuitive insights that can ensue from such theorising.

1.3 Why International Trade?

The choice of trade theory (and how it has evolved historically from its classical roots into neoclassical forms) as the subject matter through which to evaluate neoclassical economics, has been partly accidental and partly historical (in a

personal sense). I had originally intended to address trade and labour issues but two constraints emerged. First, the thesis would have exceeded the requisite length and, second, from the work that I did do on labour, it seemed that there is a degree of methodological heterogeneity between labour and trade. Research in labour economics appears to be more empirically oriented than that in trade, which has been heavily biased in favour of theorising, until relatively recently. Saying that, neoclassical work in labour economics is also very revealing of the methodological commitments of neoclassical economics, but that is another day's work. The other reason for adopting international trade as my subject material is due to previously abortive attempts to try to incorporate "commonsense assumptions" into trade models in order to render trade theorising more "real" or, as Maki might say, in order to get more resemblance between models and social reality. This proved to be a very difficult, if revealing task. At every turn, I was stymied by the methods to which I was committed by virtue of my training. In order to incorporate unemployment into trade models, I had to explain it in terms of factor market imperfections. In order to make such imperfections endogenous (and not amenable to elimination by removing the source of the imperfection) I had to start down the road of looking at efficiency wages. The model was quickly spiralling into unwieldy obfuscatory complexity. Or, to explain why the dynamic effects of trade might differ to the static effects, I felt compelled to construct a non-traded human capital formation sector (more commonly referred to as education) into the standard trade model as well as slip in external effects on offspring from parental education that impacted on the human capital formation process. Looking at the impact of multinationals on host country welfare looked more promising. Here, tools of game theory could be applied. But, as I quickly discovered, game theory imposes its own constraints, not least, the focus on bilateral games, often with singular strategic variables but, most restrictive of all, the commitment to hyper-rationality and equilibrium outcomes. In short, I discovered the hard way, the price one pays for adopting mainstream tools, even if one's intention is to use the tools to question the articles of faith of the mainstream.²

² I was reminded of this rather forcefully in the fourth chapter of this thesis; that is to say, the technical

One reason why trade theory is a useful template by which to evaluate the nature of neoclassical theorising is because of its unique position (among the various economic sub-disciplines) of exhibiting a seeming continuity between its classical and neoclassical expression. The hegemonic version of comparative advantage to which most neoclassical economists pay tribute was that expressed in labour input terms by the classical economist David Ricardo.³ It is this version that was successfully transformed into forms compatible with neoclassical commitments, such as those that underpin general equilibrium analysis.⁴ Superficially at any rate, such continuity and development confer an aura of scientific advance, where a more general theory subsumes a more particular one. In addition, trade theory commands a lot of respect among practising economists and historians of economic thought, especially historians of international trade. While the views of practising economists will be cited later in the thesis, the following is reflective of the assessment of those (admittedly very few) historians of economic thought who have focused their intellectual energies exclusively on international trade. “economists are at their best when they speak out on international trade ... they speak with the almost unanimous backing of professional opinion” (Gomes, 1990, p. vii). For Maneschi, “The concept [comparative advantage] ... continues to receive plaudits” (Maneschi, 1998, p.1), while, in a later work when addressing whether there has been progress in international trade theory, his answer was “a qualified yes” (Maneschi, 2002, p. 251). Irwin concluded “Free trade ... remains as sound as any proposition in economic theory which purports to have implications for economic policy is ever likely to be” (Irwin, 1996, p. 8). Years later, his

challenges one has to overcome just to read the work. While that may, in part, reflect on the cognitive capacity of the reader, it also says something about the nature of the theorising, which often seems to be unduly complex given the meagre insights yielded by that complexity.

³ There is debate as to whether the concept of comparative advantage should be attributed to Ricardo or Robert Torrens (or even James Mill). See Ruffin (2002, 2005) and Aldrich (2004) for more on the question of precedence. Ricardo is the figure focused upon in this thesis as it was his exposition that influenced John Stuart Mill and through him early neoclassical economists like Alfred Marshall and Francis Edgeworth.

⁴ This version of international trade theory is predicated on the assumption of international resource immobility. This is one reason why trade and foreign direct investment (FDI) is not addressed in this thesis, since the latter did not form part of mainstream theory. Also, when theories of FDI started to emerge in the 1960s, they were developed by business school professors, not economists. Only with the development of new trade theory was FDI incorporated into mainstream scholarship, though arguably it still occupies a peripheral position, as a cursory scan of any mainstream international economics textbook will reveal.

conviction as to the soundness of the free trade policy stance had not abated, even as his bemusement as to why such a policy stance continued to generate controversy remained, “free trade is always under attack” (Irwin, 2009, p. xiii). This he can only attribute to “misconception” which he finds incongruous in the light of “its palpable benefits” (p.7).

A final reason why international trade is such a fascinating case study is because it underwent what many consider to be a seismic shift in the nature of its research programme in the 1980s, under the influence of, amongst others, Paul Krugman. This was reflected in the new heuristic of modelling trade in imperfectly competitive markets. The perfectly competitive market framework, that had appeared such an inviolable construct of neoclassical trade theorising for much of the twentieth century, was blithely abandoned. Even more astounding was the abandonment of general equilibrium in many instances, as occurred with the emergence of the very popular oligopolistic trade models. Such a change in direction begs the question of why it happened when it did, what were the forces driving such change, and whether the change could be considered progressive. If the latter, then it would seem to justify what economists do and the methods that they deploy, since it would appear to show that ontological considerations are never completely sidelined by issues of tractability, but merely represent a temporary holding phase until such time as economists have developed the tools to incorporate more complex aspects of social reality into their models. Whether the emergence of new trade theory (which is how trade in imperfect markets was designated) is progressive or not depends in part on the forces driving the change in trade theory, and that question is the leitmotif of this thesis.

1.4 The Fundamental Question

To my mind, the fundamental questions in economics generally and, in the context of this thesis, in international trade in particular, are more normative than positive. Standard economic analysis likes to distinguish between the two, claiming that the domain of the economist lies in positive analysis, *what will happen if*, while it is up to policymakers to decide on normative objectives. But

the positive invariably has implications for the normative. The appeal of the comparative advantage theory of trade (which will be discussed in more detail later) resides in its normative implications; that is to say, its unambiguous conclusion that all countries, regardless of their level of economic and/or technological development, can engage in free commerce with more advanced countries and be better off than they would have been if such commercial intercourse had been restricted in some way. Or, if one looks at how Krugman describes his work, that of showing why similar countries producing similar goods can still beneficially trade, it is both a positive and normative statement. The normative standard I adopt to evaluate the impact of trade in this study is a conservative one. A country is considered to have benefited from international trade if it results in increased economic efficiency that translates into higher aggregate levels of national consumption (and income).⁵

While it may be uncontroversial to designate the material that economic theorists deal with as commonsensible, in that most people understand what it represents, very often, there is nothing remotely commonsensible about the positive and, especially the normative, conclusions of these theories. Indeed, the process of theorising (what Maki refers to as the re-arrangement of commonsensibles) routinely gives rise to outcomes that are not at all intuitive. Rather than be dismayed by the layperson's mystification and inability to comprehend the deeper insights of economic theory, it has been my impression that, on the contrary, many economists delight in the non-accessibility of their work and the paradoxical, counter-intuitive conclusions that may arise from it. One can speculate why this is the case, but a not too outlandish explanation may be that it justifies what they do. If the answers were obvious and intuitive, then the status of economics as a specialist discipline might be called into question. This is not to say that just because outcomes are counter-intuitive that they are necessarily wrong, or that economists are acting in bad faith, but it is worthy of note how neoclassical economic models frequently ignore those very commonsensibles which, if incorporated into their models, might give rise to

⁵ This is not to minimise the importance of distributional issues or non-income issues such as human rights and the environment and how they fare under different trading regimes. It is simply to see whether the claims that are made for trade and trade policy satisfy the efficiency claims as routinely alleged.

more ambiguous normative conclusions. Also, worthy of (sociological) study is what happens to the commonsense intuition of students as they proceed with their economic studies. I am assuming (possibly presumptuously) that most students who opt to study economics do so because they want answers to the big questions. The most obvious of these relate to poverty and growth and, in particular, how some societies successfully transitioned from being economically poor to being economically prosperous and, most importantly, whether their economic achievements are replicable?⁶

1.5 A Parable on how an Economics Education can exercise Commonsense

The purpose of this section is, as indicated in the heading, to relay some of the commonsense concerns that students have about the positive and normative conclusions of textbook international trade theory, and how these concerns are typically addressed by academic economists. While the tone adopted may seem tongue in cheek, the substantive issues are valid and the typical academic responses are representative of the position of most neoclassical trade economists.

An early encounter that students have with trade policy issues (often in an introductory principles course) is via the not too complicated partial equilibrium diagram, generally (and erroneously) attributed to Alfred Marshall. This serviceable vehicle is used to show the positive and normative effects of trade. The effect of the removal of tariffs, import quotas or other forms of trade interference, are revealed through their impact on domestic price, domestic

⁶ Other less obvious but even more challenging subjects that may engage the curious student are the environmental limits to growth and/or whether an alternative economic model of society is conceivable that is not dependent on the growth imperative. It is worthy of note that fundamental questions of this nature were raised by bourgeois economists such as John Stuart Mill and John Maynard Keynes. Mill was wedded to the classical Ricardian view that growth would eventually cease but did not consider such an outcome to be necessarily a bad thing, provided that output per capita was sufficient in some material sense (Mill, 2004 [1848], pp. 690-692). For Keynes, the lure of technological progress lay in its potential to reduce the length of the working week, hence freeing workers to pursue other non-material, but presumably enriching, pursuits (Keynes, 1963 [1930], p. 369). In a strange twist of social fate, topics such as the necessity of growth and/or how to harness technological progress in a socially beneficial way, are further removed from the discussion agenda today than they were in past periods when output per capita was considerably lower than it is currently. We have ceased to ask why, with all our economic progress, output is so unequally distributed (and becoming more so), and why so many workers are currently so time poor, contrary to Keynes's benign expectations?

production, domestic consumption and trade, as represented by demand and supply schedules in that particular market.

This form of representation does not do too much violence to any commonsense notion that the student may harbour. Doubt usually only starts to emerge when the professor moves on to discussing the normative or welfare aspects of the policy decision. The standard representation of the gains from trade liberalisation is via the euphemistically named consumer and producer welfare triangles. If the diagram is representative of an import-competing sector, it is not unusual for the student to inquire as to what happens to those who lose their jobs as a result of trade liberalisation. The standard response is to be told that unemployment does not exist in these models. The resources released from the contracting import-competing sector will be more profitably employed in alternative expanding sectors to which their capacities are better suited. If the student persists asking how can the professor be so sure, he/she will be told that this trade model represents long-run equilibrium and that in the long run all resources will be efficiently employed because that is how markets work (if allowed) and, in any case, unemployment would not be rational. Certainly, unemployment may be a short-run phenomenon due to the frictions associated with resource re-allocation, but short-run hitches should not be allowed to deter policy initiatives that are ultimately beneficial.

This explanation may or may not satisfy the new student to economics. Typically, those for whom such a model makes no sense, since it appears to assume what needs to be empirically proven, may at this juncture abandon their economic studies, on the grounds that the discipline is not answering the questions which were the reason for them studying economics in the first place. The more persistent and hardier souls may believe it is only right to give the discipline the benefit of the doubt in the hope that, once they have mastered its tools, they too will be privy to the insights that come from studying economics. The next challenge to their undeveloped commonsense notions of how economies work may come when they study international trade as a separate sub-discipline in its own right. Here, they will encounter the doctrine of comparative advantage and be told, in no uncertain terms, that technological and economic backwardness is never a reason not to adopt a liberal trade policy.

But, burdened with their commonsense shackles, they may proceed to inquire how exactly the economically-backward country is meant to compete with its more economically-advanced rivals. In response, they will be patiently told that there are two aspects to sectoral competitiveness: the productivity of resources used; and the cost of those resources. Since the cost of resources should reflect their aggregate productivity in the country as a whole, then the technologically challenged country will have no difficulty in competing in sectors where it has a comparative advantage, as its productivity disadvantage is more than compensated for by the relative cheapness of its resources. Moreover, those same collective resources will earn more in a real sense when exposed to the imperatives of international competition, since they will be more rationally deployed and, moreover, some goods can now be purchased more cheaply than heretofore from international sources. In case the force of the message does not fully permeate the student's commonsense defences, he/she will be informed that it gets even better, in that the trade policy prescription for national economic betterment in no way depends on the vagaries of international economic relations. So regardless of what policymakers in other countries decide to do, a given country can increase its national income by **unilaterally** removing the barriers to trade in its domestic market.

At this point, a certain amount of bemused head scratching may be the student's response, in particular if he/she has any awareness of the reality of international trade politics. How then does one make sense of trade wars? Why, to cite a recent example, does the European Union (EU) think it is punishing the Chinese by imposing a duty on their exports of solar panels to the EU, and why have the Chinese responded with a duty on EU wine exports to China? If the Chinese are foolish enough to dump (or sell at an artificially-reduced price) their solar panels in the EU market, why not accept the gift, as the economically literate professor would surely recommend. At this juncture, the professor must make a partial concession to realpolitik and explain such economically irrational behaviour by pointing to failures in the policy formation process. Such irrational mercantilist hokum pokum exists because policy-making is subject to political pressures and the rational response of a re-election conscious politician to organised lobby groups is to adopt a mercantilist approach to trade policy,

where the power of import-competing lobbies is balanced by the power of exporter-led lobbies. This translates into the maxim: access to foreign markets for domestic goods is a positive, access to the domestic market for foreign goods is a concession.

A final example of a frequent commonsense notion that the socially and historically aware student might harbour is that it can make economic sense for governments to protect certain sectors of the economy, in order to assist in its transformation. To the student's eyes, it seems obvious that more prosperous countries have always been those that have produced more elaborated or higher value added goods. The nature of higher value added goods may have changed historically, but the principle remains: national economic prosperity is rarely associated with the production of primary commodities. The professor's response to this particular commonsensible will depend on where he/she is on the perfect-imperfect market spectrum. If more disposed to thinking of markets as perfect (or at least perfectible), the response will be that if countries were meant to produce higher value added goods, it would have happened. One has to trust the desire for gain of the profit-maximising capitalist. The cost of the investment or length of time before profit would be realised are not legitimate reasons not to have confidence in private sector initiative. What is meant to be will be and vice-versa. Markets know best. By contrast with this economically fatalistic view, the professor, who does not feel confident enough to deny the existence of imperfect markets, is forced in logic to acknowledge (at least in principle) the case for protection. But it is generally the case that even this self-designated liberal will do so reluctantly. He/she will underline that the nature of the intervention depends on the nature of the imperfection and its empirical significance. Besides, even if all these boxes are ticked, there are still a host of other non-economic reasons to be hesitant about the desirability of intervention. That, the student will be told, is why most trade economists, even those who develop models acknowledging the imperfect nature of markets, are realistic free traders.

At this point, the student either definitively walks away from this strange discipline whose commonsensibles suitably re-arranged seem to yield such

strange, counterintuitive economic conclusions or else they succumb to the doctrine. The latter is more likely if he/she discovers in themselves an aptitude for logical puzzles and if this aptitude is increasingly academically-rewarded in their new social environment. A feature of the surrender is that certain empirical commonsensibles (such as unemployment, differential sectoral productivity of resources, economies of large scale production) either feature less on their emerging theoretical landscape or, if they do make an appearance, they do in a distinct way that allows them to integrate successfully with the main corpus of theory. This tendency of mainstream theory to ignore what many believe are socially relevant commonsensibles may explain why such commonsense concerns have been the focus of critics of orthodox economics (whether expressed against the dictates of classical political economy or neoclassical economics). It may also explain why these issues never go away completely and are, instead, subject to periodic resurrection. What does change, however, is how the mainstream responds to such episodes of periodic reappearance.

1.6 Objectives and Contribution

This thesis traces the evolution of international trade theory, starting with the contribution of classical political economy to the debate on the determinants of trade flows and the relationship between international trade and national economic prosperity, and culminating with contemporary research on essentially the same questions (albeit in a more complex social and economic world). It is not an exhaustive, comprehensive review, especially of classical political economists' theorising on international commerce. The focus is on those writers who are routinely cited as forebears of the neoclassical tradition, namely Adam Smith, David Ricardo and John Stuart Mill. Also, I do not address heterodox theories, be they neo-Ricardian or radical. So the primary focus is on neoclassical theory, what it appropriated from the classical political economy tradition and how it changed and evolved, with a view to understanding better the nature of neoclassical theorising.

In addition, this work is not unique in examining the historical evolution of international trade theory. While international trade gets scant coverage in most

histories of economic thought (a surprising phenomenon when one considers that early mercantilist writing on economic matters invariably dealt with international commerce), there are three such reviews by: Douglas Irwin (1996); Andrea Maneschi (1998); and Leonard Gomes (2003). I am indebted to all three, primarily for pointing me in the direction of some of the primary literature. The differences between this study and the works of the authors just cited are: in the interpretation of the primary material; in my understanding of the principal forces driving the evolution of neoclassical trade theory; in the assessment of the nature of that change; and in the focus on methodological issues. The latter comes to the fore particularly in disputes between mainstream theorists and their critics. What is noteworthy is what unifies the various critics - how similar criticisms arise at different points in time and the manner in which neoclassical theorists have responded to such challenges. There is also an interesting temporal dimension to these responses, which reflect where neoclassical economics was at that time; that is to say, what were its core inviolable concepts that had to be protected at all costs. As we shall see, the hard core of neoclassical economics (and neoclassical trade) has not remained static, which is why concessions that were inconceivable at certain times were readily accepted subsequently. This raises questions over the possible future direction of neoclassical theorising.

The central claim of this thesis is that theorising in international trade has been characterised by a retreat from social realism. On the face of it, this may seem a contentious claim, especially in light of the alleged paradigm shift that occurred in international trade in the early 1980s. Nevertheless, evidence will be marshalled to support this claim. Superficially, neoclassical theorising in trade up to the late 1970s was characterised by a process of narrowing. This was necessitated by the demands of translating the hegemonic, classical political economy concept of comparative advantage into forms compatible with core concepts in neoclassical economics. Such a transformation necessitated describing the economic and technological environment in an increasingly restrictive way. This restrictiveness was primarily a function of the commitment to mathematical formalism of neoclassical theory. Formalism in this instance took the form of representative hyper-rational agents with omniscient foresight

making the best use of their scarce resources in a price-taking environment, where all actions were subject to diminishing net returns. It was a form of theorising that reached its apotheosis when international trade theory was subsumed as part of general equilibrium theory, where the free trade equilibrium could be compared with restricted trade (or autarky) equilibrium. Despite the narrow environmental and technological restrictions imposed on international trade theory, comparative advantage was still a concept that had sufficient flexibility to allow for various determinants, such as international differences in technology, international differences in factor endowments or even international differences in preferences. The common element in these explanations was the view that difference is the reason for international trade. Moreover, regardless of its determinants, its policy implications remained unchanged; that is to say, that trade liberalisation is presumed to enhance unambiguously economic efficiency in the liberalising country.

A new heuristic developed in international trade theorising around 1980. The environmental and technological restrictions of the earlier period were abandoned with the acceptance of various kinds of product market imperfections and variable returns to scale at firm level. Superficially, these theoretical developments seem progressive, to the extent that there was less dissonance than before between the empirical reality of who trades what with whom and what theory seeks to explain. Furthermore, this new type of trade theorising was (in some manifestations) successfully integrated with a version of the comparative advantage story, so it appeared to supplement rather than supplant traditional neoclassical trade theory.⁷ But the crucial question remained and that was of the normative significance of such theories and their policy implications, especially for developing countries? To get an understanding of these issues, it is necessary to appraise just how different was this new form of theorising and what led to its emergence?

Just like its older relative, new trade theory is formalistic in its expression.

Markets may exhibit multifarious imperfections, but economic outcomes are

⁷ Trade in monopolistically competitive markets was reconciled with the factor endowments explanation of comparative advantage (see Helpman and Krugman, 1985).

still rationalised as being the equilibrium consequence of the behaviour of hyper-rational, self-regarding decision makers. Formally, the commitment to optimisation that characterised old trade theory continued to characterise new trade theory. It will also be argued that the impetus for change came less from the patent inadequacies of traditional neoclassical trade theory and more because it had run out of steam. Trade theory has been an exercise in deductive logic. The perfectly competitive, general equilibrium model had exhausted its possibilities. By contrast, relaxing the environmental constraints opened up a whole new vista of theoretical possibilities, especially as markets can be imperfect in so many different ways. But, and this is the fundamental caveat, a commitment to formalism of the sort that characterises trade theory (and possibly any type of mathematical formalism) constrains the manner in which social reality is described.

An early critic of formalisation was Allyn Young (1928). In prophetic fashion (given that he was writing before mathematical formalisation of economic theory really took off), he warned that the apparatus that economists were developing was standing in the way of a clear view of economic phenomena and was patently inadequate to the task of explaining economic change. There is a certain irony in realising that the object of his opprobrium was Alfred Marshall's partial equilibrium engine of discovery, which many would defend as having some claim to descriptive adequacy, by contrast with the virtual economy world of general equilibrium theorising. But his essential point still applies, even to the brave new world of new trade theory with its imperfect markets and occasional dynamics. It is evident in the full employment assumption that still applies in monopolistically competitive trade models (an assumption, along with zero economic rent, that is necessary to ensure "model closure"). It is apparent in partial equilibrium, oligopolistic, trade models where, despite allowing for barriers to market entry, economic rents and strategic behaviour, agents are constrained to strategise in a particular way, usually with an emphasis on bilateral games and singular strategic variables. It is patent in dynamic trade theory, where growth can only occur as a result of social effects that were not privately anticipated or considered by the relevant decision maker. Yes, market imperfections may be permissible now, but mainstream methods

still force reality into formal boxes, the better to apply the tools that continue to define neoclassical economics. What this thesis contests is the claim that this form of theorising leads to a better understanding of actual market processes. Additionally, even if enhanced understanding was a partial consequence of the deployment of neoclassical tools, it can at best be considered a random bonus since such justification is not strictly necessary. What has driven theory is the scope it offers for the application of the tools that neoclassical economics holds dear. If the tools are sufficient, great, if they are inadequate to the task, they are not abandoned, but rather the intransigent aspects of reality get ignored until such time (if ever) as they can be dealt with formally.

This obduracy of method imposes very high costs, since not only can it lead to the conscious exclusion of aspects of reality that the models cannot accommodate or accommodation in a way that is not particularly enlightening, it can also cloud perception of reality. For example, case studies revealing successful incidence of trade protection as part of a broader state-led economic strategy, have been acknowledged by orthodox trade theorists only very reluctantly and decidedly belatedly. One reason is because this form of evidence (historical or case studies) is not recognised as being sufficiently scientific by neoclassical practitioners. (The rigidity of formalism in theorising has been matched by a similar rigidity when it comes to empirical evidence). Irwin, in his honest (or naïve) fashion, said most economists are “suspicious of historical analysis” since “under ideal circumstances the implications of economic theory did not depend on historical circumstances” (Irwin, 1996, pp. 127-128). Even when the evidence could no longer be ignored, economists continued to cast doubt on the veracity of the mechanisms at play. For example, Paul Krugman in the latest edition of his very successful international economics textbook makes reference to pseudo-infant industries, claiming that some protected industries may have become competitive for reasons that have nothing to do with protection (Krugman et al, 2012, p. 188). Other economists have been known to claim that successful developing countries have succeeded **despite** their protectionist and mercantilist policies.

It is surely correct to be concerned with a discipline whose principal form of theorising and empirical engagement can lead to such blindness when it comes to social reality, and intolerance when it comes to forms of evidence, even if one does not go as far as Michael Hudson for whom, such blinkered, near-sightedness is the whole point of the exercise. He alleges that formalism serves to distract and obfuscate by expunging economic history, history of economic thought or anything that facilitates broad understanding or an awareness of alternatives (Hudson, 2000, p. 301). An objective of this thesis is to show that this need not be the case, nor was it always the case. Classical political economy writing on international trade was more variegated than is generally perceived from international economics text books. Likewise, early neoclassical economists were keenly aware of the social material that was the basis of their theorising and the manner in which the comparative advantage case for trade could be qualified. In addition, what united the different overt critics of liberal trade theory was a claim to be more empirically engaged. (The latter also frequently rejected methodological individualism and had a broader conception of significant causal forces). Resurrecting these debates is, in my view, a valuable exercise since, as Dow alleges, controversies reveal a range of ways of theorising about the economy (Dow, 2001). Showing what has been lost as trade theory became ever more formalised and engaging with the arguments of the critics of mainstream theory, therefore serves an important epistemological function of turning our gazes to methodological issues. This develops capacity for judgment on how best to develop theory to address future contexts (Dow, 2001).

The layout of this thesis is as follows. Chapter 2 traces the development of neoclassical trade theory from its roots in classical political economy to its ultimate incorporation into general equilibrium theory. It challenges the view that this development was progressive, arguing that, on the contrary, it was increasingly characterised by a retreat from social realism. It aims to show that not only were the classical economists who theorised about international trade ontologically engaged but the same is true for early neoclassical trade theorists. The qualitative change in theorising occurred as a result of the professions' increasing obsession with formalism, which changed the nature of the truth that

economists sought. Formalistic restrictions during this period of theory development necessitated designating the social and technological environment in an increasingly narrow way. It also expunged dynamic considerations since the formal apparatus constructed around optimising agents in perfectly competitive markets was insufficient to the task of describing change and growth.

Chapter 3 resurrects challenges to the benign comparative advantage parable that all countries can benefit from a liberal trading regime. What is striking about the challenges is how they appeal to commonsense. So, for example, a liberal trading regime is questioned if there are fears that it could lead to increased unemployment, or a restructuring of the economy in a way that results in resources being less productively employed on average. These caveats were raised by different economists, in different ways, at historically different periods of time. Accordingly, they have been responded to in very different ways depending on their intellectual climate. Cournot (1971 [1838]) developed a theory of trade that implicitly assumes variable employment. Schuller (1921 [1905]) explicitly challenged the assumption that “the total productive activity of every State represents a fixed quantity” (p. 377), while Keynes’s defence of mercantilism in chapter 23 of *The General Theory* was predicated on the assumption that the level of economic activity in a country is variable. Graham (1923) defends protectionism if it leads to the expansion of sectors where technology exhibits increasing returns to scale at the expense of sectors where decreasing returns to scale prevail. He made the argument that in such instances of varying returns to scale, protectionism, correctly applied, would lead to increased productivity of domestic resources. Manoilescu (1931) made a similar case, although his starting point was the heterogeneity of resource productivity across sectors of an economy, which he asserted as an empirical fact. Given this reality, he argued for commercial policy measures to stimulate those sectors where resources could be most productively employed. In addition to what could be considered static considerations, some of the most vociferous critics of a liberal trading regime, especially for developing countries, rested their case on dynamic or longer-run considerations. The infant industry case for protection, as articulated by Hamilton (1827 [1791]), Rae (1964 [1834]) and List (2005

[1841]), is that there is a discrepancy between policies that may be in a country's short-term interest (assuming unemployment and productivity are not adversely affected by trade liberalisation) and its long-term interest.

Protectionism may be desirable if it leads to the development of a country's productive power.

It will be shown that none of these eminently sensible arguments against free trade had any impact on neoclassical trade theory, especially in the period when it was being developed as part of general equilibrium analysis. Furthermore, the strategies deployed by neoclassical practitioners to address these foundational challenges are very revealing of the predilections of mainstream theoretical analysis. Cournot's trade theory is not generally known, despite the widespread use of his tools of analysis. Bickerdike (1905) and Haberler (1936) responded to Schuller's thesis by claiming that variable employment is either not possible or, if possible, must be optimal because all individuals behave rationally in their economic affairs. When Keynes went on to show that unemployment could exist and persist, notwithstanding rational behaviour, it was deemed a macroeconomic and not a trade issue. Graham's thesis was dismissed as not being compatible with competitive markets, unless such economies are external to the firm, and the latter possibility was deemed empirically unlikely. His main combatants were Knight (1924, 1925), Haberler (1936) and Viner (1964 [1937]). Manoilescu's thesis was subjected to reinterpretation by Ohlin (1931) as a case of inter-industry wage differentials and subsequently diminished by claims that such differentials were more speculative than real (Haberler, 1936). Finally, the infant industry argument, as made respectable by Mill (2004 [1848]), was accepted as the one true exception to the comparative advantage parable. Despite its exceptional status, it had no impact on neoclassical trade theory which developed along static lines without increasing returns. Subsequently, it was resurrected by Meade (1955), Kemp (1960) and Baldwin (1969) as a particular kind of market imperfection that was not very amenable to correction through the policy of trade protection.

So, effectively, neoclassical trade theory protected itself from dissonant challenges by a combination of measures that included: amnesia; dismissal of

the case due to its incompatibility with core theoretical claims (rationality and competitive markets); consignment of the issue to another sub-discipline in economics; misrepresentation and innocuous acceptance. This all goes to show that neoclassical economics fails to practise what it preaches, namely logical consistency and submission to the court of evidence, as alleged by Dow (2000, p. 169).

Chapter 4 addresses the broadening of the social canvas that occurred once the perfectly competitive market construct was abandoned and technology was permitted more multifarious forms in the sense of variable returns to scale. As already alluded to, some commentators allege that trade theorising when product markets exhibit various kinds of imperfections, was nothing less than a paradigm shift in theoretical outlook. Others assert that it was empirical considerations that led to a change in the nature of theorising (Maneschi, 2002, p. 241). All practitioners of the new art consider international trade theory to be enriched by the new paradigm, while Maki believes that recent developments in trade theory (and growth) were at least partly motivated by ontological considerations. *“I believe the tension between tractability conventions and ontological convictions is one of the driving forces of progress in economics”* (Maki, 2009, p. 82, his emphasis). In this chapter, as well as recounting the various new directions in economic modelling, I contest the assertion that the new heuristic was driven primarily by ontological considerations, claiming instead that it was internally generated by opportunities it afforded to deploy technical tools. Krugman admits as much saying that what made the difference was “the revolution in industrial organization theory during the 1970s” and that “the idea of applying these models to international trade was bound to occur to somebody” and that “the theory of international trade followed the perceived line of least mathematical resistance” (Krugman, 1990, p. 4). I also question how much light this new form of theorising has shed on understanding the relationship between international trade and economic development, especially with a view to informing policy.

Chapter 5 concludes with reflections on why trade theory has evolved as it has and whether this evolution can be considered progressive in the sense of

supplying constructive insights into trade policy issues. I suggest that this is not the case and that trade theory has become more fragmented as opposed to pluralistic and that its fragmentation is no more conducive to useful policy insights than was its previous monolithic structure. I intimate that the reason for this is that, even now, trade theory is constructed on foundations that are not adequate to empirical reality, and that this is because it is constrained by the nature of the theoretical tools that it uses. These are the tools that define neoclassical economics, tools that give the illusion of rigour but that act as a cover for narrow dogmatism when it comes to method. I suggest that the current unsatisfactory state of affairs in mainstream economic research will only change if practitioners recognise the constraints imposed by the unique social material with which they work. Such recognition should encourage greater openness when it comes to methods of economic and social investigation. While I am not optimistic that neoclassical practitioners are ready (or indeed equipped) to abandon their idealised substitute worlds in order to engage with messier imperfect reality, the current economic crisis presents a unique opportunity for other heterodox voices to be heard. This is the silver lining to the otherwise gloomy economic cloud and it is this occasion that needs to be grasped.

Chapter 2. Trade I: The Evolution of International Trade Theory: A Progressive Research Programme?

2.1 Introduction

International trade theory has always had unquestioned status within economics. One central reason for its standing among the economics fraternity is that the central propositions of international trade theory have been the standard bearer for the discipline's claim to scientific rank. The core proposition in the theory of international trade is that of comparative advantage. That the weight of scientific aspiration should be so heavily dependent on a single theory in a specialised area of economics is due to a number of factors. First, it is a theory with a relatively old (in terms of economics) lineage, having its origins in classical political economy but undergoing successful and successive transformation to render it compatible with neoclassical concepts. To the extent that durability gives, at a minimum, the impression that a theory has not yet been falsified, it confers on it a scientific aura. Second, the theory of comparative advantage is counter-intuitive and not amenable to commonsense logic. This confers on it a superficial similarity with the physical sciences, which most economists gleefully seize on to show that economics is not simply commonsense dressed up in fancy mathematical language but, rather, a discipline whose insights can only be divined by those with specialist training in the appropriate techniques. Furthermore, international trade theory generally has been among the most technically demanding fields of economics that has historically attracted the more mathematically-oriented. Given the centrality of certain mathematical techniques to the theoretical endeavours of the discipline, the harder the maths, the greater the social esteem for the scientific capabilities of its practitioners. Third (and most importantly), it is claimed that comparative advantage has universal applicability. According to the theory of comparative advantage, **all** countries, regardless of their level of economic development, will increase their aggregate wealth by engaging in free and unfettered trade. It is this claim, that free trade is a universally applicable policy independent of historical and social circumstances that, for economics, signals its distance from

the rest of the social sciences and its kinship with the natural sciences with their immutable laws of cause and effect.

The purpose of this chapter is to interrogate critically the standard view of the historical development of international trade theory. Orthodox accounts show theory developing in a relatively seamless way, as neoclassical theory refined the tools of analysis without (critically) losing the key normative insight as propounded by the early classical economists. The claim of continuity is all the more amazing when one considers that classical political economy was primarily dynamic, had an objective theory of value, and the focus of theoretical endeavours was to explain distributional shares in the context of conflicting social class interests. This contrasts starkly with the static, individualistic, harmonious world view of neoclassical theorising. As far as trade theory is concerned, the central assertion of this chapter is that while classical theorising was motivated by ontic concerns – that is a desire to understand and explain social reality – neoclassical theorising, especially by the 1930's, was primarily tool-driven with scant regard to the social material that the models were supposed to be representing. We assert that the defining period in which there was a retreat from ontic concerns in the interests of tool ascendancy was in the early neoclassical period, the age of Marshall. This is despite these early neoclassical economists being also keenly aware of the social material of their theorising and indeed much of their trade theorising produced uncomfortable results at variance with the central claims of orthodox theory. However, many of these early neoclassical economists (especially in Britain) were also anxious to establish the academic credentials of the emerging discipline of economics. This required an absence of academic dissent, the creation of a unified body of knowledge and consensus around core concepts and techniques. As a result, their more dissident conclusions were simply ignored and written out of the general history of the discipline. The sidelining of ontic concerns and the preoccupation of economists with tool refinement (a development that was to distinguish economics within the social sciences) led to a qualitative change in the nature of theorising. What Morgan says about economic theorising generally, applies with equal (if not greater) force to trade theory; that is to say,

that “Mathematical theorising changed the objects of study in economics and the kind of truth that economists sought” (Morgan, 2001, p. 14).

The rest of this chapter is organised as follows: section 2.2 sets the background by recounting the opinions of leading trade theorists, with a view to illustrating the role that international trade theory has traditionally played in bolstering the scientific claims of the discipline of economics generally, and the economist’s claim to authority. Section 2.3 looks at the treatment of international trade in general histories of thought and in specialised histories of trade. Section 2.4 presents the Whig view of the international trade theories of classical political economy. Here the emphasis is on the static theories of the key figures of the classical political economy era, which is the acquaintance that most contemporary students of international trade have with the writings of these economists in this field. Section 2.5 keeps with the theme of seeming continuity in theoretical developments by showing the extent to which the early neoclassical economists developed and refined the tools of analysis without adding to the classical model in any substantive sense. Section 2.6, by contrast, attempts to show that the position of classical political economists was not as simple and uncomplicated as their static theories imply. Their dynamic, ontically motivated theories resulted in more ambiguous conclusions regarding policy than emerges from their more famous static models. Also, it will be shown that these economists were far from being dogmatic free traders, which is how they are usually presented to students. Their position was typically nuanced. In a similar vein, section 2.7 focuses on the less well- known results of early neoclassical trade theory and how they were written out of the history of the discipline. Section 2.8 addresses the final transformation of comparative advantage into neoclassical form with the integration of neoclassical production theory, while section 2.9 shows how, after Samuelson, theoretical developments were completely tool-driven. This section critically assesses the utility of later neoclassical theorising in terms of its contribution to understanding the role of trade policy in economic development. Section 2.10 concludes.

2.2 The Scientific Claims of International Trade Theory

When neoclassical economics was still in its infancy and had yet to evolve into the highly abstract abstruse adult that it subsequently became, the intimations were there of its future development. The statistician Robert Giffen thought the case for free trade was uncontested when he wrote ‘The argument for free trade generally, as expounded by the great authorities from Adam Smith downwards, appears to me complete both theoretically and experimentally.’ (Giffen, 1904 as cited in Price, 1904, p. 372). Furthermore, the economist William Smart invoked the authority of the profession when he said “free trade was the economist’s policy” and “Economists ... if they speak in favour of protection, they lose their scientific reputation” (cited in Price, 1904, pp. 373-74).

Three-quarters of a century later, similar claims were being made for international trade theory and its policy implications by its most renowned practitioners. It is a view that is shared by historians of international trade as the following sample of quotes taken from the three most recent histories of the subject reveal. Regarding the principle of comparative advantage, Nobel prize winner Paul Samuelson says “Comparative Advantage is both true and non trivial” (Samuelson, 1969, p. 9, in Maneschi, 1998, p. 1), while for leading trade theorist Ronald Findlay it is “the deepest and most beautiful result in all of economics” (Findlay 1987, p. 514, in Maneschi, 1998, p. 1). These are very strong claims, here is a core economic proposition that, it is claimed, is true, relevant and, as if that was not sufficient to ensure its scientific status, it is also aesthetic. Its relevance lies in its policy implications as noted by Johnson who asserts “the proposition that freedom of trade is on the whole more beneficial than protection is one of the most fundamental propositions economic theory has to offer for the guidance of policy” (Johnson, 1971, cited in Irwin, 1996, p. 3). Small wonder then that international trade theory has such rank within a discipline like economics that has, especially in its neoclassical form, insisted to all and sundry, that unlike other disciplines in the social sciences, it is truly scientific. One cannot question the sincerity of Samuelson (whatever his objectivity) for whom “International trade theory has always been the queen realm of economic theory” (Samuleson, 1981, p. 150, in Gomes, 2003, p. 3),

while the economic historian and methodologist McCloskey must surely reinforce the inflated self-regard of these eminent scientists with the remark that “Since the inception of the discipline its best minds (many of them British) have put commercial policy at the centre of their thinking” (McCloskey, 1980 in Gomes, 2003, p. 3).

It is difficult to speak out against authority. In doing so one invariably runs the risk of being accused of either bad faith or simply inadequate understanding. An extreme example of the ferocity of the backlash that a questioning stance can evoke is that of Paul Krugman. He lambasted critics of comparative advantage, accusing some of being vulgar anti-intellectuals on a par with creationists and others of trying to be intellectually fashionable by attacking an idea that has iconic status among economists. However, his principal explanation for the ignorance displayed by critics of comparative advantage, is that the idea is a hard concept to grasp, precisely because it is a scientific one, and therefore not readily accessible to the untrained mind. (Krugman, 1998a, pp. 22-23). A less strident expression of essentially the same position is contained in the most recent book on the history of trade theory, by Leonard Gomes (2003). This book contains a wealth of detail not ordinarily found in histories of economic thought (or international trade), not just of doctrinal history, but also of the social context in which the debate over free trade has taken place in the last two centuries. Moreover, Gomes is a particularly unstrident, tentative writer when it comes to expressing his views. Nonetheless, when talking of comparative advantage, even he felt secure enough to echo the conventional view in economics about the status of comparative advantage and the intellectual capacity of its critics, saying that:

It is ... one of the few propositions in economics (perhaps the only one) that is both true and non-trivial – in the formal logic sense. It has been hailed as one of the truly great discoveries of economic analysis – a triumph of economic logic ... it [the latter] requires not only reflection but some economic sophistication as well ... Perhaps it is true today, as some experts ruefully complain, that it cannot be assumed that the principle is fully understood by

businessmen, or even for that matter, by all those charged with the conduct of international trade negotiations (Gomes, 2003, p. 40).⁸

It is salutary therefore to read what L. L. Price (the only economic theorist to side with the economic historians in the tariff reform debate of 1903) had to say about the appeal to authority to stifle debate. He called it despotic, profoundly unscientific and simply an “odium theologicum” (Price, 1904, p. 374). Rather ominously he predicted that the success of such authority would come at a heavy price for the study of economics. If the evolution of trade theory in the twentieth century is anything to go by, his fears have been vindicated.

2.3 The Treatment of International Trade in the History of Economic Thought

What emerges from general histories of economic thought is the sparse treatment of international trade, especially post mercantilist literature. In fact, there are many general histories of economic thought that completely exclude international trade theory. Examples of same are Hutchison (1953), Roll (1992), Ekelund and Herbert (1997) and Screpanti and Zamagni (2005). This is surprising given the claims that have been made for the status of trade theory within economics.

Other general histories are also sparing of ink when it comes to international trade and all tend to focus on the static version of classical trade theory. For example, Robbins (1998) quickly skips over Adam Smith’s case for trade, calling his example of the disadvantages of grape growing in Scotland “homely” and devotes most of the relevant chapter to an account of the comparative cost example of David Ricardo and its subsequent refinement by Mill. He says nothing of the main twentieth century version of comparative advantage, the

⁸ The irony of this rare expression of opinion by Gomes is that in the next sentence he incorrectly distinguishes between competitive advantage and comparative advantage, saying that, contrary to the view of businessmen or trade negotiators, the ability to produce goods at lower costs (than international competition) is not the same thing as comparative advantage (p.40). In fact if markets work the way the defenders of comparative advantage claim that they work (or can be made to work), then comparative advantage will always get revealed as competitive advantage; that is to say, the ability to sell at lower costs than the competition. What comparative advantage **is not**, is proof of superior productivity of resources.

Heckscher-Ohlin explanation. Blaug (1996) gives an account of Ricardian trade theory that is similar to Robbins, with numerical examples illustrating the principle of comparative advantage but he goes further than Robbins in that he mentions (briefly) how the pure theory of trade was reformulated by Heckscher and Ohlin in factor endowment and factor intensity terms. Backhouse (1985) is more detailed, in that he deals with international trade theory as it was in distinct eras, pre-1870, post-1890 and post-1939 but, like Robbins and Blaug, his is a didactic relatively uncritical account that presents neoclassical trade as a variation on classical trade theory. None of these accounts explores the dynamic aspects of classical trade theory and its policy implications. Neither do they interrogate the most important critique of classical trade theory, the infant industry argument for protection (primarily associated with the name of Friedrich List). Robbins (1998, p. 240) says that it was a powerful case that was accepted by John Stuart Mill (and Alfred Marshall) but that Mill came to regret his acknowledgement of the infant industry case for protection, a view that is echoed by Blaug (1996, p. 208). For Backhouse (1985, p. 58), the infant industry argument is accepted and not inconsistent with classical theory. This is in line with one (and not the only one) view expressed by Schumpeter who said “List’s argument about protection issues into the free trade argument ... Mill accepted the infant industry theory, evidently realising that it ran within free trade logic” (Schumpeter, 1994 [1954], p. 505). The idea that the infant industry argument is compatible with free trade logic will be challenged in the next chapter. Suffice it to say for now that even Schumpeter is not always consistent in his utterances on the topic of trade. For example when talking about what he viewed as an early glimpse of a general equilibrium type theory of optimal resource allocation, he says that “[it] cannot tell against any of those protectionist arguments, such as the infant industry or the underemployment argument, which visualise conditions in which that theorem does not apply.” (p. 376). However, Schumpeter does not delve into trade theory at any great length or depth but this may be because he felt that “free trade is but an element of a comprehensive system of policy and should never be discussed in isolation.”(p. 398). He also introduces a note of scepticism by reminding readers that advocacy of free trade policies was the main practical purpose of the classical writers and that this may have imparted a bias to their arguments (pp. 609-610),

just as he had previously asserted that it was probably England's historical situation that had prompted a conversion to free trade in the nineteenth century, despite the arguments for the generality of the case (p. 397).

In short, none of the above cited general histories of thought tells a very interesting, informed or fluid story about the development of trade theory. Some address elements in Adam Smith that were less amenable to subsequent neoclassical theorising, such as increasing returns and vent for surplus, while none addresses Ricardo's dynamic theory. Their accounts by and large recount the static version of comparative advantage, and few refer to the varied criticisms that have been historically levelled against the theory and its policy implications.

There are however a number of histories that deal exclusively with international trade, and these have the space to address the contribution of the lesser known writers as well as the various counterarguments made against the dominant theory. Irwin (1996) first attends to pre-classical and classical theories (but not neoclassical versions) and then proceeds to examine the various arguments used to challenge free trade is best conclusion of the classical economists. His position is clear from the outset, the purpose of the book is to show how free trade came to occupy such a commanding position in economics, and how free trade as a doctrine has maintained its intellectual strength. His position is very much the orthodox account of the subject, saying that it was Adam Smith who first established the strong presumption in favour of free trade and classical economists who solidified the case with the theory of comparative advantage, the bedrock on which it stands. He concludes that almost all of the attempts to critique the free trade argument fail to overthrow the general presumption in favour of free trade and that it remains one of the most durable and robust propositions that economic analysis has to offer for the conduct of economic policy. That Irwin is reductionist in his accounts of the various critiques and too quick to dismiss them is something that I will return to in subsequent chapters. His Whig approach is also criticised by Magnusson (2004, p. 8) on the grounds that ignoring a more historical approach is unlikely to yield increased

knowledge of how the free trade doctrine came to occupy its commanding position in economics.

Likewise, the approach taken by Maneschi (1998) is to judge historical accounts of the free trade doctrine from the perspective of modern theory. He concentrates on the origins and evolution of comparative advantage up to the present (though he does talk about new trade theory near the end of the book). He claims that one of the leitmotifs for the book is the dynamic interpretation of comparative advantage. While this might lead one to expect a much more nuanced and critical account of the policy implications of trade theory, and the book addresses at some length both Ricardo's dynamic theory and infant industry arguments for public intervention, the message of the book is incoherent, apart from his view that "Comparative advantage is a many-splendored thing that has (almost) general validity" (Maneschi, 1998, p. 230). For him [Ricardo's] dynamic view of comparative advantage goes hand in hand with his belief in dynamic gains from trade, which hold pride of place over static ones" (p. 215). He has one paragraph acknowledging that Ricardo's attention was focused on Britain and that in his scheme the agricultural country would suffer a dynamic loss (p. 72). So enthralled is Maneschi with comparative advantage, that he calls the infant industry argument an exceptionally dynamic view of comparative advantage, giving policy makers the freedom to create it (p. 9). Yet he sounds a sceptical note when he says that it is only in recent times that economists have provided rigorous criteria for protection, by which he means specifying the appropriate market failure (p. 121). In his conclusion he says that new trade theory, far from disqualifying comparative advantage, has, on the contrary, reinvigorated and given new meaning to the concept (p. 224). Yet in his introductory chapter, he says that economies of scale (a key element of much new trade theory) are inconsistent with comparative advantage (p. 24). At another juncture he says that comparative advantage is influenced by market distortions as well as by fundamental economic circumstances such as given technology or factor endowments (p. 230).

It is difficult to know what conclusions can be drawn from Maneschi's exhaustive account. Even if one takes a charitable view in assuming that the focus of his analysis is on positive (as opposed to normative) issues, such as the determination of trade flows, what is one to conclude? That countries will export the goods that they can produce at lowest relative cost? Obviously not, if their comparative advantage is in the future and has yet to be realised and may not be unless they depart from free trade orthodoxy. He does admit that there is no agreement about the term, closing his introductory chapter with the statement that "While economists have used and continued to use the term comparative advantage in different and often incompatible ways, it still remains an almost generally valid concept of the theory of international trade." (p. 9). He says that for some it means simply having lower autarky prices than one's trading partners while for others it means a positive correlation between lower autarky prices and net exports. He says that some interpret it in the old Ricardian sense of exogenously given technology, while others allow it to change over time or to be created (pp. 230-231). However it is not clear how a concept that has so many different and incompatible meanings could be almost generally valid? Valid in what sense? One may as well conclude with the tautology that whatever makes a country competitive makes it competitive, be it nature's endowments, climate, technology, historical accident or deliberate policy decisions taken at an earlier time. A country can successfully export goods that it can produce at lower cost than other countries. The question is do we need a theory (whatever name we give to it) to tell us this? What Maneschi does not clarify are the underlying common principles underpinning his analysis and, more pertinently, what policy implications derive from it. In this his book is at variance with that of Irwin (1996). The latter is very clear and unambiguous as to what makes economic theory scientific, and that is its universal reach and independence of historical contingency. His book attempted to dispense with all the arguments that undermined comparative advantage. By contrast, it seems like Maneschi attempts to embrace all the arguments and claim that they merely enhance comparative advantage. Maneschi's book, though incredibly detailed and comprehensive about the evolution of trade theory, contains at its heart a profound illogicality and as such fails to explain how trade theory came to occupy for so long such an eminent position in economics.

Gomes (2003) undoubtedly gives the most exhaustive and comprehensive account of how trade theory developed and attempts to contextualise developments with an account of historical and contemporary debates over the issue of free trade versus interference. However, while Irwin was narrow but clear in his analysis and Maneschi broader but incoherent, the impression that Gomes gives is of a reluctance to express his views. He appears to be hampered by a reverence for trade theory as traditionally interpreted, while at the same time claiming that classical trade theory was more nuanced than the way it is generally presented. So he quotes Blaug on the anti-landed class motivation of Ricardo's trade theory while agreeing with him that it has survived the removal of his prejudices (Gomes, 2003, p. 45). His account is also very Whiggish, when he speaks of how Ricardo's trade theory was not wedded to a labour theory of value, which was why its restrictive assumptions could be easily dispensed of in favour a more general theory of production without having to discard the results obtained from it (p. 51). He makes a strange point saying that "while the classical model is static the theory is dynamic" (p 83). Gomes seems to be saying that classical trade theory has been sold short and, like Maneschi, he does examine the dynamic elements of classical theories. However, his account is very confused and contradictory, though seemingly motivated by a desire to show that dynamic theories merely reinforce the static case for free trade. (The contradictions in his account of Ricardo's dynamic theory of trade will be addressed in section 2.6). He also looks at the infant industry argument for protection, concentrating very much on what List has to say, and accusing the latter of being selective in his criticism of Adam Smith. As I will attempt to show in the next chapter, Gomes's critique of List is selective and seems to miss his central point that Smith conceived of capital too narrowly by focusing on material capital. Furthermore, he attempts gratuitously to undermine List's case for industrialisation as the road to economic development by citing that the latter saw no industrial future for developing countries. For all Gomes's attempt to show that classical and early neoclassical economists like Mill and Marshall perceived the case for free trade within a dynamic framework, he shirks from the logical conclusion that once one introduces dynamic elements, the welfare implications of trade are ambiguous. He also fails to ask the interesting question

as to why it was that neoclassical theory became so narrow and static in its orientation and why the dynamic insights of List were shunted from mainstream trade theory to the low status periphery of development economics.

As already mentioned, it is hard to get a clear sense of Gomes's position especially on policy issues. When speaking of comparative advantage in the static sense, he is deferential. Yet when talking of the implications of imperfect markets for trade policy he says "trade theory has taken a leap into the concerns of the real world. It is now dealing with issues that are relevant to those actually engaged in and directly affected by new trends in trade policy. In this sense, the rethinking of the analytical bases of trade policy is a very useful step forward – not a walk on the wild side." (p. 165). This is not exactly a siren call to intervene and it is not easy to know how to reconcile it with his earlier rueful suggestion that the law of comparative advantage may not be fully understood by those charged with the conduct of international trade negotiations. If comparative advantage holds, then the best trade policy is no policy, in the sense of unilateral trade barrier dismantlement, regardless of the policy stances of other countries. That this is not a feature of international trade negotiations either means that national negotiators are ignorant of the national interest or that they are not interested in furthering the national interest (the public choice/rent seeking view of public policy) or that the comparative advantage model is at best incomplete or at worst wrong. On the other hand, the mercantilist orientation of most international trade negotiators makes perfect sense if markets are imperfect. The same ambiguity can be seen in Gomes's final chapter on globalisation. He talks of free trade being part of the solution to the slow pace of poverty reduction in the developing world, while admitting that it is a question of what kind of free trade. When he says that countries must change the structure of their economies before foreign trade will contribute to their development and that forcing them to conform to a free trade free market orthodoxy is no way to assist them to reach that later outward oriented stage, he could be invoking the spirit of List. The measures he recommends, however, are all very orthodox: free trade to import capital equipment and technology; access to developed country markets for the products of developing countries; the ceasing by developed countries of the subsidisation of agriculture; and more

free trade among developing countries themselves. There is no explicit mention here of allowing developing countries to protect their markets against more competitive products from developed countries. His final paragraph is a good metaphor for his whole stance on policy issues. He quotes someone who believes that economic policies and institutions around the world will continue to move in a liberal direction and that we are on our way to something better. His response is “One can only say Amen to such expressions of optimism” (p. 327). So one is left wondering does he hope that this liberal nirvana will come to pass or is he simply saying that he hopes if it does come to pass that it will deliver something better by way of positive social effects? With Gomes it is hard to know.

2.4 The Orthodox Version of Classical Trade Theory: The Static Model

2.4.1 *Adam Smith, the warm-up act*

The standard approach adopted in most textbooks is to start with Adam Smith’s static analysis of the gains from international trade, otherwise known as the theory of absolute advantage. For Smith, the benefits of international trade are similar in nature to the benefits of exchange between two individuals or two regions. If one can obtain goods at a lower price than it costs to make them, then material welfare is enhanced by allowing for such exchange. This means that in a world with unimpeded exchange, countries will export those goods that they can produce at lower real costs at home than abroad and import those goods that can be produced at lower real costs abroad. Thus the gains from trade, of whatever nature, are that it allows for the efficient allocation of resources and, therefore, the achievements of material well-being at lower real cost. “If a foreign country can supply us with a commodity cheaper than we ourselves can make it, better buy it of them with some part of the produce of our own industry employed in a way in which we have some advantage” (Smith, 1999 [1776], p. 33).

Smith implicitly assumes that a country will have an absolute advantage in the production of some good and the reasons for same are due to differences in climate, soil, natural or acquired advantages between countries. Moreover,

Smith appears to be laying stress on the short-term static benefits of exchange when he argues in favour of buying in the cheapest market regardless of whether the basis of a country's advantage is natural (and therefore immutable) or acquired (hence subject to change). "Whether the advantages which one country has over another, be natural or acquired, is in this respect of no consequence. As long as the one country has those advantages and the other wants them, it will always be more advantageous for the latter, rather to buy of the former than to make" (Smith, 1999 [1776], p. 35).

Unlike his successors, Smith does not distinguish between domestic trade and international trade on the basis of differences in the mobility of resources domestically and internationally. Neither does he have an international adjustment mechanism that translates real costs into money costs. Finally he fails to see that sometimes it can pay a country to import goods notwithstanding its own absolute advantage when it comes to the production of those goods. For this reason, his contribution to the pure theory of international trade is generally viewed as little more than a warm-up act for what came later, while his general advocacy in favour of free trade is acknowledged as the following statement by Bastable reveals. "Adam Smith, however, if he did not develop a definite theory, at least disposed for ever of the mercantilist doctrines and thus left a clear field for a new and more positive construction." (Bastable, 1903, p. 169).

2.4.2 Ricardo and his 4 magic numbers

David Ricardo's static theory of comparative advantage is hailed by many as his single most important contribution to economic theory, for all the reasons alluded to in the first section. It is a concept that survived the transformation of classical political economy into neoclassical economics, it is counterintuitive and it has clear unambiguous policy implications. The version of it that has educated many generations of students of international trade is expressed in a few pages of his famous chapter 7 on foreign trade (see Ricardo, 1996 [1817], pp. 94-98). The first thing Ricardo does is to distinguish between domestic and international trade on the basis of the presumed immobility of factors of production internationally (pp. 93-94). He then proceeds to elaborate the gains from specialisation and trade on the basis of a simple 2 sector, 2 country model

where labour is the only factor of production and is presumed to be mobile between sectors domestically but immobile internationally. The two countries cited are England and Portugal and the two goods are wine and cloth. Rather disingenuously, he assumes that England is the less productive of the two countries in the production of both goods. Less productive England can produce cloth and wine with the labour of 100 and 120 men, respectively, for one year, whereas the comparable figures for Portugal are 90 and 80 men (p. 94). In other words, the opportunity cost to England of producing one unit of cloth is 0.83 of wine foregone, which is less than it is for Portugal, where it is 1.125. The corollary to this is that the opportunity cost of wine production in Portugal (0.88 units of cloth) is less than it is in England (1.2). He then proceeded to show that if England produced only cloth and Portugal only wine and both engaged in trade on terms that differed from the domestic opportunity cost of labour, then both could gain, in the sense of being able to consume higher levels of both products than would be possible without trade. This example is what has become known as the theory of comparative advantage. Its policy implications are very clear. All countries, regardless of their level of development (as reflected in the productivity of their resources) can increase their wealth by specialising in the production and export of goods that they can produce at lower relative cost (in terms of output of other goods foregone) in exchange for goods that they can only produce at higher relative cost. Unlike Smith's static theory, absolute advantage is not a necessary criterion for a country to trade successfully.

2.4.3 Translating comparative advantage into competitiveness

The next thing that Ricardo needed to demonstrate was that his highly stylized barter example would carry over into a money economy. He does this by invoking Hume's specie flow; that is by assuming that a specie currency (like gold) would be distributed among countries in such a way as to allow trade to take place as it would under conditions of barter. So if less productive England were to pay labour the same as it is paid in Portugal, this would render the former uncompetitive and lead to the importation of cloth and wine from Portugal in exchange for specie. The subsequent redistribution of specie from England to Portugal would depress prices in the former country and increase

them in the latter. Eventually, in equilibrium, England would be able to export successfully cloth in exchange for Portuguese wine, while wages in Portugal would be higher than in England, reflecting its greater absolute productivity in the production of both goods (pp. 95-98). Effectively Portuguese wages relative to English wages could not be less than 1.11 (Portugal's absolute productivity advantage over England in cloth) or more than 1.5 (its absolute advantage over England in wine). Anywhere in this range and England will be able to undercut Portugal in the price of cloth whereas Portugal will be able to undercut England in the price of wine. Obviously, the closer it is to 1.5, the more trade benefits Portugal and vice versa if it is closer to 1.11. Anything outside this range however and one of the countries cannot compete and therefore foregoes all gains from trade.

This issue of the determination of relative wages gets more complicated when one extends the analysis to a multi-commodity world. Senior claimed that it was relative wages in the export sector that determined the general level of wages in a country, which in turn depended on the comparative prices of its export goods. According to Viner (1964 [1937], p. 456), this left unanswered the question of what commodities became export commodities in a multicommodity world, since the latter depended on general wages and general wages depended on export wages, so the whole argument was circular. It was Longfield who most clearly explained the direction of trade in a multi-commodity two country world. A country would export a good if its productivity advantage (disadvantage) over the other country was greater (less) than the relative wage rate of the first country to the second and import it if the contrary conditions held. Of course in a monetary economy productivity is measured in common money, so the higher the prices that the goods command in the international market, the higher will be the measured productivity. (See Maneschi, 1998, pp. 122-123 for a further elaboration of Longfield's contribution).

The contemporary analogue to Ricardo's invocation of Hume's specie flow and subsequent analysis of Senior and Longfield, is the assumption that, in a world of flexible exchange rates, the equilibrium rate will ensure long-term trade balance. At this equilibrium rate, comparative advantage will be expressed in

absolute competitiveness and international wage differences will reflect international differences in the productivity of labour.⁹

2.4.4 Mill and the division of the gains from trade

The last part of the classical structure was provided by John Stuart Mill on the determination of international values and the division between the trading countries of the gains from trade. Mill first addressed the issue in a series of essays written in 1829 and 1830 and published in 1844. After praising Ricardo's innovation in showing that the advantage of exchange between countries was determined by differences in comparative costs, he then alerts his readers to an error in Ricardo relating to the division of gains:

Mr. Ricardo, while intending to go no further into the question of the advantage of foreign trade than to show what it consisted of, and under what circumstances it arose, unguardedly expressed himself as if each of the two countries making the exchange separately gained the whole of the difference between the comparative costs of the two commodities in one country and in the other ... the two countries taken together gain no more than this difference: and if either country gains the whole of it, the other country derives no advantage from the trade (Mill, 1844, pp. 5-6).

Mill explicitly differentiates between the determination of exchange values within a country and their determination in international exchange, on the grounds that in the latter instance, resources being immobile, value cannot be proportional to cost of production. Instead he reverts to what he calls the anterior principle of demand and supply (p. 8). He then proceeds by way of numerical example to explain equilibrium conditions, whereby the supply of goods for export by one country must equal its demand by the other and to discuss the division of gains between the two trading countries. He stresses that

⁹ Krugman, in a scathing article attacking the concept of unfair or exploitative trade, explained the international wage differential by reference to the **average productivity** of labour in countries. "if they achieve Western productivity, they will be paid Western wages ... But to the non-economist this conclusion is neither natural nor plausible ... missing the distinction between factory-level and national-level productivity" (Krugman, 1998, p. 30).

international values must be bound by relative cost conditions in both countries. He elaborates his analysis in chapter 18 of *Principles* and explains at great length the conditions determining international exchange values and the division of gains between trading countries. He concludes:

The values at which a country exchanges its produce with foreign countries depend on two things: first, on the amount and extensibility of their demand for its commodities compared to its demand for theirs; and secondly, on the capital which it has to spare from the production of domestic commodities for its own consumption. The more the foreign demand for its commodities exceeds its demand for foreign commodities, and the less capital it can spare to produce for foreign markets, compared to what foreigners spare to produce for its markets, the more favourable to it will be the terms of interchange. (Mill, 2004 [1848], p. 562).

So the more a country wants a product, the worse will be its terms of exchange and likewise if it could supply its own export good with relative ease. Mill also spoke at length of the inverse relationship between price and demand and the positive relationship between price and supply. Thus he disposed of the problem of balanced trade by claiming that prices will adjust according to the demands of consumers in both countries in such a manner as to clear markets. One of his elaborations was on the impact of a productivity improvement on the division of gains between countries. He expanded on the importance of price elasticity of demand (without using that term) and concluded that since demand was more likely to be inelastic, most of the gains from an increase in productivity in the production of an exportable good would accrue to the importer (pp. 555-556). He also raised the possibility of multiple equilibria, claiming that different international values could be compatible with balanced trade. Rather paradoxically, he claimed that it was the richest countries who gained the least by a given amount of foreign commerce by virtue of their greater demand for imports, though he mitigates this statement by stating that in the aggregate they probably gain most by virtue of the sheer volume of their trade. (p. 563).

The Ricardo-Mill analysis of comparative advantage, the determination of international values and the division of the gains from trade between two countries, is still standard fare for current students of international economics.

2.5 Early Neoclassicals and the Refinement of Trade Tools

The general consensus is that early neoclassical writers added little to the Ricardo-Mill model in terms of fundamentals. What Alfred Marshall did was to express Mill's idea of reciprocal demand in geometric form through the concept of the offer curve (see Viner, 1964 [1937], p. 541, Schumpeter, 1994 [1954], p. 609, Blaug, 1996, p. 197). This is unsurprising in that Marshall admitted that he came to economics by translating Mill's version of Ricardo or Smith's doctrines into mathematics (Whitaker, 1975a p. 37). These curves showed at different relative prices a country's export supply and import demand. Underlying these curves were domestic demand and supply conditions at each relative price. In other words, the offer curves represented a country's excess supply (of the export good) and excess demand (for the import good), and each point on the offer curve represented internal market equilibrium. The advantage of the offer curve approach is that it could deal with two countries' reciprocal demand for the products of the other in symmetrical form. Each offer curve is presumed convex with respect to the axis representing its export supply, implying that if the relative price of the imported good falls, more of that good will be demanded. The intersection of the two countries' offer curves represents equilibrium, where each country's export supply exactly matches the other's import demand and the slope of the line from the origin through the point where the curves intersect represents equilibrium terms of trade. As long as the curves are positively sloped, demand is elastic, meaning that lower priced imports will result in greater overall expenditure on imports in the form of total exports offered by the other country. Inelastic demand is represented by the offer curves turning backwards (or downwards). In this instance lower priced imports result in lower overall expenditure on the imported good. Once one allows for offer curves to be inelastic, multiple trading equilibria can exist and there is scope for countries to use trade taxes to improve the terms on which they trade. At his own admission Marshall's curves are so complex that in practice their applicability to practical issues of policy and other developments is restricted (cited in Haberler, 1936, pp. 155). However he did use them principally to

address stability of trade equilibrium as well as the effects of changes in demand, technological improvements and trade taxes on terms of trade and trade equilibrium (see Whitaker, 1975b, Part III.5).

On the issue of gains from trade, Marshall (true to the spirit of Mill) claimed that technological advances in developed countries would also favour developing countries through improvements in the latter's terms of trade. Developed countries might produce more manufactured goods and develop new ones but market forces would ensure that increased global supply would reduce their relative price (increasing the relative price of agricultural goods) and, ultimately, also benefit stagnant agricultural exporters.

Marshall's *Pure Theory of Foreign Trade* was printed privately by Henry Sidgwick in 1879 but it was only in 1923 that it was printed under his own name in *Money, Credit and Commerce* (Marshall, 2003 [1923]). However his foreign trade ideas were known to his contemporaries and influenced the writings of Francis Edgeworth and Pantaleoni (see Whitaker, 1975b, p. 114). Edgeworth (1894a, 1894b, 1894c) adopted (with attribution) the offer curves of Marshall but, unlike the latter, he attempted to take into account the theory of comparative advantage. He does this by asserting that the slope of a country's offer curve at the origin represents its comparative costs in autarky. Any international prices different to autarky comparative costs lead to international trade and the implication is that such trade is beneficial. This conclusion is based on the tacit assumption that the curves in his diagram represent the behaviour of typical individuals, so that every point on a country's offer curve therefore signifies the utility maximising level of trade for given terms of trade. Since the representative individual/country will only trade if it leads to a better situation than the no trade case, any trade must therefore be better than no trade.¹⁰ According to Jha (1973, p. 35), Edgeworth's use of demand and supply

¹⁰ Samuelson (1938) addressed the normative aspects of trade using essentially the same approach (though unlike Edgeworth he defined welfare in an ordinal sense) and claimed to have shown conclusively (and rigorously) that some trade is preferable to no trade. Samuelson euphemistically refers to his analogous two person example as a strong and ideal case, such as would exist if countries were populated by identical, representative individuals or if perfect social solidarity existed within countries. Samuelson (1939) claimed to show that it was sufficient for international trade to raise the value of national output in order to show that every individual **could** be made better off as a result.

in the determination of international values was not the most original but it was the best, not least because it facilitated the application of the various concepts and methods of economic statics to all subsequent theoretical analysis of international trade. This was very much in the tradition of the marginal revolution with its rejection of cost explanations of exchange value.

The most troublesome aspect of the classical theory of comparative advantage as expressed by Ricardo was undoubtedly the labour theory of value. If value is only created by labour, then the implication is that income from all other sources is unmerited. According to Viner (1964 [1937], p. 490), many classical economists dissociated themselves from the labour cost theory. Senior and Cairnes spoke of real costs in terms of labour and abstinence or labour and capital, while early neoclassical writers like Bastable and Edgeworth substituted units of productive power for quantities of labour, when expounding the doctrine of comparative advantage. Marshall made an attempt to introduce capital in addition to labour as a productive agency, via the device of his representative bale, and to explain the gains from trade on this combined basis. However the most novel approach to comparative costs and the one most consistent with the neoclassical emphasis on marginal utility was that of Pareto. He objected to the aggregation of labour and abstinence as if they were homogenous quantities capable of summation. Instead he reformulated comparative costs in terms of his own work on utility (what he called optimality) and general equilibrium. For Pareto, the price ratios between two commodities must equal the ratio of elementary optimalities (or marginal utility) of each individual consuming them or the ratio of optimality costs that the individual must sacrifice in order to obtain the goods. Moreover, he challenged the idea that one could apply the concept of subjective disutility to a metaphysical construct such as society, saying that it is individuals who in the course of production suffer disutility and that it is meaningless to sum their disutilities in order to arrive at some measure of the cost to society. Also, the concept of subjective disutility was clearly meaningless as far as a factor of production like land was concerned. What mattered was the quantity of goods that one could obtain from the land in its different uses (clearly some notion of opportunity cost). However, after setting out his comparative cost theory in

terms of individual optimalities, Pareto then decided that he could not use it for operational purposes (see Maneschi, 1998, pp. 140-141). While Pareto's contribution to international trade theory appears to have been overlooked in retrospective accounts of the development of international trade theory, it was acknowledged by the two most significant neoclassical reformulators of comparative advantage, namely Bertil Ohlin and Gottfried Haberler.¹¹

2.6 The Ontic Concerns of the Classical Economists and their Dynamic Models

2.6.1 Smith and his mixed messages

Adam Smith is generally presented to students as a doctrinaire free trader. According to Irwin, "Smith unequivocally supported free trade" (Irwin, 1996, p. 75). Moreover Irwin concludes his chapter on Smith's case for trade with the statement that Smith's policy of free trade applied to all countries regardless of their state of economic development (p. 86). When discussing Smith's case for trade, Irwin is at pains to state that his case for trade did not rest upon his case for laissez-faire. That Irwin should make this distinction is unsurprising given the many areas of economic activity where Smith saw a necessary role for government. Backhouse (2002, pp. 127-129) also states that Smith was not a dogmatic exponent of laissez-faire, without extending the same flexible interpretation to his position on free trade. He merely adds that he was very critical of mercantilist practices though he did support the Navigation Acts (on the grounds that defence was more important than opulence). This view of Smith has been contested. As noted by Roll, there has been a tendency that tries to make a doctrinaire ideology of Adam Smith's general preference for absence of government intervention in economic matters (Roll, 1992, p. 134). This view has been echoed more recently by Magnusson (2004) who claims that it was the nineteenth century British followers of Smith who invented a tradition of free trade by creating an unduly stark dichotomy between free trade and

¹¹ An example of this dismissal of Pareto is Roger Backhouse's account of his contribution, where he says that Pareto applied to international trade the Walrasian general equilibrium system but that he did not add anything beyond equation counting. (Backhouse, 1985, p. 200)

protectionism as absolute categories.¹² According to Magnusson, the interpretation of Smith outside of Britain (in Sweden and the United States) was as the exponent of a new political economy which stressed the need to establish modern industry in order to achieve economic progress and that they saw nothing contradictory in defending him in principle and still advocating tariffs to promote industrial development. (Magnusson, 2004, p. 17). In a similar vein, Vaggi and Groenewegen, citing the so called, *Early Draft of the Wealth of Nations*, claim that it supports the view that Smith was never a naïve supporter of free trade. In particular they maintain that it shows how Smith explicitly recognised the difficulties that poor countries have in their dealings with rich ones. “it is easier for a nation, in the same manner as for an individual to raise itself from a moderate degree of wealth to the highest opulence, than to acquire this modest degree of wealth” (Smith, 1763, cited in Vaggi and Groenewegen, 2003, p. 113).

Smith was essentially an Enlightenment figure, who took a critical stance against the practices of the State that he observed. He probably observed the extent to which most government interventions benefited the rich and powerful as opposed to the poor. According to Magnusson (2004, p. 25), it was possibly Smith’s argument for a free corn market (on the grounds that existing monopoly trading practices hurt the poor) and the British Prime Minister William Pitt’s frequent invocation of Smith’s authority, that did much for Smith’s image as a free trader. To the extent that Smith’s theoretical system attacked mercantilism and cited the interests of the consumer, it could be said that he was motivated by ontic concerns.

What can also be asserted with a reasonable degree of confidence is that Smith’s writings did not contain a uniform message. Moreover, the implications of much of his theorising were not apparent until other economists interrogated them. This is particularly true when it comes to his dynamic argument for trade as a facilitator of growth. On the surface it would appear that Smith reconciled his

¹² Magnusson (2004, p. 4) believes that it was the Manchester men, a group of political reformers within the Anti Corn Law League, who in their free trade campaigning, popularized this view of Smith.

static case in favour of free trade with his dynamic case, because of the centrality of savings and material capital accumulation to his theory of growth:

The industry of the society can augment only in proportion as its capital augments, and its capital can augment only in proportion to what can be gradually saved out of its revenue. But the immediate effect of every such regulation is to diminish its revenue and what diminishes its revenue is certainly not very likely to augment its capital faster than it would have been augmented of its own accord had both capital and labour been left to find out their natural employments (Smith, 1999 [1776], p. 34).

This argument stands or falls on the extent to which one accepts the centrality of physical capital accumulation to economic growth and the idea that aggregate national savings are proportional to national income, thus ignoring income distribution issues and their impact on aggregate savings.

Smith also had a dynamic theory of the consequences of trade that derived from his views about the benefits of the division of labour that larger markets facilitated. This has been called Smith's productivity theory by Myint (1958, p. 318). A narrow interpretation (using contemporary language) is that there are economies of scale associated with large scale production. Maneschi (1998, p. 46) highlights how economies of scale make absolute advantage endogenous while Irwin (1996, p. 80) stresses the extra benefits that accrue to countries when productivity is enhanced. The latter cites Smith on the manifold ways that free trade can enhance a country's productive power, not just through the division of labour but also as a result of the exchange of knowledge about new methods of production and new business practices. Such static and dynamic benefits as Smith alluded to are, in Irwin's view, "outstanding" given the period when he was writing. (p. 80). However what both Maneschi and Irwin fail to point out is that if economies of scale are not common across all sectors of the economy, then it is possible for a country to lose from trade if trade results in a decline in sectors where those economies exist. This omission is surprising given that this point had been made many years earlier by Graham (1923) and sparked a lively debate at that time. John Stuart Mill called these extra effects indirect effects that must be counted beneficial of a high order (Mill, 2004 [1848], p. 542).

What has caused far more consternation for those who view Smith as the destroyer of mercantilist doctrine is his vent for surplus theory. This was the view expressed by Smith that one of the benefits of foreign trade was that it provided an outlet for the surplus produce of a country. Mill (2004 [1848], p. 540) was very dismissive calling it a surviving relic of the mercantile theory. He claimed that it suggested, either that the good would be produced in sheer waste if the foreign market was not there to absorb the surplus or that, in the absence of production, capital would lie idle. He questioned why the labour and capital would not find alternative employment producing goods for which demand existed (p. 541). Myint (1958, p. 322) interpreted the vent for surplus as implying inelastic domestic demand for the export good and considerable specificity of resources tied up in the production of goods for export. This could apply to a developing country with surplus productive capacity. This view has not found favour with current historians of trade theory. Irwin (1996) in his account of Smith's static and dynamic gains from trade does not even mention the vent for surplus, which Magnusson (2004, p. 162, note 48) attributes to his desire to put the right ideological label on Smith as the father figure of the free trade movement. Bloomfield (1994, p. 128) calls it a mystery and says that probably more has been read into it than Smith intended. Similarly for Maneschi (1998, p. 48) too much energy has been devoted to teasing out what Smith meant and it is better to simply see vent for surplus and the productivity theory as being two sides of the one coin. Gomes (2003, p. 33) appears to agree, though, rather typically, he cites others in support of the view.

The disquiet provoked by the vent for surplus views of Smith appears to be because they contradict what he has to say about the workings of a competitive market system. Myint (1958) originally related the vent for surplus to conditions that could conceivably exist in less developed countries but this explanation did not satisfy the sceptics such as Bloomfield, since such conditions could not readily be applied to developed countries such as Britain. Later, Myint (1977) claimed that Smith also meant for his vent for surplus to be applicable to the developed countries of Western Europe. According to Magnusson (2004, p. 33), the alarm generated by the vent for surplus was simply because it did not suit

those who wished to portray Smith as the father of free trade to accept that he may have harboured mercantilist prejudices. Magnusson suggests that one way around the puzzle is simply to conclude that, although Smith may have had a dynamic productive view of trade, he may have been sceptical as to its realism. This scepticism could have been due to his awareness of the conditions of production, especially in agriculture, at the time he was writing. If one accepts that agriculture may not operate to full capacity and that it is difficult, even in the medium term, to change from one kind of production to another, his vent for surplus views of the benefits of trade make sense. However, for neoclassical economists, who claim Smith as their intellectual forefather, such views are anathema, since they imply either generalised market failure or individual irrationality. Social realism played a key part in Smith's theorising unlike that of those who claim to be his successors.

2.6.2 Ricardo and the repeal of the Corn Laws

It would not be an overstatement to say, as Findlay (1974) does, that David Ricardo's static theory of comparative advantage is his most famous single contribution to economic analysis and the repeal of the Corn Laws, the policy objective most closely associated with his name. While the static theory of comparative advantage is the acquaintance that most students of international economics have with Ricardo, the fact is that, like most economists of his day, his main preoccupations were dynamic. Central to his dynamic analysis was a theory of value and distribution. In the original preface to his *Principles of Political Economy and Taxation*, he says:

The produce of the earth – all that is derived from its surface by the united application of labour, machinery and capital, is divided among three classes of the community, namely, the proprietor of land, the owner of the stock or capital necessary for its cultivation, and the labourers by whose industry it is cultivated. But in different stages of society, the proportions of the whole produce of the earth which will be allotted to each of these classes, under the names of rent, profit and wages, will be essentially different (Ricardo, 1996 [1817], p. 13).

Determining the laws which regulate this distribution was, for Ricardo, the principal problem in political economy. His theory of value was that the value

in exchange of a good depended on the relative quantity of labour necessary for its production and he saw distribution as essentially conflictual (as far as the economic interests of the different social classes were concerned). According to Roll (1992, p. 167), not only is the picture drawn by Ricardo of the future pessimistic, it also implicitly destroys the harmony of social interest that Smith had been at pains to establish. This is a heritage from which neoclassical economics has been eager to distance itself and has, arguably, done so very successfully considering the static, individualistic, harmonious world of production, exchange and distribution that characterises neoclassical analysis.

Ricardo's pessimism derived from the conclusions of his theoretical system; that is, that economies tended to a steady state, where profits were zero and growth ceased, since growth was driven by the savings from profit of the capitalist class who invested in material capital. His system depended on a labour theory of value, a subsistence theory of wages, an inverse relationship between wages and profit and a theory of differential rent due to the diminishing productivity of land, as less fertile land was taken into cultivation. Higher population levels would lead to increased demand for corn and result in this corn being produced on less fertile marginal land. By virtue of diminishing productivity of resources used to produce the extra corn, the price of corn would rise, as would rents, while profits would fall "Thus by bringing successively land of worse quality, or less favourably situated, into cultivation, rent would rise on the land previously cultivated, and precisely in the same degree would profits fall" (Ricardo, D., 1815, p. 9). The mechanism through which higher-priced corn would lead to lower profits was through its impact on wages, "Corn being one of the chief articles on which the wages of labour are expended, its value, to a great degree, regulates wages" (Ricardo, D., 1822, p. 42). Higher wages mean lower profits and lower profits mean less capital accumulation and growth. Eventually profits would be driven to zero and all capital accumulation and growth would cease. Any policy measures that could alleviate or postpone this gloomy future were, for Ricardo, desirable, since in his view "Nothing contributes so much to the prosperity and happiness of a country as high profits" (p. 40).

Hence, if the price of the wage good (corn) was to be somehow lowered, this would reduce wages, increase profit, lead to more capital accumulation and postpone for a while the eventual steady state. The repeal of the Corn Laws in Britain would allow for the importation of cheap corn and achieve this desired effect: “general profits on capital, can only be raised by a fall in the exchangeable value of food, and which fall can arise from three causes [among which are] ... the discovery of new markets, from whence corn may be imported at a cheaper price than it can be grown for at home” (Ricardo, 1815, p. 21). As for distribution issues, the landowner would lose from the cheap importation of corn. “The landlord would be the only sufferer” (p. 48) but Ricardo did not accept that the interests of a particular class should be allowed to stymie progress, “I shall greatly regret that considerations for any particular class, are allowed to check the progress of wealth and population of the country” (p. 49). It made no real difference in the long run to labour (though there might be short-run benefits due to increased labour demand), and capitalists would undoubtedly gain. But, most importantly, free trade was good for industrial Britain, conferring on it both static and dynamic benefits, “The wealth of England would, I am persuaded, be considerably augmented by a great reduction in the price of corn” (p. 46).

What Ricardo’s dynamic theory does is raise questions about the universal benefits of free trade in a world where countries have a static comparative advantage in agriculture. Findlay (1974, p. 12) developed Ricardo’s dynamic model in a formal way and he grudgingly admitted that while free trade raises the profits and growth rates in England, it has the opposite effect on the agricultural exporter. However, in the next sentence, he attempts to mitigate this gloomy prognosis with the observation that the same analysis predicted a secular decline in the terms of trade against manufactured exporters to the benefit of the agricultural exporter. The essential point of Ricardo’s analysis is that developments that benefit the capitalist class benefit society because of the propensity of that class to invest. The corollary is that developments that benefit the landed class will not benefit society because of their spendthrift habits and lower propensity to save.

It is noteworthy that Ricardo's dynamic theory of the effects of trade liberalisation does not make it into any textbook on international economics. Moreover, historians of economic thought have, by and large, ignored the implications for trade policy of Ricardo's dynamic analysis. Even Findlay (1987), when writing about the evolution of the concept of comparative advantage, skips over the more general point (that he first alluded to in his 1974 article), which is that the optimal trade policy for maximum growth depends on a country's circumstances and the structure of its economy. He discusses comparative advantage as a dynamic concept that evolves due to changes in technology and/or capital accumulation but presents this as something naturalistic that relates to underlying factor endowments, preferences and/or simply exogenous change. In fact he takes a swipe at the development literature saying its talk of dynamic comparative advantage is loose and that they try to change the pattern of production before necessary changes in a country's capacity have taken place (Findlay, 1987, p. 517).

Irwin (1996, p. 94) alludes to Ricardo's dynamic analysis presenting it as an additional and perhaps more significant benefit of trade beyond the static efficiency gain. He makes no mention of its implications for free trade as a beneficial policy with allegedly universal application. By contrast, Maneschi (1998, p. 72) does devote a sentence to dynamic losses, saying that as Ricardo's attention was focused on Britain, he did not mention the dynamic losses that the corn exporting country would incur. However, similar in spirit to Findlay (1974), Maneschi qualifies this statement with the observation that if a ready supply of fertile land exists (as was the case in North America at the time Ricardo was writing), it could produce corn at practically constant cost.

Gomes (2003) also discusses Ricardo's dynamic model but his account is very confusing. When discussing the social context of the debate on the Corn Laws, he acknowledges that free trade might be detrimental to the long-term interests of food-producing countries, giving them an incentive to alter their comparative advantage bases (p. 188). However, in his account of doctrinal history, he presents the dynamic model as leading to growth **regardless** of the goods that a country exports or imports. While he acknowledges that profit is inversely

related to wages and that the latter depend on the cost of wage goods (the price of corn), he claims that increased capital accumulation can also occur if the country imports luxury goods. The basis for this claim is that cheaper imports raise the real income of capitalists (especially if they consume luxury goods) and, while the rate of profit will not be affected, they will still increase savings as a result of the increased purchasing power of their income (pp. 56-57). It is not clear whether Ricardo said this or this is a conclusion that Gomes drew from his writings. In *Principles* Ricardo is very clear when he says:

Foreign trade, then, though highly beneficial to a country as it increases the amount and variety of objects on which revenue can be expended, and affords, by the abundance and cheapness of commodities, incentives to saving and to the accumulation of capital, has no tendency to raise the profits of stock unless the commodities imported be of that description on which the wages of labour are expended” (Ricardo, 1996 [1817], pp. 92-93).

This reiterates what he had said before which is that, “Profits then depend on the price, or rather on the value of food ... The facility in obtaining all other things, only increases the amount of commodities” (Ricardo, 1815, p. 27). In other words, a fall in the price of goods consumed by the rich will not affect the rate of profit since that depends on wages. In any case the picture presented by Gomes is too rosy, since the country that imports luxury goods (who must therefore export food) will have higher wages and a lower profit rate. Therefore it is far from clear whether the income of capitalists in such a country will rise or fall, since the income-boosting effect of lower priced luxury goods must be weighed against lower rates of profit.

Ricardo’s conclusions are not dependent on a subsistence theory of wages. The neoclassical specific factors model of trade (with its assumption of market-clearing wages) predicts that trade will benefit the fixed factor employed in the export sector, hurt the fixed factor employed in the import competing sector and have an ambiguous effect on the mobile factor (labour) depending on what goods labour consumes. So for a country with a comparative advantage in agricultural goods, this implies that landowners (capitalists) would unambiguously gain (lose) and labour would lose to the extent that food was important in its consumption bundle.

While Ricardo has generally been presented as the first real exemplar in classical political economy of the abstract deductive method, a legacy that neoclassical economics enthusiastically embraced, his method was not abstraction for its own sake. As Roll (1992, p. 157) says, Ricardo was essentially a practical thinker in that his theorising was always about the contemporary world that he knew so well. This is obvious in the manner in which he addresses the risk to Britain of dependence on foreign supply for its food, a danger that he considered over-rated and to some degree a matter of opinion not capable of correct estimation (Ricardo, 1815, p. 28-29).

In support of his position he mentions, among other things, how “Buonaparte, when he was most hostile to us, permitted the exportation of corn to England by licences, when our prices were high from a bad harvest” (p. 32) and the case of Holland, a country dependent “almost wholly on foreign supply”, and where the price of corn “has been remarkably steady, even during the convulsed times which Europe has latterly experienced” (p. 35). As with Smith, the contrast between Ricardo and his neoclassical successors (such as Samuelson) is very stark in this respect. Ricardo’s pragmatism is also reflected in that despite his sustained onslaught against the Corn Laws, he recommended that the duty on corn be reduced gradually over a ten year period. Moreover he felt that the Navigation Laws were necessary for the upkeep of the navy and appeared ambiguous on the issue of reciprocity in trade liberalisation (Magnusson, 2004, p. 39).

2.6.3 Trade policy and other classical economists

According to Magnusson (2004, p. 44) none of the classical economists was a doctrinaire free trader. (He says this to dispute the view that the liberalisation of trade in the 1820s and the repeal of the Corn Laws in the 1840s should be viewed as a victory for the classical economists). This is a view shared by Backhouse (1985, p. 65) who also claims that the economists were circumspect when it came to drawing policy conclusions from their theorising. Robert Torrens stands out because he opposed unilateralism in trade liberalisation on the grounds that it could lead to a deterioration of a country’s terms of trade, behaviour that has been described by Robbins (1998, p. 216) as “frightful”. But

even other economists who took issue with Torrens, such as Nassau Senior and Ramsey McCulloch, supported tariffs in certain instances, such as for revenue purposes and, surprisingly in the case of Senior, when there was a danger of immediate injury to the domestic producer with whom the imported commodity would interfere (Magnusson, 2004, p. 41). Mill, who was critical of the Navigation Laws and both the subsistence and revenue arguments for tariffs, did famously support the infant industry case for tariffs where “they are imposed temporarily in the hopes of naturalising a foreign industry, in itself perfectly suitable to the circumstances of the country.” (Mill, 2004 [1848], pp. 839-840).

In all instances, these economists appeal to pragmatic considerations or social circumstances in defence of their position. Contrast this more nuanced approach with the all too (unfortunately typical) dogmatic claims of a contemporary theorist, Willem Buiter, chief economist at the European Bank for Reconstruction and Development, when he berated what he considered to be the unenlightened stance taken by developing country negotiators at the World Trade Organisation meeting in Cancun in 2003. “Remember unilateral trade liberalisation is not a **concession** or a **sacrifice** that one should be compensated for. It is an act of enlightened self interest. Reciprocal trade liberalisation enhances the gains but is not necessary for the gains to be present. The economics is all there” (cited in Chang, 2003, p 9). While I would be loath to accuse Buiter of bad faith, it does reinforce the view that the tools and techniques that contemporary neoclassical economists use have rendered them blind to the social material that their models are supposed to represent.

2.7 The Early Neoclassicals and the Triumph of Tools over Ontic Concerns

2.7.1 Preamble

The early neoclassical economists, especially Marshall, were keenly aware of the social material about which they attempted to theorise. This notwithstanding, by the 1920s, ontic concerns had retreated and the development of neoclassical trade theory was driven by and circumscribed by the tools that had become part of the kit of the academic economist. In order to

understand how this happened, it is necessary to look at the motivation and choices of some of the principal protagonists of the new science in the period between 1880 and 1915, especially the legacy of Alfred Marshall. However, before turning to Marshall, it is useful to look at contributions made by lesser known economists (many of whom were operating in the Marshallian tradition) and the extent to which the less amenable aspects of their theorising ceased to be part of the main canon of thought. What most of these economists had in common was that they were all, by and large, committed free traders, even as their theorising sometimes pointed in a contrary direction.

2.7.2 Henry Sidgwick and his unemployment and emigration fears

Henry Sidgwick has been described by Schumpeter (in a footnote) as one of the great university men in the sense of milieu creating and shaping (Schumpeter, 1994 [1954], p. 408). He has also been portrayed as a moral philosopher in the tradition of Hume and Mill (Hutchison, 1953, p. 50), a Utilitarian who wanted to provide guiding principles for State intervention (Winch, 1969, pp. 37-39). One of his better known legacies is the distinction he made between wealth when expressed in money values and wealth when expressed in terms of utility, from which the uncomfortable conclusion can be drawn that community welfare depends on distribution as much as on production. He made different contributions to the theory of international trade, including the indirect one of first publishing privately Marshall's essays on international trade. He was fundamentally a free trader but more on pragmatic political economy grounds than on the basis of theoretical speculation (see Jha, 1973, p. 36 and Irwin, 1996, p. 227).

Of interest to us however are the various arguments that he provided in support of temporary protection. First, he strongly endorsed the infant industry case for protection as expressed by Mill, where the industry in question is suitable to the circumstances of the country. In doing so, he enumerated conditions whereby it may be unprofitable for a private capitalist to engage in production in the absence of protection but, if protection is afforded, then its cost is compensated to the community by the ultimate economic gain that accrues from domestic production of the good (Sidgwick, 1901, pp. 488-490). This is very much in the

public good, externality tradition that he helped pioneer, when he presented well-known cases where the market and laissez-faire fail because of the inability of individuals to get adequate remuneration for services rendered (pp. 399-418). Another interesting contribution was his analysis of the elimination through competition of industrial production in a country where the primary (agricultural) sector has strongly diminishing returns and is therefore incapable of absorbing all the displaced labour from the industrial sector (see Jha, 1973, p. 40 and Irwin, 1996, pp. 173-174). He concluded that it would result in immediate unemployment that would become permanent unless the workers emigrated. This analysis is distinctive in that he addressed frictions in real markets and how agents respond to them. It also presented a legitimate argument for protection. This case caused some mild controversy, with Bastable and Loria questioning the validity of the hypothetical example, especially its departure from classical theory that denied altogether the possibility of unemployment in the long run. Two defenders of Sidgwick's conclusions were J. S. Nicholson and, more surprisingly, Edgeworth. The former descends from generality to particularity when he challenged the appropriateness of always assuming that markets operate in a frictionless fashion. "The assumptions that labour and capital cannot be exported and can always find an equally advantageous employment in 'other things' in case of displacement, though useful as first approximations in economic theory, require considerable modifications before being applied to particular practical cases" (Nicholson, 1903, p. 327). For Nicholson, the removal of trade restrictions could force manufacturing workers into agriculture with disastrous results (Nicholson, 1903, pp. 317-318). Likewise Edgeworth (1901) alluded to the immediate social and distributional consequences of the removal of protection, even as he stressed that the real difference between the two sides rested on the extent of abstraction that they employed, with Bastable and Loria taking a more abstract perspective by treating the country as a whole and ignoring non-competing groups and internal divisions.

According to Irwin, this challenge to classical doctrine was "remarkably uncontested" (Irwin, 1996, p. 174). Presumably he feels that a better defence of the classical doctrine could have been offered. In his discussion of the

Australian case for protection, that was subsequently proposed in the *Brigden Report* in 1929 (which rested on a Sidgwick type analysis, though without attribution), he claims that the free trade case was intact, since what the Report presented was a non-economic case for protection that emphasised redistributive issues (and their possible social and political consequences) over the economic case for free trade as a means of increasing national income per capita (p. 176). For the purposes of this thesis, what is remarkable is that this particular case for protection, as presented by Sidgwick, simply disappeared from view. For example, Viner (1964 [1937]), who does mention some of Sidgwick's views on international trade, makes no reference to this particular argument; likewise, the case of Haberler (1936), who fails to mention Sidgwick altogether. Full employment, as a necessary assumption on which the positive normative conclusions of neoclassical theory are based, became (and still is) a largely unquestioned premise that academic trade theorists accepted without demur. Similarly consigned to the dusty archives of history is Sidgwick's conclusion that "the fashion which lingers of treating the protectionist as a fool who cannot see – if he is not a knave who will not see ... is really an illogical survival of a mere fragment of what was once a coherent doctrine." (Sidgwick, 1901, p. 487).

2.7.3 J. S. Nicholson and imperfect markets

Another overlooked theoretical contribution is that of Nicholson's analysis of free trade in a situation where a country has a comparative disadvantage in the decreasing cost industry and a comparative advantage in the increasing cost industry (Nicholson, 1903, pp. 308-309). He showed that specialisation according to comparative advantage would reduce the average productivity of labour (and hence wages) due its decreased productivity in **both** sectors. He does ameliorate the normative conclusions by mentioning that the only compensation would be the improved terms of trade that the country would enjoy as its export good exchanged on better terms than before specialisation and trade. Viner (1964 [1937], p. 475) peremptorily dismisses Nicholson's case on the grounds that his analysis (of the decreasing cost industry) was conducted in average cost rather than marginal cost terms. This dismissal is interesting, based as it is on another unchallenged and seemingly unchallengeable neoclassical construct that pricing must be governed by marginal cost

considerations. Irwin (1996, pp. 140-141) reiterates the Viner conclusion claiming that Nicholson's analysis did not clinch the case, not least because of its average cost assumptions as to pricing. Irwin is revealing when he comments rather acerbically on the fact that Nicholson, as others of his era were prone to do, implied that anything that increased labour's share of national income was inherently desirable. One can only conclude that Irwin has some reservations on this front. In fact elsewhere, Irwin (p. 176) quotes Viner approvingly when the latter dismissed a definition of standard of living that ignored the income of landowners and capitalists.¹³

Nicholson (1903, pp. 315-317) also addressed the effects of trade when labour markets were segmented and free trade resulted in driving labour from the high wage to the low wage sector. Again, Irwin cites the case but dismisses it by saying that the example was short and confused and failed to bring out fully the problem presented for comparative advantage and free trade (Irwin, 1996, p. 161). The reason for Irwin's dismissal of the argument is not very clear (and certainly does not clinch the case), though he cites that Nicholson expressed prices and wages in nominal terms. From the perspective of this thesis, what stands out is that Nicholson's theoretical contributions with their often uncomfortable results were written out of history. Even Irwin (p. 141) mentions the curious lack of contemporary commentary that accompanied Nicholson's decreasing cost industry example, without probing further as to why this might be the case. Of course it needs to be remembered that Nicholson (like Sidgwick) was a pragmatic free trader who, while accepting the theoretical exceptions to free trade, denied their practical application. He was also a signatory to the free trade manifesto signed by the fourteen professors in 1903 in defence of free trade for Britain.¹⁴ Possibly, given his practical reservations, the subsequent

¹³ Irwin's admiration for Viner's scholarship (and ideological defence of free trade) are revealed by his supportive adjectives whenever he refers to Viner. For example, he talks of Viner's "harsh but reliable" judgement on an economist's defective procedure (Irwin, p. 139n), whereas elsewhere he makes reference to his "incisive review" (and dismissal) of the Australian case for protection (p.176), while on the external economies issue, he claims that it was Viner who delivered the "key qualifications" to the use of trade policies (p. 149).

¹⁴ The Tariff reform controversy was a product of an unsuccessful campaign launched by Joseph Chamberlain (the Colonial Secretary in the government of the day) in 1903 to abandon Britain's free trade policy for a policy of imperial preference. The political dispute exposed deep divisions among academic economists of the day, when fourteen economists signed a letter (drafted by Francis

neglect of his more heretical theories did not provoke much of a crusading response from him.

2.7.4 Charles Bickerdike and the terms of trade argument for tariffs

The last of the lesser known economists whose analysis was not so much challenged as neglected was Charles Bickerdike. He developed the terms of trade argument for protection, first alluded to by Torrens and Mill and resurrected by Edgeworth (1894a). The latter showed the theoretical possibility of the use of a nationally advantageous tariff, while denying its practicability. “As I read, protection might procure economic advantage in certain cases, if there was a Government wise enough to discriminate those cases, and strong enough to confine itself to them; but this condition is very unlikely to be fulfilled” (Edgeworth, 1894a, p. 48).

According to Jha (1973, p. 46), Bickerdike was unique in that his argument for the economically advantageous use of tariffs was not based on exceptional cases but was more general. His analysis is also noteworthy as he used Marshallian partial equilibrium diagrams to illustrate his argument. His case was strengthened when the tariff was protective as opposed to for revenue only. What Bickerdike (1906) said was that a small import or export tax would be beneficial in normal circumstances and, in the case of import taxes, the advantage was greater the more elastic the demand of the taxing country. The latter was more likely when the import was a finished good and if there was an untaxed domestic source of supply (meaning that the tax would be protective). In his manipulation of the Marshallian diagram, he showed that once the foreign supply curve is upward sloping (implying a less than infinitely elastic supply to the domestic market), the effect of the tariff would be to lower the foreign price of the good. This terms of trade gain he illustrated to be greater than the deadweight consumer loss from consumers exiting the market. Bickerdike (1907) extended his findings by deriving a mathematical formula for the

Edgeworth) to the Times rejecting Chamberlain’s proposals and affirming support for free trade. By and large it could be said that it was theoretical economists (of whom Alfred Marshall was the pre-eminent figure) who defended free trade while the historical economists, such as William Hewins, Percy Ashley, William Cunningham and Herbert Foxwell, questioned it.

optimum tax in terms of export and import supply elasticities. His analysis was praised by Edgeworth (1908a and b) who conceded that his results were theoretically correct and, moreover, that they appeared to be general. However, the extra theoretical argument against the use of such tariffs that Edgeworth cited in this case was the possibility of retaliation by foreign governments. For this reason he continued to deny the economic viability of protectionism. According to Jha (1973, pp. 36-37), Bickerdike, in all his varied writings up to 1929, was consistent in maintaining that there was a divergence between the sum of individual interests and the aggregate national interest, thus implicitly questioning laissez-faire as an appropriate economic approach by national governments. Joan Robinson viewed Bickerdike's analysis as a serious breach in the free trade case and claimed that the response to it by the mainstream fraternity was simply to hush it up (Robinson. 1962, p. 64). This is consistent with the general claim in this section that, any conclusions not amenable to the development of a unified general theory, were not so much contested as ignored.

2.7.5 Bastable and Pigou: defenders of the orthodoxy

The more orthodox exponents of the free trade is best view in this period were arguably Charles Bastable and Alfred Pigou. Bastable's book is a trenchant defence of free trade in general, and economics as a science as a methodological stance. For him international trade is not qualitatively different to trade between individuals and its general advantage is that it increases utility (Bastable, 1903, p. 13 & p. 18). Since he views international trade as simply a sum of individual exchanges, protection must be necessarily injurious to the extent that it hinders exchange (p. 138). While he acknowledged the infant industry case for protection in very limited circumstances (and indeed gave his name to the extra conditions that would need to be satisfied for the case to be valid), his general conclusion is that if manufactures in general do not exist, then they are not meant to be. Their lack of existence is proof that the country is better off without them (p. 141). Furthermore, he disputed the notion of industrialisation as a necessary condition for economic and social development, citing the social evils of a complex industrial society, especially in the absence of material advancement and moral and intellectual training (p. 148). In the spirit of Mill,

he extols the moral and social superiority of international trade over protection as a disseminator not just of goods but also of ideas. Bastable was another of the signatories of free trade manifesto in 1903.

In Pigou's *Protective and Preferential Import Duties*, his defence of free trade is similar in spirit to that of Bastable, in that it is based on a belief in the harmony of interests between the individual and society (Pigou, 1906). Anything that limits scope for individual bargaining must therefore reduce national income "the dividend of the whole community is, *prime facie*, larger when exchange is free than when it is subject to impediments" (p. 8). For him, import duties were necessary as a form of revenue raising and the real issue was the efficiency of protective versus non-protective taxes (p. 23). According to Bickerdike (1907, p. 99), Pigou concentrated on the direct distortionary effects of a tariff (the misallocation of resources and distorting of consumer choice) but minimised the indirect effects (improved terms of trade) that Bickerdike emphasised. "The real costs of our foreign imports ... would be slightly lowered ... This indirect influence is not, however, the chief element that has to be considered" (Pigou, 1906, p. 25). However, like many of his contemporaries, Pigou accepted the infant industry argument but did not see its relevance for an advanced industrial country like Britain. His signatory of the economists' free trade manifesto would be consistent with this position and, moreover, he was one of the more public and active campaigners on the free trade side.

2.7.6 Understanding the role of Marshall in the triumph of tools over ontic concerns

According to Winch (1969, p. 60), academic economists were not attached to the doctrine of free trade in unqualified form and almost all the arguments used by tariff reformers in the 1903 dispute had long been familiar to economists. In particular he cites Marshall as the representative of the moderate anti-tariff position, reluctant to sign the economists manifesto and willing to admit that free trade was not a universally applicable policy. Yet, in order to understand how ontic concerns were increasingly sidelined in economic theorising in general and especially in the area of international trade, it is necessary to address the paradox that is Marshall. Marshall is a central figure, to the extent

that he dominated British economics at the turn of the century and has left an enduring legacy.

Marshall is a paradox in terms of his theorising and his legacy. He represented an all-embracing eclecticism that is far removed from the abstract mechanical general equilibrium theorising that developed post-1940. Yet, it could be claimed, that it was Marshall who was responsible in no small way for the mechanistic, static, tool-driven economics that subsequently emerged. According to O'Brien (1990, p. 157), it was because of Marshall's eclecticism as far as English economics is concerned that the marginal revolution worked. His all encompassing eclecticism can be seen in his reconciliation of the classical theory of value with the newer emphasis on demand (Vaggi and Groenewegen, 2003, p. 227). This was achieved via his enduring partial equilibrium supply and demand model. This technical feat showed the emerging neoclassical (as it was designated by Thorstein Veblen) theory to be a logical progression from its classical antecedent. In this way, it reinforced the claim that economics was a science with a progressive agenda. He was intolerant of methodological disputes as had plagued political economy in the 1870s, "I say of methods simply that economics has to use every method known to science" (cited in Coase, 1975, p. 26). He was also very attuned to the social material that was the substance of economic theorising. According to Coase, Marshall always emphasised induction and the collection and assembly of facts and much of his source material was gleaned from government reports, visits to factories and the questioning of workers and businessmen (p. 28). When it came to the analysis of firm behaviour, his metaphors were often biological as opposed to mechanical (Creedy, 1990, p. 21). This is very clear in his evolutionary concept of the life cycle of firms. Even his consumer theory was more variegated than a simple adherence to utilitarianism would warrant. According to Parsons "Marshall explicitly states that ... the subject matter of utility theory is only part of economics and the less important part. The more important part is the influence of economic conditions on human character" (Parsons, 1931, p. 106). This holistic view of what economics could and should be was expressed directly by Marshall when he declared the Mecca of the economist to be economic biology (Marshall, 1898, p. 43). While he was trained as a

mathematician and began his economic studies by translating Mill and Cournot into mathematics, it is claimed that he had what amounted to an obsession for hiding his tools away (Pigou and Robertson, 1931, p. 3). His fear about the excessive use of mathematics was that it could lead economists down the road of mathematical temptation, where, according to Pigou, they would pursue “intellectual toys, imaginary problems not conforming to the conditions of real life” (quoted in Coase, 1975, p. 30).

However, Marshall’s particular forte were his diagrams, which he used for deductive and inductive purposes. He considered them to be his engine of inquiry and when he presented them to the Cambridge Philosophical Society in 1873, his objective was to show that economics, just like the contemporary sciences, had its own machinery of thought (Cook, 2005, p. 186). In international trade theory, his major bequest is his offer curves determining international values. The general view is that Marshall was reluctant to publish this work. In his stated reservations about the use of mathematics as an aid to theory and his own early contribution to trade theory, he said “Much of pure theory seems to me to be elegant toying. I habitually describe my own pure theory of international trade as a toy” (cited in Coats, 1992, p. 262). Yet this early contribution found its way relatively unchanged into his last work, *Money, Credit and Commerce*, published in 1923 (Marshall, 2003). As far as trade policy is concerned, Marshall is not presented as a dogmatic free trader but as someone who, for example, recognised the infant industry case for protection (see Jha, 1973, p. 31). However after his visit to the USA in 1875, he became sceptical about the workability of protectionism as an aid to economic development due to the limited wisdom, knowledge and power of national governments (see Whitaker, 1975b, pp. 89-90 & p. 108). During the tariff reform crisis he lent his name and considerable authority to the free trade case, a measure designed not only to impact on a particular political problem but also to underline the specialised expertise of the economist when it came to economic issues. Moreover, according to Cambridge gossip that circulated between 1903 and 1908, Marshall is alleged to have declared that the man who refuses to support free trade could not be a bona fide professional economist (Coats, 1972, p. 488). His influential role in the appointment of Alfred Pigou as his successor

over the more fancied and experienced Foxwell has been well documented (see Coats, 1968, 1972, Coase, 1972 and Jones, 1979). The hypothesis suggested by Coats (1968, p. 226) for his preference, was Pigou's public championing of the free trade case and his defence of the authority of the economist.¹⁵ This has been challenged by Coase, who maintains that Marshall's issues with Foxwell were longstanding and predated the schism caused by the tariff reform controversy. Regardless of which position is more correct, what both Coats and Coase appear to agree on is that Marshall was very concerned with the future of economics and the favouring of Pigou indicated a choice for the ascendancy of economic theory over the historical approach. According to Coase (1972, p. 485), the direction that economics at Cambridge and in the broader academic community took was not good, though he exonerates Marshall and lays the blame on Pigou, claiming that he failed to fulfil the high hopes that Marshall had for him.

It is a matter of speculation to question whether Marshall would have applauded or regretted the future development of economics as the tool-driven discipline that it became, divorced from ontic concerns. Parsons claimed that Marshall's economics hesitated between the analytical opportunities gained by a static resource framework and a dynamic theory of wants and activities (cited in Maloney, 1985, p. 52). However, regardless of his much cited eclecticism when it came to theory and method, it is undeniable that his choices shunted economics in Britain in a certain direction. Even when he finally succeeded in getting an independent Economics Tripos for Cambridge in 1903, the lack of scope that it gave to economic history was mentioned at the time (see Hutchison, 1953, p. 70). This relegation of the historical was also evident in subsequent editions of *Principles*, where historical analysis was moved from the main text to the appendices. One possible explanation of the paradox that Marshall represents is his obsession with getting economics recognised as a scientific discipline in its own right. This would explain his synthesising of the new theories of value with the classical scheme. It would explain his antipathy to unnecessary disputes between economists and his desire to find common

¹⁵ "economic science is not a subject in which persons, however eminent, can expect, without special training to negotiate an argument successfully. It is unpleasant, and may appear impertinent, to call attention to confusions of thought into which distinguished men have fallen" (Pigou, quoted in Coats, 1968, p. 212).

ground among them. But it would also explain, why, when important tensions emerged between the historical and the analytical approach to economics and when a choice had to be made, he ultimately came down in favour of the analytical, despite all his earlier reservations about overly abstract theory.

So the legacy of the Marshallian era was a retreat from the very social material that had been the catalyst of classical theory and, ironically, the theorising of these early neoclassicals. This retreat can be partially explained by the influence of Marshall and his scientific aspirations for his chosen discipline. In the field of international trade theory, the less agreeable theoretical conclusions of his contemporaries were not so much disputed and challenged as simply ignored. Possibly the fact that these economists were pragmatic free traders may explain their failure to protest at the lack of reaction to their more heretical conclusions.

2.7.7 Social realism and the trade policy position of non-British economists

Outside Britain, especially in Italy, work was proceeding apace on, inter alia, international trade theory and policy. Tools were refined and policy positions forwarded by the likes of Enrico Barone and Vilfredo Pareto. Barone, in his 1908 textbook used partial equilibrium diagrams to show the positive welfare gains to exporting and importing countries of market integration. These gains are the now familiar changes in consumer and producer surplus as illustrated with reference to demand and supply curves. It was also Barone who devised the first production possibility frontier and combined this innovation with that of indifference curves to represent the welfare gains of moving from autarky to free trade. These contributions were not known to the broader academic community and have only been acknowledged retrospectively as a result of the work of Maneschi and Thweatt (1987).

From a theory-policy perspective, the contrast between Barone and the British economists is interesting. The modeling efforts of the latter qualified the case for free trade but, nevertheless, they remained free traders for reasons unrelated to their theoretical work. By contrast, Barone's theoretical work reinforced the welfare case for a free trade policy yet he remained sceptical. According to Maneschi (1998, p. 149), Barone thought of the market as a large and

complicated machine subject to a large amount of friction. He believed that it was important to study the general equilibrium configuration of the mechanism and the dynamic phenomenon of adjustment to disturbances. For him dynamic phenomena were important because they represented reality. The reality of frictions, irreversibility (difficulty in shifting capital from one use to another) and unstable terms of trade, which could alter a country's comparative advantage, were reasons not to be dogmatic about free trade (p. 150). This gap between Barone's theoretical endeavours and his policy stance must indicate that, despite his adept use of neoclassical tools, he was keenly aware of their methodological limitations.

Pareto's contribution to the development of the tools of international trade theory has been mentioned already. His position on trade policy matters appeared to have little to do with his theoretical work in economics and more to do with his changing political views. In his early work such as *Cours* (1896), he is unambiguously pro free trade, viewing protectionism as a destroyer of wealth. When he wrote his *Manual of Political Economy* in 1906, his position had modified. He still claimed that "we can grosso modo, and as a first approximation, conclude that every protective tariff is the cause of a destruction of wealth" (Pareto, 1971, p. 374). Yet because of what he believed to be indirect effects (including distribution, social and fiscal), he concluded that there was no way of "knowing whether protection is preferable to free trade or vice versa" (p. 377). Maneschi (1998, pp. 144-146) refers to the evolution of Pareto's views but attributes it to an ethical neutrality that he had started to advocate and a belief that non-economic variables were also significant to the choice of trade regime. Gomes (2003, pp. 122-123) explains Pareto's later "confusion" on the issue because of the change in his political views. However, he does not elaborate apart from quoting Hutchison to the effect that Pareto started his economic writings as an ardent liberal but later changed. In Gomes's view, Pareto's later writings on the issue were more balanced and pragmatic. A reading of his various writings (such as essays and newspaper articles as well as his better known books) reveals the profound metamorphosis that occurred in Pareto's political beliefs (see Bucolo, 1980, for a collection of these writings). While never a socialist, this was the man who, in 1891, called Marx "an indomitable

spirit, a deep thinker” and who acknowledged the destructive effect of industry on the well-being of workers, “The progress of industry tends to reduce the worker’s wages and to increase the length of the working day ... damaging his health and strength” (Bucolo, 1980, p. 48). Even as late as 1900, he still thought that socialists and liberals could be allies in exposing corruption (pp. 116-117). At the time of his early economic writings he supported democracy, republicanism, disarmament and free trade. One reason for his free trade stance was that in the Italy of his day he saw that proposed agricultural protectionism would hurt the poor. The transformation in his political views was dramatic and occurred very suddenly around the year 1900. He became anti-democratic (questioning the extension of suffrage), extremely critical of trade unions and the right to organise collectively and worried that socialism would replace bourgeois with working class privilege. By the time he wrote the *Manual* in 1906, he was claiming that protectionism could increase wealth to the extent that “this policy curbs municipal socialism and the system of humanitarian constraint or even simply cuts the power of trade unions” (Pareto, 1971, pp. 382-383). In his later *Treatise on Sociology*, another potential positive effect that he attributed to protectionism, that it transferred wealth into the hands of the more adventurous and risk taking types, which he thought might ultimately lead to an increase in wealth (Finer, 1966, p. 62).

Maneschi (1998) seeks to portray both economists as being socially aware and claims that this explains their trade policy positions. However of the two, Barone appears the more temperate and consistent in his analysis of trade policy. Given the virulent anti-working class bias in Pareto’s later writings, it is difficult to take seriously his claimed agnosticism on trade policy matters. From the point of view of the development of the discipline, Pareto’s more technical economic writings were acknowledged and his concepts became part of the tool-kit of the discipline. While Barone’s contribution to international trade remained unacknowledged until relatively recently, nevertheless the neoclassical apparatus that he wielded so successfully became an integral part of every student’s education in international trade. In both cases what was useful to the construction of the neoclassical edifice was retained.

2.8 Later Neoclassicals and the Neoclassical Reformulation of Comparative Advantage.

Arguably, by the 1920s, neoclassical economics was developing into a unified theory with its own unique (in the social sciences) method. The theory was undeniably static, the basis for all social explanation was the rational self-interested actions of atomistic agents and certain environmental assumptions like perfectly competitive markets were widely accepted. Although economics had yet to become very mathematical in its expression, the foundations were in place. The price paid for laying these foundations was a retreat from social realism and the recognition that the social world was qualitatively different to the natural or biological world. However, in this period, trade theory still operated with some handicaps inherited from its classical past, such as the subversive labour theory of value foundation to comparative advantage. This issue was finally dealt with when neoclassical production theory was integrated into international trade, and trade theory was reformulated as part of general equilibrium theory.

2.8.1 Gottfried Haberler and the discarding of the labour theory of value

Haberler's contribution to the reformulation of the classical theory of comparative advantage in terms consistent with neoclassical theory has been overshadowed by the more hegemonic account of Ohlin. What he did was to liberate the theory of comparative costs from Ricardo's labour theory of value by expressing it in opportunity cost terms. How he does so is set out clearly in chapter 12 of his book on international trade (Haberler, 1936). For a long time his name was associated with the innovation of the geometric production possibility frontier, which encapsulates the idea that given resources have competing uses and that the cost of a particular use is alternative output foregone. For Haberler, Ricardo's labour theory of value was simply a special case of his more general theory with many factors of production. His model is what would today be described as a specific factors model, in that he assumed that some factors of production are tied into a sector and hence have no alternative use (and no opportunity cost) while others are inter-sectorally

mobile. The influence of neoclassical production theory is very clear in his assumptions that: (i) the price of every product equals its marginal (money) cost; (ii) the mobile factor gets paid the same amount regardless of the sector where it is employed and; (iii) all factors, including immobile ones get paid the value of their marginal productivity (Haberler, 1936, p.181). Taking labour as the mobile resource, then the opportunity cost of applying labour to produce cloth (for example) is how much wine is not produced as a result. This is determined by the marginal productivity of labour (MPL) in the two activities.

For example, the opportunity cost of cloth production is $\frac{MPL_{wine}}{MPL_{cloth}}$. If a country's opportunity cost of production of a particular product is lower than that of the international competition, then it has a comparative advantage in that product.

Haberler's formulation of opportunity cost may seem to be similar to that of Ricardo's, where the opportunity cost of cloth production is also the ratio of the marginal productivities of labour in wine to cloth, but there are important differences. Ricardo assumed that the productivity of labour was constant so that the average productivity of labour equalled its marginal productivity and this never changed as the level of production changed. By contrast, Haberler's treatment of labour is standard neoclassical fare. First, the focus is on marginal magnitudes as opposed to average magnitudes. Second, there is a neoclassical belief that one can unpick the marginal contribution of labour to output. Third, the productivity of labour at the margin is assumed to be diminishing in the amount of labour used and, fourth, the marginal productivity of labour is assumed to be positively related to the amount of the accompanying fixed factor used. All this gives rise to a production possibility frontier that is concave, embodying the fact that, as specialisation proceeds, the opportunity cost of production will increase. This is obvious, as the more labour that is applied to cloth production and the less labour that is applied to wine production, so $\frac{MPL_{wine}}{MPL_{cloth}}$ will rise. A concave production possibility frontier means that the opportunity cost of production (or value) is no longer determined solely by supply side factors as was the case in Ricardo's simple model where the

opportunity cost of production never varied regardless of the output mix in the economy.

One criticism of Haberler's account was that it was not a general equilibrium theory (see Ellsworth, 1940). This is however unfair. It was general equilibrium insofar as it addressed the production side of the economy (albeit with the assumption of some specific factors of production) and, although he did not incorporate the demand side of the economy, he laid the groundwork for the subsequent integration of the demand and the supply side in the determination of comparative advantage. It was Lerner (1932, 1934) and Leontief (1933) who developed Haberler's original production possibility approach (Haberler, 1930) and united it with Edgeworth's indifference curve analysis, effectively combining supply and demand analysis in a general equilibrium model of trade. An alternative, more general way of expressing opportunity cost is as the ratio of marginal costs. In other words the opportunity cost of producing cloth is the ratio of the marginal cost of cloth production to the marginal cost of wine

production $\left(\frac{MC_{cloth}}{MC_{wine}} \right)$. General equilibrium assumptions get invoked by the

claims that relative prices will always adjust to clear markets. So, for a non-trading economy, equilibrium prices satisfy Pareto's marginal conditions, whereby the ratio of marginal costs is presumed equal to autarky relative prices, which are taken to equal the ratio of marginal utilities from consumption for all individuals in this economy. If this ratio is lower than that of the competing countries, then a country has a comparative advantage in the production of that good and will gain from specialising (though not fully) in its production and from exporting its surplus supply over domestic demand.

Another criticism leveled at Haberler's opportunity cost approach by Viner (1964 [1937], pp. 523-524) was that his analysis was too static insofar as the production possibility frontier was constructed on the assumption of a given stock of productive factors operating to some physical maximum. While Haberler's account is undoubtedly static (in the spirit of Ricardo's static model), it is a moot point whether the omission of preferences for leisure as compared to

employment (or preferences between different occupations) would have added substantially to the model or made it truly dynamic. It is also noteworthy that Viner makes no reference to countries operating at a level less than that indicated by Haberler's production possibility frontier because of involuntary unemployment.

Haberler's achievement was that he managed to retain the essential insight of Ricardo, that is that all countries can gain from trade regardless of their level of development, but he put it on a more general footing than Ricardo's labour theory of value. What matters now is **opportunity cost** which is determined by the **productivity of mobile resources** at the margin. This is a general theory of what determines the marginal productivity of resources since it can incorporate climate and technology (very Ricardian) with the level and composition of resources used in production.

2.8.2 Heckscher and Ohlin, and Samuelson's formalisation of their insights

Eli Heckscher and Bertil Ohlin gave their names to the most enduring neo-classical exposition of comparative advantage, the Heckscher-Ohlin theory. This is notwithstanding that Ohlin (unlike Heckscher) was critical of Ricardo's concept mainly on the grounds of its classical labour theory of value and he rarely uses the term comparative advantage in his famous book on *Interregional and International Trade*, originally published in 1933 (Ohlin, 1967). Ohlin wished to develop a mutual interdependence price system and relate it to factor endowments and trade. He combined Walrasian general equilibrium as taught to him by Gustav Cassel (which assumed that factor proportions used in production varied according to the relative price of these factors) with Heckscher's insight that trade flows could be explained by international differences in the relative abundance of factors of production. Heckscher (1919), who was most interested in how trade influenced the distribution of income and in the reasons for differences in comparative costs among countries, both of which were related, made a number of key assumptions which were later adopted by Ohlin. He assumed that: relative factor abundance differs between countries; that the way factors are combined in production differs between products and; that all countries had access to the same technology. This

became the version of trade theory that dominated the research agenda for nearly half a century. Comparative advantage was reformulated. Its basis was no longer unexplained technological differences between countries but differences in their relative factor abundance and in the relative factor intensities of different goods. Relative abundance of a factor led to a low market price for it, which explained why a good which incorporated a lot of that factor was relatively cheap. A country's comparative advantage was in the production of a good(s) that used relatively intensively the country's relatively abundant factor of production (Heckscher-Ohlin theorem).

Students' encounter with the ideas of Heckscher and Ohlin on trade are, invariably, mediated through Samuelson's reformulation of their ideas. (See Stolper and Samuelson, 1941, Samuelson, 1948, 1949). Samuelson did to their ideas what Marshall had done earlier to the ideas of Ricardo and Mill; he expressed their content mathematically. In the course of this adaptation he took Ohlin's general equilibrium model (which was also expressed mathematically in the appendix) and reduced it from 2 countries, n commodities, r factors of production and s individuals to 2 countries, 2 goods and 2 (representative) factors of production, the famous $2 \times 2 \times 2$ general equilibrium model of production, consumption and trade. This Heckscher-Ohlin Samuelson (HOS) model, which is still taught to all undergraduate students of international trade, represents the apotheosis of abstract deductive reasoning. It combines neoclassical production, consumption and distribution theories in a perfectly competitive general equilibrium economy, where perfect competition prevails in all factor and product markets and all factors of production are perfectly mobile within countries and perfectly immobile internationally. It preserves the essential Ricardian insight that all countries can gain from trade but now explains comparative advantage on a naturalistic resource endowment basis. Its static character appears more justifiable than Ricardo's static example, insofar as the land and the amount of labour can, with little loss of realism, be treated as given endowments (capital creates some complications). It preserves the harmonious conception of markets that are central to a static view of the benefits of exchange and it reinforces the neoclassical creed that all factors of production get their just and only possible reward according to their relative

contributions to the production of utility. It has the benefit of preserving what was most desirable in Ricardo's static model (the free trade conclusions) while subverting the heretical labour theory of value. This gives the illusion of continuity and progress in theorising. The only dissonant feature of the model is that it explicitly recognises that trade has income distribution effects and that not everyone will gain from trade. However, the case for trade liberalisation is still preserved in that the gains to the gainers exceed the losses to the losers. In other words, national income will be higher post trade liberalisation than pre trade liberalisation. This, for some, may be a sufficient case in itself to defend the free trade is best creed but others have felt obliged to make a stronger welfare case for such a policy stance on the basis of the potential for accompanying Pareto improving redistributive measures that ensure that there are no material losers post trade liberalisation. This "potentially" Pareto-improving case for trade liberalisation assumes that the only constraint on the implementation of such "accompanying" policies is the size of national income. Political, administrative and budgetary constraints are not recognised.

Samuelson's role in the development of neo-classical trade is widely acknowledged and the impact of the HOS model was such that Ethier as late as 1982 called it the modern theory of trade (Ethier, 1982a, p. 389). It is acknowledged that Samuelson's contribution was his reduction of Ohlin's multidimensional general model into a general equilibrium model with much less dimensions. Maneschi's judgement on the Ohlin model was that it was so general as to offer no insights into the factor endowments theory itself (Maneschi, p. 183). Samuelson was also aware of his own contribution as he criticised Ohlin for not descending from full generality to strong and manageable cases such as his two-factor two-good world. He claimed that that left easy pickings for him and that Ohlin's failure to reduce meant that he did not really understand his own system as he would have if he had played with more graphable versions itself (cited in Maneschi, p. 183). Samuelson in his claims as to the real insights that his method afforded sounds remarkably like Marshall in his claim to have developed an engine of scientific inquiry for economics. The stripped down 2x2x2 version of the H-O model as developed by Samuelson (1948, 1949) was attractive to the profession not just because it was

a simple general equilibrium model of trade but also because it gave strong unambiguous results. Such lack of ambiguity was much sought after by economists anxious to show that their discipline is a science which renders clear cut conclusions. It was also very amenable to subsequent comparative static analysis which has been the mainstay of neoclassical qualitative predictions. That the assumptions that underpin all general equilibrium trade models, including HOS, are very unrealistic is neither here nor there and did not sway the profession from delving into ever more esoteric depths as they searched for new clear unambiguous results by making minor changes to exogenous variables that underpin their models.

2.9 The Legacy

2.9.1 The empirical productivity of neoclassical trade theory

As early as 1953, Leontief (1953) tested the H-O theory of trade for the USA and got results completely at variance with what the model predicted; that is to say, it appeared that the US exported more labour-intensive goods than it imported. This in no way challenged the drift of theoretical trade research, its motor was not to be stopped. Leontief's results were dubbed a paradox and instead of acting as a catalyst for new theoretical developments, it instead gave rise to a long line of lucrative empirical research trying to explain such anomalous results. This empirical quandary led to the reintroduction of more dimensions into theorising, such as addressing the issue of natural resources or recognising the importance of labour skills (known as human capital). These extra dimensional issues were acknowledged but then reincorporated into the 2x2 model. They improved the results but certainly did not provide a strong empirical defence of the HOS model (see Kenen, 1965 and Baldwin, 1971). This theoretical/empirical dissonance has never disappeared. Bowen, Leamer and Sveikauskus (1987) generalised the model by using 12 factors of production and 27 countries and applied a rather weak binary test which compared the signs of trade flows (net exporter or importer) with the sign of factor endowment (abundant or not). They found a 35 percent violation of the signs. Even by the mid-1990s when trade theorists had found more enjoyable toys to play with, the

profession had still not given up on reconciling the strong H-O results with empirical reality. Every time, however, it seems that reality lets them down and new paradoxes have to be dealt with, such as Treffer's (1995) realisation that there was a lot of missing trade, based on what the H-O model would have predicted. Maybe this would explain why trade theory and empirical trade research seemed to proceed in parallel grooves, occasionally confronting when empiricists found new data sources and new econometric techniques with which to test old models. It was rarely the case that empirical results affected the drift of theoretical research.

2.9.2 The theoretical productivity of neoclassical trade theory

If the HOS theory was not productive in an empirical sense – that is to say, if its theorems were not confirmed – could it be deemed productive in some other sense? What needs to be explained is why general equilibrium trade theorising in a perfectly competitive market framework persisted for so long before being eventually supplemented if not supplanted by new trade theory? Ideology is not sufficient on its own to explain this phenomenon, even though it must be admitted that imposing a static framework on trade theorising (taking tastes, technology and factor endowments as given) and allying it with self-interested optimising behaviour in an idealised market environment was a framework strongly biased towards yielding theoretical conclusions supportive of the free trade position.

Trade theory did prove to be very productive in generating what Latsis (1972) calls interesting theorems. The basic model could be extended in different directions. First theorists exhausted the comparative static results associated with changes in exogenous features of the model (for example, the Rybczynski, 1955 theorem). Core HOS theory was synthesized in four equations by Jones (1965). The model could be generalised to a higher dimensional world with many factors of production, many goods and many countries to see if the unambiguous qualitative theoretical results yielded by the lower dimensional model still held (see Jones, 1971, 1974, 1977 and Ethier, 1974, 1982b, 1984). As far as comparative advantage in its HO form is concerned, Ethier found that in a higher dimensional world, it held when expressed as correlations; that is to

say, that on average, a country tends to export the goods that use intensively its relatively abundant factors. Models could play around with different degrees of domestic inter-sectoral mobility of factors of production and see what results that yielded. These permutations to the core model were changes that were marginal in nature and all conducted within the environmental framework of competitive factor and product markets and exogenously fixed factor supplies with no international factor mobility. At a more technical level, the neoclassical trade model offered rich pickings for mathematically-oriented economists, such as Gale, Nikaido, Chang and Chipman, who were interested in examining the nature and properties of equilibrium, such as its existence, uniqueness, stability and efficiency.

Chipman (1965) wrote a survey on the state of neoclassical international trade theory, which tellingly was published by *Econometrica*. In the sixty four pages of text, nine pages addressed necessary and sufficient conditions for the use of community indifference curves (identical and homothetic preferences), three pages dealt with opportunity costs, thirteen attended to the nature and consequences of external economies (one concession to realism) and **thirty five** focused on the properties of equilibrium. Effectively two heuristics co-existed in theoretical trade research, one that attempted to explain, as an exercise in applied logic, the cause and consequence of international trade in goods, while the other explored the nature of the conditions that gave the general equilibrium matrix (arguably the pride of the economics profession) its elegant character. While such theorising did yield many theorems, which may indeed have been interesting to those involved in such exercises, one has to query the productive nature of this research in the sense of illuminating real world economic phenomena. Empirically, general equilibrium trade theorising was characterised by its lack of productivity, not just Leontief's interestingly named "paradoxical" results for the USA but also its failure to explain the extent and relative global importance of intra-developed country trade of an intra-industry nature. Of course one could argue that trade theory (like general equilibrium theory) had a certain elegance, in that it allowed for the use of general functional forms (for utility and production) within a unified framework, but this is an aesthetic standard that must be of strictly second-order importance when it comes to

evaluating theories. Yet a lack of empirical productivity was insufficient to undermine the status of trade theory within the economics profession. Its social rank was high precisely because it was considered difficult. Any aspiring young economist knew that their probability of getting published was enhanced if their theorising was technically demanding, yielded counter-intuitive results but did not undermine the general policy thrust of mainstream theory.

2.10 Concluding Comments

Most general histories of economics tend (surprisingly) to neglect international trade or, if they do not, the focus is on the static progressive account of comparative advantage and its successful transformation into forms compatible with neoclassical theory. Comparative advantage, as expressed and developed by the classical economists, is presented as neoclassical theory in embryonic form. While no account of the historical development of international trade theory can afford to ignore comparative advantage (because of its longevity and its enduring status as the principal normative account of the effects of trade liberalisation on individual countries), the static story is a limited, one-sided account of the often contradictory theories of classical economists. Similarly, early neoclassical theorising on trade is less uniform than the way it is presented in conventional retrospective accounts.

Classical economists also had dynamic theories of the effects of trade which were characterised by more equivocal policy implications. In particular, a product of these dynamic theories is that the normative impact of free trade depends on the structure of the economy. The economic structure of the economy also matters in the less well known accounts of the effect of trade presented by some early neoclassical economists, though their analyses tended to be static. The few specific histories of international trade theory that do exist have addressed the dynamic theories of the classical economists (Irwin is an exception) but they tend to gloss over their uncomfortable normative consequences and present them as reinforcing their static theories. It is reasonable to assert that these more specific histories of the evolution of

international trade theory view theoretical developments as having been essentially progressive.

The main aim of this chapter has been to contest this hegemonic view that trade theory has followed a progressive path. On the contrary, it is claimed that international trade theory has been characterised by a retreat from social realism as it was reformulated in neoclassical terms. While the classical economists were essentially motivated by ontological considerations in their theoretical endeavours, this eventually ceased to be the case with neoclassical trade theory. This was partly achieved by simply ignoring early theoretical (neoclassical) challenges that qualified the central corpus of theory. Such neglect met with little resistance from the economists whose theoretical speculations were written out of history. A potential explanation for this uncontested disregard was the desire by Marshall and his disciples to establish economics as an independent scientific discipline with its own machinery of thought and its own set of techniques, that subsequently came to define the discipline. Economics (and international trade) became increasingly less concerned with the subject matter of the economy and more preoccupied with agreeing on a shared set of core concepts and on the application of certain techniques. The very techniques that came to define neoclassical theorising (rational choice maximisation) necessitated that the social world be described in an unrealistic way. One example of such a lack of realism is the concept of perfectly competitive markets. As Morgan (2001, pp. 13-14) pointed out, perfect competition is an abstract situation characterised by a lack of any active competition between firms. It is very far removed from free competition as conceptualized in the older classical tradition. While all theorising necessarily involves abstraction and the neglect of certain aspects of reality, it is hard to justify certain assumptions if their only purpose is to increase the formal tractability of models as opposed to highlighting some central causal feature of social reality. This is certainly the case with perfect competition. Yet, as we shall see in the next chapter, by the 1920s, the assumption of perfect competition had become so central to orthodox theory that subsequent challenges to free trade could now be defeated simply by questioning if theoretical speculation was consistent with

this view of markets. Silence was no longer a necessary defensive strategy when there existed concepts that even dissident voices were loath to challenge.

From this period on, research in trade was constrained within a narrow formal structure and was internally driven. It was protected to some extent by its non-empirical nature, since many of its central propositions could not be tested. Even when empirical evidence finally emerged that cast doubts on certain central positive claims of theory, it was named a paradox and had no impact on core theoretical assertions. Instead it led to new concepts (human capital), new measurement approaches and a rich vein of empirical research that tried to make reality conform to theory, while leaving the theory intact. The lack of any widespread subsequent dissent within the discipline is unsurprising given the education of economics students with its emphasis on techniques and problem solving and its lack of historical analysis. Even the great John Maynard Keynes illustrated the power of an economics education claiming that as late as 1923 he was still “a faithful pupil ... who did not at that time doubt what he had been taught and entertained on the matter [free trade] no reserves at all” (Keynes, 1997 [1936], p. 334). In seeking an explanation for economists’ denial of the obvious, he reaches for a religious analogy, saying that “it is a far greater exercise of the potency of an idea to exorcise the obvious than to introduce into men’s common notions the recondite and the remote.”(p. 351). Once international trade theory (like much of general equilibrium theory) became a formal system uninformed by ontological considerations, it had erected its own impregnable system of defence against all attacks. The ontic had been reduced to the theoretic and the only challenges that would be entertained were those of a family nature; that is to say, marginal objections by those who accepted the principal metaphors and constructs of mainstream theory.

Chapter 3. Trade II: The Forgotten Challenges to the Central Tenets of International Trade Theory

3.1 Introduction

The policy conclusions of the theory of comparative advantage are unambiguous; that non-interference by national governments in international trade is the optimal policy to pursue (to maximise national income) regardless of a country's level of economic development. The last chapter endeavoured to show that the transformation of the theory of comparative advantage into forms compatible with neoclassical microeconomics necessitated describing the social, economic and technological environment in an excessively narrow and idealised way. The next chapter will highlight how in the last quarter of the twentieth century, neoclassical trade theory appeared to reverse this trend by allowing for more variable technology, incorporating various types of market imperfections and, in some instances, jettisoning the general equilibrium framework when model requirements demanded same. However, this does not mean that, in the period between Ricardo's first exposition of comparative advantage and the eventual broadening of trade models to allow for market imperfections, challenges to the theory and its policy conclusions did not exist. They did, but they were insufficient to dislodge the dominant view that unilateral trade barrier dismantlement represented an act of enlightened national self-interest based on the unintuitive mainstream theory of trade. The reason for the failure of these challenges is what this chapter will attempt to address.

To do so, we must revisit the challenges to comparative advantage that its detractors forwarded and the basis for their various critiques. What emerges is that the primary reason for their failure to dislodge, or in any way influence, the evolution of mainstream trade theory, was due primarily to a series of diverse but effective immunizing strategies that mainstream practitioners deployed to preserve the core of classical and neo-classical trade theory intact. These ranged from: collective amnesia (where Cournot's trade theory was concerned); misrepresentation (of the nature of Manoilescu's challenge); the invocation of

unverifiable and essentially metaphysical concepts to undermine the apparent veracity of empirical challenges (Schuller's unemployed resources); consigning the issues to other sub-disciplines in economics but leaving international trade theory untouched (Keynesian macroeconomics and development economics); and grudging acceptance, ironically allied with a failure to incorporate the idea into trade theory until it could be safely neutered (infant industry as the one true exception to free trade). These tactics are very revealing of the nature of the neoclassical project and serve to illustrate how tool-driven, scientific, and detached from reality it is.

The layout of this chapter is as follows. Section 3.2 addresses the full employment assumption that underpins comparative advantage and the implications of idle or underutilised resources for the theory. This requires re-examining the market theories of Auguste Cournot (1971 [1838]), Richard Schuller (1905) and the various writings of John Maynard Keynes on employment and trade, together with the responses that the ensemble of writings provoked. Section 3.3 deals with the issue of structural heterogeneity (as far as resource productivity is concerned) across different sectors of the economy. This necessitates interrogating the theoretical objections of Frank Graham (1923, 1925) and the empirical and theoretical objections of Mihail Manoilescu (1931) to mainstream theory. Again, of particular interest is how leading trade theorists of their time reacted to these alternative theories. Section 3.4 resurrects the nature of the infant industry case for trade protection as variously argued by Alexander Hamilton (1827 [1791]), John Rae (1964 [1834]) and Friedrich List (2005b [1841]). We see that their arguments for departing from free trade logic were dynamic (they were well aware of the short-run costs of protection) and primarily concerned with issues of workers' and managers' capacities and how they were influenced, among other things, by the broader social and political environment in which they operated. Moreover, the case made by them for departing from free trade doctrine was considered to be sufficiently strong to serve (for a long time) as the one true theoretical exception to comparative advantage. In Section 3.5, we look at the trade aspects of the theories of some leading post-war Development Economists and how their appeal for a more socially relevant and dynamic trade theory not only appeared to fall on deaf ears

but to coincide with its theoretical opposite; that is to say, trade theory became, if anything, even more ahistorical and abstruse in the 1950s and 1960s. Finally, Section 3.6 concludes with various observations on what we have learnt about the nature of the neoclassical project from this analysis of the various challenges to, and defences of, mainstream trade theory.

3.2 Constant Employment and Free trade

3.2.1 The unusual case of how posterity has treated Auguste Cournot's theory of international trade

The partial equilibrium model of demand and supply, whereby demand and supply are negatively and positively related to own price, respectively, is generally attributed to Alfred Marshall, although it was first expressed in mathematical form by Auguste Cournot.¹⁶ Both Cournot and Marshall's student Henry Cunyngame applied these tools to show the effects of trade when communication is allowed between two previously isolated markets (Cournot, 1971 [1838] and Cunyngame, 1903). The positive account of the effect of market integration on the determination of prices, production and consumption in both markets and the flow of trade is the same in Cournot's mathematical exposition and Cunyngame's diagrammatic one. According to Creedy (1990, p. 100), Cunyngame produced the now familiar back-to-back diagram without any reference to Cournot but virtually paraphrasing the latter's introduction to his model. He added that it is not widely recognised that Cunyngame's treatment stems from Cournot, citing how the major study on the theory of trade by Jacob Viner fails to acknowledge that the diagram represented Cournot's model (Creedy, 1990, p. 100). This implicit criticism of Viner is, in this instance, unduly harsh, since the purpose of the section to which Creedy refers was to introduce the gains from trade as developed by Enrico Barone (1908) who also used (without attribution) Cunyngame's back-to-back diagram. Also, in the preceding section, Viner had interrogated and negatively pronounced on Cournot's trade analysis. However, Creedy's general point is valid; that is to

¹⁶ According to Creedy (1990, p. 99), Marshall said that he had read Cournot in 1868, while Vaggi and Groenewegen (2003, p. 228) confirm Cournot's influence on Marshall with the information that Marshall's first paper on the theory of value written circa 1870 dealt with price determination simply in terms of supply and demand, ignoring utility.

question why it is that a model of trade that is to be found in all contemporary textbooks and that owes its origin to Cournot is used without attribution or (probably in the majority of cases) even awareness of its originator? This is all the more striking given his high standing in general with the economics profession and the familiarity that contemporary students have with his other theories, such as Cournot oligopoly.

One explanation for this lacuna could be the uncomfortable normative conclusions that Cournot derived from his model, that stand in contrast to those forwarded by neoclassical theory, even as both sides use the same apparatus and show the same partial equilibrium effects of trade liberalisation. For, as Irving Fisher acknowledged, Cournot considered the extreme position of the free traders to be untenable (Fisher, 1898, p. 129). Indeed, in his analysis, he purported to show how a protective tariff may, under special circumstances, increase national income. This conclusion ran contrary to the views of a subsequent generation of neoclassical economists who did theoretical work on international trade. So, possibly the professional desire for academic unity when it came to core theories might explain why Cournot's contribution disappeared from view. An alternative reason forwarded for the neglect of Cournot's contribution to the theory of international trade is that it was written out of history because it was wrong. This was the view of Bertil Ohlin who remarked "Cournot's work on international trade has attracted little attention, which is no doubt partly to be explained by the fact that his conclusions are on the whole erroneous" (Ohlin, 1935, p. 563).¹⁷ However, accusing Cournot of logical errors is a disquieting position to adopt, given the high esteem in which he was held by a succeeding generation of neoclassical economists, especially for his mathematical ability. One way out of the impasse is to accuse him of protectionist sentiment that overrode his analytical judgement. This was the position adopted by Charles Bastable, for whom the only explanation why someone of Cournot's analytical power could have derived the conclusions that he did, had to be due to "bias against the free trade doctrine of Adam Smith and

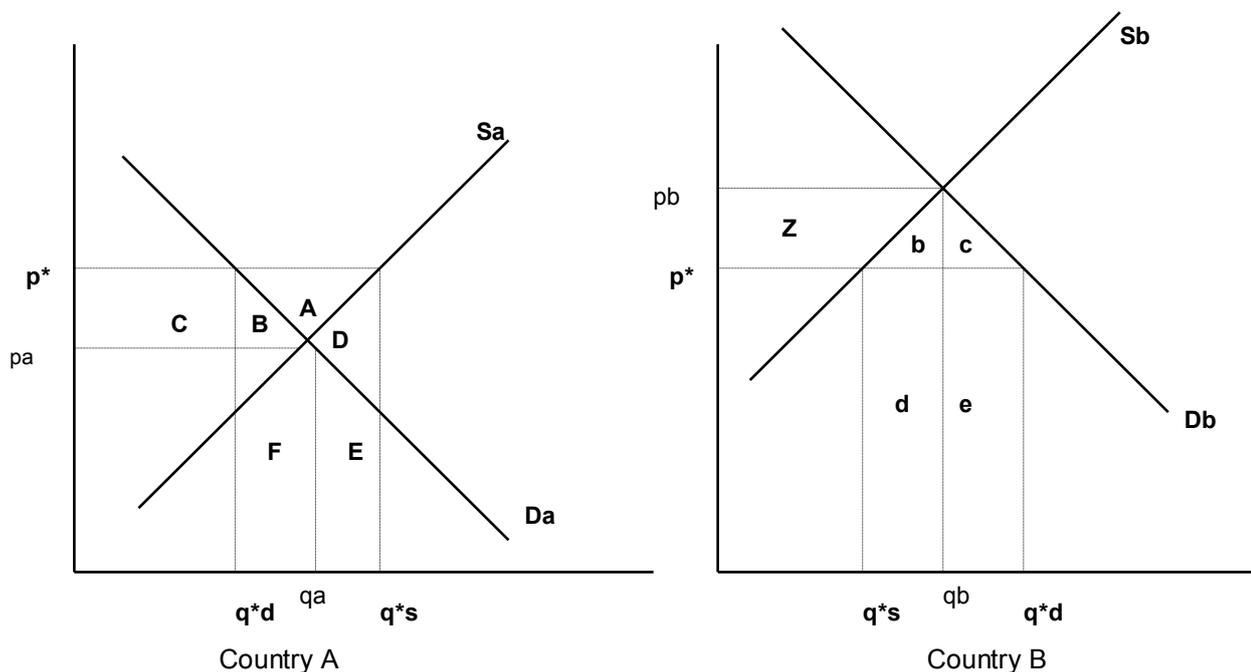
¹⁷ This judgement on Cournot is contained in Appendix II of Ohlin's original edition of *Interregional and International Trade*, where Ohlin discusses some earlier theories of trade. The appendix is not contained in the revised 1967 edition of the book.

his followers” (Bastable, 1903, p. 175). Fisher, by contrast, laid the blame squarely on Cournot’s faulty reasoning, which he attributed to “gross carelessness” (Fisher, 1898, p. 129). Consequently, Fisher suggests attaching little importance to Cournot’s speculations on the subject (Fisher, 1898, p. 132).¹⁸

What I shall attempt to do in the rest of this section is to analyse Cournot’s analysis of international trade and to show that it was internally logically consistent. Undoubtedly, he appeared to make some strong assumptions about employment dynamics and, to a lesser extent, consumer welfare, but those assumptions are no more extreme than those of his neoclassical critics, whose professional descendants unheedingly and unknowingly use the apparatus that is his technical legacy. In order to do this, a diagrammatic representation of his positive analysis will be reproduced and the implicit assumptions underpinning his normative conclusions will be contrasted with those of the neoclassical school. This analysis draws primarily on chapter 12 of Cournot (1971 [1838]).

What Cournot set out to do was to show how commerce between two markets caused the value of national income to vary in both the exporting and importing market. He defined equilibrium before and after trade. In country A, the before trade price, quantity equilibrium is p^a and q^a , while in country B, it is p^b and q^b . Implicit in Cournot’s analysis is the notion that the exporting (importing) country will be the one with the lower (higher) autarky price. In chapter 10, he had already defined equilibrium in both countries before trade (where domestic demand equals domestic supply) and after trade (where combined demand equals combined supply). Likewise it is taken as obvious that, for export (import) activity to occur, the international price would have to be higher

¹⁸ To bolster his case that Cournot was careless, Fisher, in a footnote (p. 132) points to an error that Cournot made when working out the effects on national income of free trade when transport costs exist, and the profits from same accrue to agents in the importing country. Fisher is correct in his accusation. The effect of transportation profits accruing to agents in the importing country is to reduce the losses to the importing country (applying Cournot’s model). However, the conclusion that Cournot reaches that such a reduction will turn losses into gains is not logically conclusive, in that it may or may not. However, this error by Cournot does not invalidate his general model on the effect of free trade on the importing country when transport costs are disregarded.



(lower) than the before trade price in the exporting (importing) country. In terms of the above diagrammatic representation of his analysis, the free trade price is p^* where country A's exports of $q^{*s} - q^a$ equals country B's imports of $q^b - q^{*s}$. There is no disagreement between Cournot and neoclassical economists on the positive representation of the effects of trade in the market for a single good, which explains the durability of his tools.

Cournot proceeded to look at the impact of trade on the income of producers and consumers. He concluded that producers in the exporting country A would enjoy an increase in income equal to $p^* q^{*s} - p^a q^a$, while consumers would suffer an income loss equal to $(p^* - p^a) q^{*d}$. In other words the aggregate change in income for the exporting country would be equivalent to the area $B+A+D+E$, which he concluded was unambiguously higher than it was before trade. By contrast for the importing country B, producer income would fall by $p^b q^b - p^* q^{*s}$, while consumers would enjoy an income gain of $(p^b - p^*) q^b$. The net effect would be a fall in aggregate income equivalent to the area d . The neoclassical interpretation of Cournot's diagram is that in the exporting country, producers

gain to the extent of $C+B+A$, while consumers lose to the extent of $C+B$, leaving a net gain to the country of A. For the importing country, producer loss is Z while consumer gain is $Z+b+c$, which is a net gain to the country of $b+c$. So in comparing Cournot's normative interpretation with that of subsequent neoclassical analysis, the exporting country gains more according to him, while the importing country loses. By contrast, for the neoclassicals the gains from exporting are smaller and the importing country gains too.

One criticism leveled at Cournot was his use of nominal prices to evaluate changes in income. Bastable (1903, p. 174) raised this point adding that since the value of money may vary between countries, this in itself is enough to render his results unsound. Edgeworth (1894c, p. 630) dismissed this criticism on the grounds that Cournot's reasoning was as valid as that of Marshall who used nominal prices when discussing consumer rent. In any case, since this partial equilibrium diagram is used in neoclassical economics to show the normative effects of trade, the appropriateness or otherwise of using money prices as a measure of value is extraneous to explaining how an identical diagram with identical equilibrium outcomes can yield such different normative conclusions. The essential difference lies in the interpretation of consumer welfare and the assumptions regarding markets in general, that underpin the respective analyses.

Cournot has been accused of inadequately addressing the effect of liberalisation on consumers' income (Viner, 1964 [1937], p. 588 and Gomes, 2003, pp. 93-94). In fact, Cournot explicitly recognises the income losses to consumers who stay in the market but must now pay a higher price in the exporting country and the income gains to existing consumers in the importing country. What he does not include are the presumed extra consumer income losses (gains) in the exporting (importing) country as a result of consumers exiting (entering) that particular market. He is explicit as to why he does this, saying that in the exporting country, consumers who leave the market will transfer to other markets the value of their previous purchases, albeit on goods less to their liking. This is a loss that Cournot considers to be "not capable of measurement" (Cournot, 1971 [1838], p. 154). Similarly, the advantage to consumers attracted

to a market because of lower prices “is incapable of valuation, and can only increase the mass of wealth indirectly” (p. 156). This may seem extreme but it is no more extreme than the alternative neoclassical interpretation which implicitly assumes that consumers who leave the market because of higher prices enjoy no consumer surplus with their alternative purchases or that those who enter the market had no consumer surplus with income previously spent on other goods. While one can acknowledge that by virtue of spending resources on good X as opposed to good Y, good X must be presumed to yield greater subjective satisfaction, it is misleading to represent the extent of the additional consumer gains as the area c for example for the importing country in the above diagram, since in reality this would be an upper bound to consumer gain which would only occur if no consumer surplus was feasible on alternative purchases.¹⁹

The other major fundamental difference between Cournot’s and neoclassical normative analyses is the presumed effect of trade on production in a country. Cournot is implicitly assuming that resources no longer employed in the import competing sector do not find employment elsewhere in the economy. Hence the loss of producer income in country B is not just Z (as in neoclassical interpretation) but Z+b+d. In contemporary language, we would say that he is assuming that the opportunity cost of production is zero. For similar reasons, when production increases in the exporting country, the gain in producer income equals C+B+A+D+E (not C+B+A as in neoclassical analysis). Undoubtedly, it is extreme to assume that resources no longer employed in the import competing sector do not find alternative employment elsewhere in the economy or that resources now employed in the export sector were idle previously, but it is no more extreme than the alternative neoclassical interpretation.²⁰ According to neoclassical analysis, the industry supply curve is

¹⁹ This is essentially a problem that arises from the necessity to use actual as opposed to compensated demand curves, since in the former instance the marginal utility of nominal income is not constant but instead varies inversely with price.

²⁰ There is some disagreement on whether Cournot was assuming lack of mobility of resources between sectors of the economy (see Viner 1964 [1937], p. 587, footnote 7). My understanding of what Cournot wrote was that employment in other sectors does not change because overall demand for their products remains unchanged. This would tie in with his claim that trade between two countries must be balanced. So, in the case of Country B depicted above, imports of d+e must be matched by an equivalent value of exports elsewhere. These exports come from reduced domestic demand for other goods to the value of d+e, with output remaining unchanged in other sectors of the economy. Just as

the marginal cost of production. This presupposes that the industry is perfectly competitive and producers treat prices as given. If markets are perfectly competitive, then market prices reflect social opportunity cost, which is the value added foregone elsewhere in the economy as a result of employing resources in this particular market. Increased import competition results in reduced domestic production in the import competing sector, and the presumption is that those resources released as a result of the domestic industry decline will find employment elsewhere at their social opportunity cost. So, for the import-competing country (Country B), the areas $b+d$ are not a loss, since that is the value of production that will ensue when the resources let go are re-employed elsewhere in the economy. Similarly, for the exporting country (Country A), the areas $D+E$ do not represent a net gain to the exporting country, since these extra resources that are now employed in order to expand production in this particular market, required a reduction in output elsewhere in the economy. For this to hold, economy-wide employment must be constant and resources employed in a sector must be paid their opportunity cost.

So, while it must be acknowledged that Cournot's implicit assumption about the nature of employment appears extreme, as possibly is his explicit failure to give weight to the income gain of new consumers attracted to a market by lower prices, this admission must be tempered by a similar awareness of how extreme are the assumptions that underpin neoclassical trade theory. A more realistic position would be to recognise that resources may have alternative uses but that there is no guarantee that in their alternative use, they would earn as much as in their current occupation, if employed at all. Furthermore, it may be that the alternative to current employment is unemployment.²¹ So, it is sufficient simply to assume that resources released from the import competing sector have an opportunity cost between zero (Cournot case) and $b+d$ (neoclassical case) and that consumers attracted into the market by lower prices have a real income gain

national output is deemed to fall by d , so too does national consumption, as consumption in other sectors falls by $d+e$ while consumption in the import competing market under consideration rises by e . A similar reasoning can be applied to Country A. This would explain why he insisted that the two countries "are not placed under symmetrical conditions" (Cournot, 1971 [1838], p. 163).

²¹ In the preceding chapter on Social Income, Cournot alludes to the possibility of displaced resources finding less well remunerated alternative employment (p. 147) as well as the possibility that resources are specific to a sector (p. 148).

of between zero (Cournot case) and c (neoclassical case) for the real income effects of trade liberalisation to be ambiguous. Arguably, Cournot's analysis and the neoclassical analysis represent two extremes with the gain of $b+c$ being an upper bound and the loss of $-d$ a lower bound when it comes to the effect on national income of international trade liberalisation.

What the above analysis shows is that disputes in economics need to be resolved empirically. It is not simply a matter of analytical rigour. Both Cournot's and the neoclassical analysis of trade are internally consistent. Where they differ is in their assumptions as to how the economy generally and markets in particular function. Is full employment a reasonable assumption or is the equilibrium rate of unemployment the actual existing rate of unemployment? Are markets perfectly competitive in the sense that all agents are price takers and do owners of productive resources, including labour, get paid their opportunity cost (no economic rents)? The validity of their respective conclusions depend on the validity of their model assumptions. Tellingly, Cournot developed his analysis of market behaviour inductively. His demand and supply analysis corresponded to the regularities of market behaviour that he observed. By contrast, neoclassical use of Marshall's partial equilibrium diagram is based on abstract deductive logic that gives a utilitarian, marginalist interpretation to consumption and production behaviour. To arbitrate between the two positions, it is first necessary to be aware that there are indeed two positions. The neglect of the substantive aspect of Cournot's historical legacy (as opposed to his tools of analysis) does not reflect well on the discipline of economics and it is neither correct nor sufficient to justify this lapse on the grounds that Cournot's analysis was wrong. Furthermore, exposing students to the two alternative conclusions to be derived from the same set of analytical tools would not only encourage critical debate, it would inevitably raise interesting epistemological issues as to how one establishes which theory gives a better representation of the causal forces at work in society.

3.2.2 Schuller and the empirical reality of underutilised resources

The economist Richard Schuller made an argument for protection on the grounds that the existence of idle and underutilized resources is the norm in countries:

the productive forces of a State are exploited in very different degrees – or not at all ... fertile soil, deposits of coal, ore and minerals, and water power – constitute the most sharply defined productive factor ... Nevertheless, no country exploits them to their maximum capacity, but every State has them at its disposal for the purposes of expanding the branches of production for which they are required (Schuller, 1921 [1905], p. 378).

What is true for natural resources also holds for labour “[it is] untrue to say that the active working-force of a country constitutes a fixed quantity which determines the expansion of production as a definite value that cannot be diminished in consequence of foreign competition” (p. 378). He cites “migration” the reality that workers may be “unemployed” or if employed may be “fully or partially active according as factories find a larger or smaller outlet for their products” (p. 379). Even employed workers have variable productivity depending on whether they are “employed in a capacity commensurate with their qualifications” (p. 379) and whether the worker “exerts himself or not” (p. 380). Similarly, Schuller disputes that the quantity of capital in a country is a fixed datum and furthermore contends that, even if it were fixed, this does not negate varying degrees of production (p. 380-381). All of which leads him to conclude that “The possibilities of development of the productive forces of a given territory are ... very diverse; and foreign competition may lead to a retardation of domestic production, hampering the utilization of available but as yet unexploited productive forces” (p. 382). Or even more strongly “[the] consequences of a transition from a system of protection to one of free trade ... may ... involve a considerable diminution of domestic production” which he also felt could be “*permanent*” (p. 383). So, as noted by Haberler (1936, p. 188), one justification for tariffs is to bring about the utilization of such idle means of production and lead to an increase in total production in the country. According to Gomes (2003, pp. 123-124), Schuller discussed how manufacturing could be ruined, even when foreign producers were only slightly more efficient than domestic manufacturers. He also mentions Schuller’s partial equilibrium

approach and how, given the elasticities of demand and supply at home and abroad, only small tariffs were needed to have the desired protective effects.

So, unlike Cournot, Schuller is very explicit as to the underlying reasons why he believed that there is not a general principle in favour of free trade, which is the existence of unemployed resources. It can only be assumed that this assertion was based on his interpretation of the economic reality that he observed, a view bolstered by his discussion of elasticities in different sectors of the economy and his claim that diminishing returns is less pronounced in manufactures than in agriculture, as noted by Bickerdike (1905, pp. 413-414).

Of interest is the reaction of the neoclassical fraternity to his thesis in favour of occasional judicious protection. The first notable reaction was from C. F. Bickerdike who, while acknowledging that the Schuller case was systematically presented and carefully argued, classed him “with the mystics” when it comes to the balance of trade and concluded his review with the assertion that it would not be sufficient to convince any free traders, mainly because they do not admit that “the import of competitive goods can, except temporarily, cause greater losses to producers than gain to consumers” (Bickerdike, 1905, p. 415).²² The crux of Bickerdike’s counterargument is to insist that no free trader will admit that unemployment can persist as other than a short-run phenomenon. His argument is as follows:

If resources in a sector cannot find alternative employment then wages and profits will fall sufficiently to allow the sector to compete with the foreign competition. In this instance, the loss to domestic producers is a gain to domestic consumers, so there is no loss. Alternatively, resources may shift to other sectors if the return there is greater than in the existing sector that is subject to increased import competition. In this instance, the economy as a whole gains (p. 414).

The claim that unutilised means of production is no argument for tariffs was reiterated thirty years later by Haberler. The latter’s analysis is similar to

²² Regarding the balance of trade, what Schuller challenged was the “mechanical conception of commercial intercourse” (Schuller, 1921 [1905], p. 383). He was at pains to stress that trade balance could be achieved in different ways, so that while an increase in imports must necessitate an increase in exports, this did not imply anything about production (which could fall or stay the same) since the same effect could be achieved by reduced domestic consumption (p. 384). This is similar to Cournot’s argument although, it is more clearly expressed by Schuller.

Bickerdike's although he defends the case with the use of numerical analysis. Haberler is at pains to emphasise that resource immobility and specific means of production are not an argument for protection. In his analysis, if a factor of production is specific to a sector, then its earnings can be classified as economic rents. As is the way with rents, if increased competition were to cause the value of the product to fall, this would result in a fall in the value of the rent accruing to the specific factor. On the other hand, if any factors are not completely sector-specific but can be used elsewhere, then their value will be written down to what they are worth elsewhere (see Haberler, 1936, pp. 183-186). Haberler acknowledges that his analysis rests upon the assumption "that competition ensures flexible prices and, in particular, that the prices of specific factors will fall, if necessary to zero before their owners cease to use them" (p. 187). He does concede that the assumption of price flexibility may not apply to labour but considers this to be of less consequence since labour is the least specific factor of production. To the extent that unemployment of labour does exist, Haberler accepts that it is a loss but views such unemployment as being due to a friction and sees it as being at worst transitional (p. 187).

What Bickerdike and Haberler have in common is a denial of the possibility that unemployment can be anything other than a short-run phenomenon. Both accept that it can occur in that workers' "obstinacy may compel employers to shut down works occasionally" (Bickerdike, 1905, p. 415) or "modern developments have tended, and still do tend, to lessen the mobility and adaptability of labour" such developments being "the strength of organised labour ... and State intervention in labour questions, especially in connection with unemployment insurance and unemployment relief" (Haberler, 1936, p. 194). So the message is clear, unemployment if it persists would have to be attributable to irrationality on the part of workers or institutional interventions in the working of the market. As for Schuller's assertion that tariffs can increase total production in an economy, given that unutilised means of production are an empirical fact, Haberler claims that this argument, as far as other material means of production are concerned "rests upon a fallacy" (p. 188). Here he distinguishes maximum utilisation from optimal utilisation. If material resources are not being utilised, it must be because it does not make economic sense to utilise them. Omniscient

rationality on the part of those controlling resources means what we observe must be for the (economic) best. Alternatively, if miscalculation or error occurs in investment, then it is best treated as a sunk cost or as Haberler says “in economic affairs by-gones are by-gones” (p. 189).

Subsequent historians of economic thought appear to agree that Schuller’s argument did not stand up to scrutiny. For Gomes “A certain amount of unutilised resources is inevitable in a dynamic growing economy. Market adjustments will leave some specific factors temporarily idle; and while such transitional adjustments may result in private losses to the owners of specific factors, the community as a whole gains from the more efficient deployment of available resources” (Gomes, 2003, p. 125). Irwin deals with Schuller’s argument in a footnote claiming that that “his argument lacked satisfactory theoretical underpinnings” (Irwin, 1996, p. 190). While Irwin does not specify what he would consider to be a satisfactory theoretical basis for Schuller’s inconvenient empirical observation, one can hazard a guess that it would probably include Haberler type claims, that attribute unemployment to institutionally imposed (and therefore potentially reversible) price rigidities.

As already mentioned, unemployed resources are implicit in Cournot’s analysis, possibly indicating that he felt no need to defend this view of markets. Schuller, by contrast, is explicit that the empirical reality of unutilised and underutilised resources represents a case for protection in some instances. Yet the latter’s appeal to empirical reality did not constitute a sufficient case in the minds of those neoclassical economists who deigned to respond to the challenge. What is striking is their invocation of other unverifiable concepts to undermine the case. Unemployment cannot exist in the long run because it would be irrational. So, what one perceives, must be a short-run phenomenon, “a milestone upon the road of economic progress” (Haberler, 1936, p. 188). Or if the reality is accepted, it must be optimal, again because of the unverifiable assumption that decision makers are rational and the implicit assumption that micro rationality cannot result in macro irrationality. This is just another example of one of the immunising strategies that the neoclassical orthodoxy deploys in the face of theoretical challenges. Deny apparent reality or claim that it is something

different to what it appears and support the assertion by invoking unverified and fundamentally metaphysical concepts.²³

3.2.3 Keynes and the macroeconomic reality of inefficient economic equilibrium

“If there is one thing protection can not do, it is cure Unemployment ... But the claim to cure Unemployment involves the Protectionist fallacy in its grossest and crudest form” (Keynes, 1923, cited in Keynes, 1997 [1936]). Yet by the 1930s, Keynes was making a case for protection on employment grounds saying that the problem with the free trade argument was that it assumed “if you throw men out of work in one direction you re-employ them in another. As soon as that link in the chain is broken the whole of the free trade argument breaks down.” (Keynes, 2013 [1981] p. 117).

Keynes’s views on international trade theory and policy have been subject to varying retrospective interpretations. For some, Keynes was and remained at heart a free trader and his espousal of protectionism for Britain in the 1930s was a practical solution given the constraints of the Gold Standard. This was the view of Roy Harrod who declared that “If the Gold Standard had broken down early in 1930, I have no doubt that Keynes would have remained a Free Trader” (Harrod, 1951, p. 431). By contrast, for Joan Robinson, Keynes’s views underwent a transformation as evidenced by his defence of mercantilism in the *General Theory*. According to her, Keynes had been a dogmatic free trader in his youth but with his usual lack of patriotism for his own ideas he chose himself in the *General Theory* as the exponent of the doctrine that he wanted to attack (Robinson, 1962, p. 86).

The context for Keynes’s public disavowal of his previously free trade position was the economic depression in the UK in the 1930s. In his testimony to the

²³ Viner also interrogated Schuller’s thesis but from a different angle. He placed emphasis on Schuller’s assertion of differences in the cost of production among producers in an industry. According to Viner, under free competition, marginal costs should be equal across producers, in both the short and long run. He also asserts that it is marginal cost and not average cost that regulates value. For that reason, he dismisses Schuller’s case as being without force. Here Viner invokes two other unverified concepts: (i) that markets are competitive and; (ii) that the volume of production in a firm is determined by marginal cost considerations.

Macmillan Committee on Finance and Industry, set up to offer advice to the British Government at the onset of the Depression, Keynes proposed a ten percent uniform tariff on all manufactured imports and an export subsidy (Gomes, 2003, p. 283). This was in February 1930. Later that year, the UK Prime Minister Ramsey McDonald established a Committee of Economists to review the economic conditions in Britain and indicate possible policies for recovery. Keynes chaired the committee. As part of his contribution to the discussion, Keynes denied that up to 1929, real wages had grown faster than output per capita and saw unemployment as being a consequence of the economic slump, the high exchange rate and the stance of monetary policy (p. 282). In September 1930, Keynes raised the issue of tariffs as a potential solution to the economic crisis, claiming that the gains from specialisation and free trade were not as great as they had been in the nineteenth century for manufacturing countries as well as citing the increased employment argument for protection (p. 284). The majority of economists on the committee backed the proposal for protection with Lionel Robbins being a notable exception. The disagreement among economists about the desirability of protection went public when Keynes, in a series of articles to the *New Statesmen and Nation*, espoused protection (p. 286). The main critics of Keynes's stance came from economists at the London School of Economics (LSE), who disagreed with the assertion that protection could add to employment. They also claimed that any restriction on imports would lead to an equivalent reduction in exports (Irwin, 1996, pp. 196-197). In September 1931, Britain left the gold standard and, in a letter to *The Times* shortly afterwards, Keynes dropped his call for a tariff, instead suggesting other measures to stimulate economic recovery (pp. 197-198).

The subsequent debate on Keynes's utterances and writings on international trade deals with three related issues. The first is whether the later Keynes returned to the free trade fold or not. The second is whether the *General Theory* supports or undermines the case for free trade. And the third is whether trade intervention is really only a second best policy.

For Donald Winch, Keynes's apostasy in the early 1930s was due to the pressures of the immediate situation (Winch, 1969, p. 151). Similarly, Barry

Eichengreen claimed that protection remained for Keynes a second best policy “one that the authorities might be forced to avail of if other constraints prevented the adoption of first best measures” (Eichengreen, 1984, p. 364). Yet, even after Britain left the gold standard, Keynes endorsed protectionism for certain industries: motorcars, for economies of scale reasons; iron and steel, for equity reasons and; agriculture, for public good reasons (see Eichengreen, 1984, p. 371). Also, in 1933 Keynes wrote an article entitled *National Self-Sufficiency*, where he said “Ideas, knowledge, art, hospitality, travel – these are things which should be of their nature international. But let goods be homespun whenever it is reasonable and conveniently possible; and, above all, let finance be primarily national.” (Keynes, 1933, p. 758). While Eichengreen acknowledges these lapses from free trade orthodoxy, he attributes such protectionist sentiments to Keynes’s infatuation with “central control of the economy” a position that he claims “is difficult to reconcile with his prior or subsequent views” (Eichengreen, 1984, p. 371). Indeed Eichengreen claims that in the years of the *General Theory* and after, Keynes focused increasingly on “demand management to maintain full employment rather than on planning to influence inefficient resource allocation” (p. 372). Gomes is also of the opinion that the debate between Keynes and his adversaries in the early 1930s was not about fundamental differences and that Keynes’s position was essentially pragmatic. Nevertheless, he does maintain that, subsequently, Keynes never fully regained his faith in free trade (Gomes, 2003, pp. 290-291). Irwin goes further in alleging that Keynes’s views on trade protection hardened over time and that, while Keynes of the early 1930 clearly appreciated the gains from trade (despite his occasional remarks deprecating such gains), Keynes of the 1940s was much less of a friend to free trade (Irwin, 1996, p. 200). For example, Irwin mentions how the later Keynes favoured protection over currency devaluation as a way of addressing the problem of insufficient demand, since devaluation tended to worsen a country’s terms of trade and could even worsen the trade balance under certain circumstances, disadvantages not shared by tariffs. (p. 201).

Chapter 23 of Keynes’s *General Theory* is a defence of mercantilism against its subsequent dismissal by classical economists. For him, the substance of the mercantilist case was the idea that there was no self-adjusting tendency that

ensured that resources in the economy were fully and optimally employed. While he believed that the mercantilists perceived the problem of inadequate demand without being able to solve it, his charge against the classical economists was that they ignored the problem by “introducing into their premises conditions which assumed its non-existence” (Keynes, 1997 [1936], p. 350). For comparative advantage and the gains from trade to work, full employment must be taken for granted. He underlined that economists never made any concession to protection on that score; that is to say, that it might increase employment. Yet, according to Irwin, Keynes in this chapter was really arguing against the theoretical foundations of laissez-faire as opposed to making a case for the systematic restriction of trade. He talks of how Keynes mentioned the much cited practical disadvantages of protection, from administrative incompetence to such measures being a zero sum game internationally (Irwin, 1996, p. 199). Irwin’s position is contestable since Keynes’s case against the classical economists and their espousal of free trade derived from his jaundiced view of the operation of free markets and the inadequacy of the laissez-faire doctrine. For the classical economists, with their belief in the self-regulating nature of markets, preoccupation with the balance of payments was a waste of time, since interest rates and the level of investment would always settle at their optimum level (Keynes, 1997 [1936], p. 339). These were errors of which the mercantilists were not guilty, knowing that excessive liquidity preference and high rates of interest had a negative effect on economic activity and that a favourable balance of payments was one solution, since it encouraged economic activity directly (in terms of demand for products) and indirectly through its impact on interest rates. According to Keynes “the methods of the early pioneers of economic thinking in the sixteenth and seventeenth centuries may have attained to fragments of practical wisdom which the unrealistic abstractions of Ricardo first forgot and then obliterated” (p. 340). Where Irwin’s assertion has some force (when denying the link between the challenge to laissez-faire and protectionism) is the recognition that achieving a favourable balance of payments can be complex. But, as Keynes pointed out, mercantilists were well aware of this, which is why they were not naïve protectionists. Moreover, mercantilists were also cogniscent of the practical limitations of their balance of trade fixation such as its zero sum nature or, worse, negative

senseless international competition if carried too far. Keynes highlighted all of these dangers by way of showing the sophistication of the mercantilist case and even added other practical drawbacks such as the danger of rent seeking. Furthermore, he conceded that for mid-nineteenth century Britain, complete freedom of trade was probably the policy most conducive to a favourable balance of trade. However, all these caveats notwithstanding, he accused orthodox economists (his younger self included) of faulty logic insufficiently tempered by commonsense (p. 349). Unemployed resources may exist because of insufficient demand. The latter arises partly because of the peculiarity of money as a store of wealth whereby, according to his macro theory, the rate of interest is really a monetary phenomenon, which is why savings can exceed investment. Also, he held that capital is brought into existence more in response to demand than by the propensity to save. All of which lent theoretical support to policy intervention if it were to lead to increased aggregate demand. Protection is one such potential policy tool, which is why he advocated its use in the early 1930s when Britain experienced high levels of unemployment due to what he perceived to be inadequate demand. This was the view of his followers such as Joan Robinson for whom, “As soon as the assumption of full employment is removed, the classical model for the analysis of trade is reduced to a wreckage” (Robinson, 1946-47, p. 112).²⁴

Another line of attack against the unemployment case for protection is to allege that trade interference is really a second (or third) best policy. Hicks expressed this view when he conceded that while protection with full employment might be preferable to free trade with unemployment, the real issue is whether “full employment with free trade ... really is out of reach” (Hicks, 1959, p. 53). This view tailors nicely with free traders such as Haberler, for whom persistent unemployment had to be a consequence of insufficient wage flexibility in a downward direction. As will be shown in the next chapter, rigid wages were the

²⁴ None of the aforementioned is incompatible with Keynes’s support for a rules based system of multilateral trade liberalisation during the negotiations in Bretton Woods, which led to a new post-war international monetary architecture that included pegged exchange rates and capital controls. All should be seen as a reaction to the economic chaos of the 1930s, where the rigidity of the gold standard was replaced with competitive currency devaluations and where the breakdown in international trade failed to arrest unemployment and economic depression. The overarching principle guiding Keynes’s position was “Never again!” – never again anything like the 1930s.

first kind of market imperfection that was permitted into the general equilibrium model of trade. Arguably, its acceptance by orthodox economists may have been because it did not really present much of a challenge to the free trade is best school of thought, since they had ready-made solutions to the unemployment consequences of freer trade, arguing that the issue was not free trade per se but the factor market imperfection that was exacerbated by free trade. An interesting angle on the implications of Keynes's macro theory for free trade is that forwarded by the self-styled Keynesian and passionate endorser of free trade, Paul Krugman. When defending the Ricardian model of comparative advantage he acknowledged that it was based on a number of implicit assumptions one of which was constant employment. However for him, "Constant employment is a reasonable approximation" either because "international trade is a long run issue and in the long run the economy has a natural self-correcting tendency to return to full employment" or because "it makes sense to think of the Federal Reserve and its counterparts acting in the background to hold employment constant" (Krugman, 1998a, p. 30). Effectively, what Krugman is arguing is that an activist macro policy renders redundant (or second or third best) the employment argument for trade intervention. Rather incongruously, Irwin claimed that it was the subsequent undermining of Keynesian macroeconomics by Monetarism and New Classical theories (that dispute the efficacy of an activist macro policy in determining the level of economic activity in both the short and long run) that limited the Keynesian case for protection. So the theoretical case for free trade against the challenge that unemployment poses is, on the one hand the efficacy of macro policy, and on the other, the inefficacy of the self same policy. What kind of truth is established by this *reductio ad absurdum* is hard to say.

What is interesting to note though is that long before the backlash happened against Keynesian macroeconomics, Keynes's challenge to the free market and the policy (or non policy) of *laissez-faire* appeared to have no impact on the development of trade theory. This is evident from the published work in mainstream economic journals and from textbooks in international economics. In the 25 years of relatively unchallenged Keynesian macroeconomic supremacy (from the late 1940s to the early 1970s), the dominant model of trade

was based on a perfectly competitive general equilibrium view of the world, where all resources were assumed to be fully and efficiently employed. Maybe, this was possible precisely because Keynes's theories were safely corralled into the new sub-discipline of macroeconomics and the frontiers between developments in the different sub-disciplines proved relatively impermeable, thus avoiding cross infection with heretical ideas. Or, possibly the Krugman position (that activist macro policy is sufficient to ensure constant employment) allowed trade theory to evolve along the lines dictated by a moneyless economy, where all resource allocation decisions are determined solely by relative prices and protection merely shifts resources from one sector to another. But, even accepting the latter argument, one must still question why the employment basis for trade interference never gets mentioned (even as a second best policy), especially since it so accords with the commonsense view. One is tempted to agree in the affirmative with Keynes's question (when wondering at the virulence of his detractors over his public stance on tariffs in 1931) when he asked "Is it that economics is a queer subject or in a queer state" (Keynes, 2013 [1981], p 505). For Joan Robinson, the answer to the question was ideological. Free trade was an ideology that had long outlived its usefulness for Britain at the time Keynes turned apostate, but its grip on men's minds showed how little logic an ideology needs (Robinson, 1962, p. 88). This, however, begs the question of whose interests were being served by the resistance of the neoclassical profession to the seemingly plausible assertion that trade protection could result in increased employment, especially in an environment where unemployed resources formed part of the apparent empirical reality.

3.3 The Quality of Work and Nature of Production

3.3.1 *Graham's theoretical challenge*

In 1923, Frank Graham resurrected the case of variable returns to scale in production in order to show that "the principle of comparative advantage is no infallible criterion of the best commercial policy, even from a purely economic point of view" (Graham, 1923, p. 200). In common with many critics of the principle, part of his motivation was to explain the dissonance between

theoretical best practice and the actual practice of commercial policy.²⁵ For Graham, it was the preference for manufactures that was the secret of protection, and he wanted to explain the basis for this preference for manufactures (p. 201). He held that it was because most saw that manufactures (unlike agriculture) made for economic prosperity. That economists failed to acknowledge what he believed to be an empirically informed view, he attributed to their reliance on deductive logic (pp. 201-202). His theoretical counter-attack was not novel, since it had already been forwarded by Nicholson (1903, pp. 307-09), even though he made no reference to the latter. He used a variety of hypothetical numerical examples to represent what would happen if a country specialised according to its comparative advantage in a situation where manufactures was characterised by increasing returns to scale and hence decreasing costs while agriculture was characterised by decreasing returns to scale or increasing costs. The country with a comparative advantage in agriculture would lose, as the reallocation of its resources away from manufactures to agriculture would result in a lowering of the average productivity of its resources at a national level. He also dismissed the notion of compensating gains for the agricultural country through improved terms of trade arguing presciently that “world demand for goods produced at decreasing costs is growing more rapidly than that for goods produced at increasing costs” (Graham, 1923, pp. 213-214). While he acknowledged that specialisation according to comparative advantage (even in his hypothetical examples) resulted in the efficient global use of resources, he dismissed this as a sufficient argument for free trade, as it did not make sense to him for a country’s policy makers to act against their own national economic self-interest. In short, he claimed that he had provided an economic justification for permanent protection for countries whose comparative disadvantage was in manufacturing. He saw himself going much further than those who argued for temporary educative

²⁵ Economists have long been challenged by the need to explain why their policy advice appears to be so routinely ignored by policy makers. In the last thirty years, the commonest defence has been to invoke public choice arguments that essentially assert that policy makers interested in re-election will pander to sectional interests that may not be in the national interest (see Baldwin, 1989, for a synthesis of this literature). Another defence has been to lay the emphasis on policy makers’ lack of economic understanding, since as Krugman argued comparative advantage is “truly, madly deeply difficult” (Krugman, 1998a, p. 35), the implication being that it is a concept not readily accessible to the untrained mind.

tariffs for some countries at a certain stage of their economic development (such as Alexander Hamilton and Friedrich List), since for him their arguments conceded too much, in that they predicated the success of such a policy on the protected sectors eventually being able to compete successfully without such protection. By contrast, Graham aimed to show that a country could gain from protection even if it never developed to the point where it could survive without it (pp. 202-203). While he acknowledged that his thesis was primarily theoretical, he nevertheless cited examples to give his case more empirical respectability. That the economic success of France, Germany and the USA coincided with them becoming industrialised and pursuing protectionist policies was, he felt, proof that protection was a factor whose contribution could not be discounted (p. 225).

The principal critics of Graham's argument for protection were Frank Knight, Haberler and Viner. For Knight, the existence of economies of scale at the firm level meant that either the productive unit would grow until such economies no longer existed or else monopoly would ensue (Knight, 1924, p. 597). In neither instance did he accept that increased competition through international trade could lead to a lowering of national production. This point was reiterated by Haberler and Viner. For Haberler, the monopolist is in a position to survey the situation as a whole and to decide what output is most profitable under changed conditions. Therefore, the monopolist will never blindly make a decision that is not profit maximising (Haberler, 1936, p. 205). Viner claimed that it was Graham's use of average costs and his failure to deal with the problem in terms of marginal costs and marginal returns that led him into error, saying that if he had dealt with the problem in marginal terms, he could not have obtained results unfavourable to free trade (Viner, 1964 [1937], p. 480).

All conceded that if economies of scale were external to the firm but internal to the national industry, then Graham's case was valid, even as they proceeded to dismiss external economies as primarily a theoretical curiosity with little empirical weight. Graham's response to Knight's argument about internal and external economies of scale was to claim that such a nomenclature was not central to the issue, since what was at stake was the actual existence of such

economies associated with increased volume of output in manufactures. As a point of logic, Graham's response was inadequate (even though his economic intuition was well-grounded) and, the examples that he cited in his reply to Knight were of external economies, even if he did not designate them as such (Graham, 1925, p. 325). The external economies argument was crucial, since it was necessary in order to show logically how it was that individual producers could make rational decisions that had collectively irrational consequences (to the extent that their decisions lowered the productivity of resources). Knight proceeded to argue the case for external diseconomies of scale being more likely than external economies of scale, as firms competed for scarce resources (Knight, 1925, p. 332). Since he "never succeeded in picturing them in my mind, or finding any convincing reason to believe they exist" (p. 332), he felt that this placed the "onus probandi on anyone who advocates the contrary principle" (pp. 332-333). He attempted to diminish further the weight of Graham's argument for protection by claiming that, even when external economies of scale existed in manufacturing, the country importing the latter would enjoy a terms of trade gain. Again his logic is impeccable, if external economies of scale exist, competitive conditions are not undermined, so the exporter of manufactures will pass on the cost benefits of expansion in the form of lower prices to the importer. Haberler was similarly sceptical of the empirical relevance of external economies of scale and the practicality of a protectionist policy based on their presumed existence, since he felt that they were too vague and difficult to measure. He also qualified the plausibility of the theoretical case, citing how economies external to one industry could be internal to another, therefore creating the incentive for vertical integration and the exploitation of such economies (Haberler, 1936, p. 208). In the same way, Viner gave examples of external economies that were either not genuine or irrelevant. To the extent that an industry's economies were pecuniary in nature, that is, they were derived by an industry at the expense of other domestic producers in other sectors, then their exploitation in no way benefited a country. Or, if they did exist, but were a function of the size of the global industry (as opposed to the national industry), then there could be no loss to a country if its increasing returns sector shrunk in size, since the productivity of its resources would be enhanced by the expansion of the foreign industry (Viner, 1964 [1937], p. 480).

Neither Graham, nor his challengers relied on direct empirical evidence when making their contrasting contentions. All operated in the realm of deductive logic when describing the different types of economies of scale and how they might operate. As far as the evolution of trade theory is concerned, while the issue of external economies did raise its head periodically, and no one was able to show any logical flaws in the intrinsic argument, it in no way undermined the faith in comparative advantage. Irwin concedes that the issue was never satisfactorily resolved in the aftermath of Graham's article and that the study of trade-related aspects of external economies nearly evaporated until the early 1980s, despite the logical veracity of the case (Irwin, 1996, p. 151). Yet, he effectively defends the status quo claiming the need for more evidence on the existence of such economies or the description of more plausible market structures that could explain how they could arise. Similarly Gomes, while granting the intrinsic merit of the Graham argument, cites the position adopted in the recent literature against policy activism, as evidence of its empirical irrelevance (Gomes, 2003, p. 132).

As already mentioned when talking about Cournot's trade theory, what the debate about Graham's theoretical speculations reveals is the need for empirical evidence to arbitrate between competing theoretical models. Furthermore, it is not adequate to argue, as Graham's critics have done, that the onus was on him to show that external economies of scale exist. There is an equal onus on them to show that they do not. In any case, it is disingenuous of his critics to call for empirical evidence when the orthodoxy is being challenged, given how extraneous empirical evidence has been to the evolution of the self same orthodoxy. As we shall see in the next section, a not dissimilar argument to Graham's (that productivity is variable across sectors of the economy and policy should be oriented towards encouraging the expansion of the more productive sectors) was advanced just a few years after the debate between Graham and his critics, but it took as its starting point the empirical evidence of heterogeneous sectoral productivity of resources. So it was not simply an abstract theoretical exercise. What the reaction to this exercise revealed is that empirical evidence was not sufficient to shake an orthodox view, especially in a discipline like

economics that bases its theory on constructs that are not observable and therefore open to challenge. If there is a seeming conflict between empirical reality and theory, then it must be either more apparent than real or some extraneous non-economic reason must be found to explain the anomaly.

3.3.2 *Manoilescu's empirical observations*

In 1929 the Romanian economist and Minister for Trade and Industry published a book making a theoretical and what he believed to be scientific case for (if necessary, permanent) protection of selected industries. This book was published in English for the first time in 1931 and was entitled *The Theory of Protection and International Trade* (Manoilescu, 1931). Manoilescu's objective was to overturn Ricardo's theory of comparative advantage and to show that, especially for backward agricultural countries, economic development necessitated the selective protection of certain industrial sectors. Manoilescu's motivation was, among other things, to provide theoretical respectability for what was widespread practice, while at the same time, providing scientific principles for when and where protection should be applied. "It appears to us to be the greatest paradox of science and social life that so important a phenomenon as protection could be developed without the approval of science, indeed in spite of science and contrary to science." (Manoilescu, 1931, p. 6). He did not accept that critics of free trade such as Friedrich List had done a sufficient job claiming that they weakened protection as a general principle, "He presents protection as the exception and grants the character of general validity to the free trade system" (p. xxii). Another gripe was that, not only did List advocate temporary protection for some industries in some countries passing through certain phases of economic and social evolution but the presumed benefits of such protection were partially social and definitely in the future. By contrast, Manoilescu claimed that he was interested only in the direct, present advantages of the policy of protection (ignoring indirect, social and future benefits). His unit of analysis was the country and, contrary to the orthodox views of free trade economists, he challenged the notion that what made sense for the individual made sense for the nation.

The foundation on which Manoilescu built his theory was the empirical regularity which he amply documented, that everywhere, the productivity of manufacturing exceeds the productivity of agriculture. He presented data on the average productivity per worker in different sectors of the economy in countries as diverse as the USA, Holland, Romania and Bulgaria. While he acknowledged differences in hours of work and the quality of labour, he asserted that what made the greatest difference between the different kinds of production “is the organization of the combination of material forces (physical or chemical), be it in agriculture or industry” (p. 28). Another contention of his was that the productivity of industry was more consistent internationally than the productivity of agriculture. In partial support of this conclusion, he cited the value of production per head of producer in agriculture and in industry in Russia, England and the USA. His data showed that while the US was 20 times as productive as Russia in agriculture, it was 10 times as productive in industry. The comparable ratios between England and Russia were 12 and 1.75, respectively (p. 43). He also cited data showing how the ratio of industrial productivity to agricultural productivity in the US fell in the period between 1880 and 1920 (p. 44). From this he concluded that it was agricultural or backward countries (he saw the two as being synonymous) that could derive the greatest benefit from industrialisation. “It follows that for agricultural and backward countries, there is a greater advantage to pass from agricultural to industrial production” (pp. 43-44).

In his theoretical analysis Manoilescu held that price was the immediate proxy for value (p. 63). He contrasted the complexity of decision making by policy makers in the national interest with those of self-interested individuals. He said that while it was natural for an individual whose income was given to want to buy as cheap as possible in an exchange situation, for a country the advantage of an operation depended on “how cheaply goods are bought” but also, and especially on “how buying capacity may be created” (p. 65). The key distinction that he was making was assuming that an individual’s revenue at a given point in time tended to be fixed but that this was not the case as far as national revenue was concerned. “So the buying problem of a country depends not only on what is bought but also on what is produced, in order that it may purchase”

(p. 66). He also made a distinction between what he called “national gain” and “individual profit” claiming the profit of the capitalist is “a superficial thing” (p. 20). This distinction is important to justify protection, since under a free trade system, if profit does not exist, production will cease, yet there may be national profit from the activity (p. 18).

In his theoretical exposition, Manoilescu attempted to show that a country whose comparative advantage was in lower productivity agriculture could lose from such specialisation and exchange, if the intrinsic superiority of industry (in terms of labour productivity) over agriculture exceeded the country’s comparative (international) superiority with respect to agriculture (p. 106). Effectively, what he was arguing was that deploying labour in this way would mean that the country would end up being able to consume less industrial goods (through international trade) than if it had made them itself. Accordingly, his scientific basis for protection was the selection of those sectors whose intrinsic productivity exceeded the average productivity of labour in a country. In effect, given the empirical evidence, he claimed that this meant industrialisation was necessary for agricultural countries to increase their buying power.

He acknowledged that national strategies to increase productivity of resources could be a zero sum game on the international stage, the reason being that the most productive sectors are few and so many countries pursuing such a strategy could, possibly, lead to international antagonisms. Unsurprisingly therefore, he rejected out of hand the natural harmony view of the free traders. Pertinently, he pointed out that if free trade conclusions were true, then the problems of international co-operation would not exist. For him, “Economic cooperation of the world of free trade is an empty word covering exploitation” (p. 213). That did not mean that he was predicting that a world where countries attended to their own national interests would be inherently dystopian, simply that it was better to be honest and to acknowledge that in such a world, co-operation would be possible but difficult. His fundamental thesis was that if countries wish to get richer (and increase their buying power), they should apply their resources to the most productive sectors and not be deterred by their lower productivity in those sectors relative to the international competition (p. 140). As he saw it

(though it is not totally supported by his analysis), the focus of policy makers should be on the features of *their own economy* (my emphasis), such as the relative productivity of different sectors, not on the productivity of sectors relative to those sectors abroad.²⁶ On a more optimistic note, he claimed that selective protection of the sort that he advocated for agricultural countries could even assist international trade, to the extent that it enriched previously poor countries and thus added to their purchasing power (p. 209). He also made a perceptive point (in the light of recent empirical work on the relationship between trade and economic prosperity) that foreign trade was the effect not the cause of national prosperity (p. 209). Besides, he was not advocating generalised protection, since for him such decisions on protection versus free trade needed to be decided case by case, on the basis of things that are “measurable” (p. 137).

Manoilescu’s challenge to the orthodox free trade doctrine had a big impact and almost immediately provoked a response from Ohlin (1931), Viner (1932, 1964 [1937]) and Haberler (1936). Of the three, Ohlin’s response is the most challenging and measured, Viner’s the most vituperative and Haberler’s the most accessible and comprehensive. Interestingly though, they all concede the validity of Manoilescu’s thesis, while trying to minimise its practical impact and empirical relevance. Ohlin (on the basis of his reinterpretation of Manoilescu’s work) concluded that there was a case for temporary protection of high wage industries, where the latter was due to the existence of non-competing groups of labour (Ohlin, 1931, p. 45). Viner made a similar point, claiming that when a country’s comparative advantage is not revealed in terms of price advantage, such that under free trade the country specialises in the wrong sector, then protection “will operate to reduce the diversion” (Viner, 1932, p. 125). But, in typical Viner fashion, he calls it “one grain of truth, which is embedded – but not displayed – in the author’s exhaustive argument. But it is a very tiny grain indeed” (p.125). Haberler, like the aforementioned authors, addresses the issue in terms of inter-sectoral wage differentials and the varying reasons why these

²⁶ Though this is what Manoilescu said, it is not totally accurate insofar as his theoretical analysis depends on the relationship between the relative productivity of sectors at home and the relative productivity of domestic sectors compared to their international counterparts.

can exist, justifying his detailed treatment on the basis of the widespread interest that Manoilescu's protectionist theory had aroused. (Haberler, 1936, p. 198). He cites Viner's grudging grain of truth but concurs with the latter that "Manoilescu does not reveal it but conceals it, for he is unaware of the numerous qualifications which limit his doctrine" (p. 198).

What Ohlin (1931) did was to reinterpret Manoilescu's analysis in terms of differential payments to factors of production, specifically different wages in different sectors. His point was that if resources are more productive in industry than in agriculture, then these resources must get paid more. He considers the most useful indicator of productivity to be "height of wages" as "the rate of interest does not vary much between industries in the same country" (Ohlin, 1931, p. 35). Ohlin works through Manoilescu's example and gives a qualified agreement that "if the comparative superiority in agriculture is less than the intrinsic superiority in manufacturing [abroad], then ... the latter has a full right to exist" (p. 32). But he adds to the analysis by insisting that what also matters is the intrinsic superiority of manufacturing at home, showing the conditions under which a country could gain from having its own manufactures and yet still be unable to compete freely with manufacturing imports, thus implicitly providing an economic justification for protection (see pp. 32-33). But, then Ohlin adds his coup de grace and asks why, if protection will effect such a productive transfer of resources from low productivity to high productivity sectors, can they not be effected without protection? Or "If a worker obtains a much higher wage in the Romanian coal industry than in most other Romanian industries, why do not those employed in the latter offer themselves to the coal industry at somewhat lower rates than the present one?" (p. 36). After posing this question as to why the forces of arbitrage should not work in the labour market, he proceeds to give logical explanations as to why seeming inter-sectoral differences in wages may not point to a failure of the law of one price.

Ohlin had earlier made passing reference to wage differences being due to the differences in the quality of labour. However, in his explicit reply to his own question, he mentions how nominal wages differences may not translate into real wage differences if the cost of living varies, as he claims it does between

rural environments (where agricultural production takes place) and urban environments (the presumed location for manufacturing). He also cites the preference that individuals may have for agricultural occupations, the implication being that while lack of mobility may reduce national income in terms of goods and services, maximum national income would not be desirable under those circumstances (p. 40).²⁷ The only explanation that he can give for why urban industrial workers might get more desirable well paid jobs than farm workers is because these two classes of labour are non-competing groups. This he attributes to genuine differences between long-established and new labour (an interesting forerunner to the turnover theory of efficiency wages) or the effect of trade unions and closed shops in the higher paid industrial employment (p.41). In this instance (where non-competing groups of labour exist), he acknowledges that protection can, under certain circumstances, reduce the losses that are a product of the existence of these groups and bring about a more efficient allocation of resources across sectors, similar to what they would have been if labour had been freely mobile (p. 44). Nonetheless, Ohlin still does not consider the example of “artificial” non-competing groups to be a sufficient argument for protection claiming that the more natural remedy would be to do away with the watertight labour compartment or to find some other mechanism to encourage mobility.²⁸

Viner, in his *ad hominem* critique, refers to Manoilescu’s empirical evidence (that productivity varied across sectors and was higher in industrial sectors than in agriculture) claiming that it was a “medley of statistical data of miscellaneous dates and various degrees of unreliability and irrelevance” (Viner, 1932, p. 122). He provides no justification for asserting that Manoilescu’s data were unreliable and irrelevant. While adopting Ohlin’s interpretation of Manoilescu’s work (that treats variations in productivity across sectors as variations in wages), he proceeds to ridicule what he perceives as the superficial use of wages and prices

²⁷ In an interesting qualification to the latter argument, Ohlin distinguishes between *ex ante* and *ex post* preferences, claiming that man is by nature a conservative animal which could act as a deterrent to rural urban mobility. However, if *ex post*, he adapts to (or prefers) urban life, then it would be inappropriate to give more weight to his psychological reactions before the change.

²⁸ Ohlin suggests a system of unemployment relief to encourage such mobility. This suggestion has usually been omitted from subsequent appraisals of Ohlin’s critique (see for example, Irwin, 1996 and Gomes, 2003).

as indicators of value and as appropriate weights to be given to different activities. To underline this point he mentions how artificial impediments, such as monopoly, could raise price and thus affect the interpretation of what sectors were productive or not (p. 123). Reasons that he gives for inter-sectoral wage differentials are: “equalizing differences” a phrase borrowed from Frank Taussig, where the ratio of wages in two sectors is assumed to be equal to the reciprocal of the attractiveness of the two occupations in terms of the irksomeness of the work and cost of living differences in the regions where the occupations are carried out. These reasons were already alluded to by Ohlin in his review. Unlike Ohlin, he does not explain wage differences on the basis of quality of labour differences, which Haberler attributed to Viner’s adherence of real cost theory, as opposed to the opportunity cost doctrine that Haberler espoused (Haberler, 1936, p. 196n). Viner also refers to non-competing groups in two instances: one where there is complete inter-sectoral immobility of labour and the other where labour is completely mobile. In the first instance, where there is no mobility between non-competing groups of labour, international trade will change the rewards to the different groups of labour but it will not affect the national gains from trade. The free trade case remains intact. This point had not been made by Ohlin, who assumed that such labour was mobile, albeit imperfectly. Finally, he conceded the case that if: (i) real wages are higher in one sector than another for whatever reason (he cites trade unions and custom); (ii) both occupations are equally attractive; and (iii) mobility between sectors does exist, then a free trade regime could result in a country allocating its resources inefficiently in the low wage sector (Viner, 1932, pp. 124-25).²⁹ However, he proceeded to minimize the likelihood of this happening arguing, on the contrary, that free trade would probably force those in the high wage sector to abandon their monopoly wage, thus removing the underlying distortion that rendered protection attractive as a policy. So, as far as Viner is concerned “finding an intellectually satisfactory economic defense of protection still awaits achievement” (p. 125) and was not furthered by Manoilescu’s work.

²⁹ It would only be inefficient if the ratio of wages between the two sectors results in the country specialising in the sector where it had a comparative disadvantage.

Haberler (1936), as an extension of his section on the impact of trade, when the labour market is divided into non-competing groups of labour, cited all the aforementioned (quality of labour, equalizing differences, non-competing groups with and without mobility) as reasons why differences in real wages may exist and persist between different groups of labour. Like Ohlin and Viner, he conceded that the only theoretically important exception to the free trade case was that of non-competing but inter-sectorally mobile labour. As he put it, this is because “the exchange ratio is not determined exclusively by the opportunity costs” (Haberler, 1936, p. 197). So, one could have a situation where the opportunity cost of the good exported exceeded its relative price, thus resulting in a loss from such production and exchange. But, since he believed that this had to be a consequence of high paid workers acting monopolistically, he therefore concluded that they were unlikely to persist with such behaviour in a free trade regime, as the consequence would be unemployment. Productivity differences across sectors had to be the product of a distortion, one which meant that protection, given the distortion, could be economically advantageous but, since free trade is presumed to nullify the distortion, the case for free trade was considered to be practically (if not theoretically) still intact.

Ex post, orthodox opinion is in agreement with Viner that Manoilescu’s thesis did not amount to much of a challenge to the free trade case. Most believe that it gave rise to the subsequently entitled theory of factor market distortions and suggested alternative policy remedies to correct for the distortions other than protection. For Irwin the broader consequence of the theory of domestic divergences was that “the case for free trade was delinked from the case for laissez-faire” (Irwin, 1996, p. 171). Gomes makes a similar point when talking of higher industrial wages being necessary to attract and retain skilled labour, an adequate supply of which may not be forthcoming because of a market failure. He dismisses protection as a solution, claiming that “the theory of domestic distortions provides no support for intervention in trade to remedy the situation – the optimal policy is a subsidy to labour training” (Gomes, 2003, p. 127). Likewise Maneschi (2008) claimed that it was only apparent years later (when the officially acceptable work on factor market imperfections was incorporated into general equilibrium modelling) that “Manoilescu had discovered the first

case of ... market distortions” but that a consequence of that literature was “it brought home to economists the important distinction between the policies of laissez-faire and free trade”, the cure for which were “first best policies such as subsidies or taxes” (Maneschi, 2008, p. 131).

What is noteworthy and seemingly not well known (judging from subsequent references to Manoilescu’s work) is that Manoilescu did not present his case as a situation of inter-industry wage differentials or an example of the failure of the law of one price to hold as far as labour was concerned. He never mentioned differences in wage rates between sectors. On the rare occasion when he does talk of wages he is more interested in its share of net production, and he cites US published figures in the second half of the nineteenth century to show that labour contributed more to net production than it received in wages (see Manoilescu, 1931, table I pp. 46-47). It was Ohlin (1931) who interpreted Manoilescu’s work in this way and it would appear that all subsequent economists accepted this interpretation. Manoilescu’s starting point for his theoretical analysis and policy recommendations was the evident existence of productivity differentials between sectors. He explicitly says “Without examining what are the factors which cause such ample variations in the productivity of national value, we merely wish to state that, from the point of view of productivity (either of capital or of human labour) the economic life of a country is essentially heterogeneous” (Manoilescu, 1931, pp. 28-29). This is why he discussed at some length what he meant by “more productive sectors” and the challenges of measuring them. He developed three proxies in order to measure and compare productivity of resources across sectors: (i) net production per worker or P/T , where P is net production and T is the number of workers; (ii) net production per unit of capital or P/C , where C is the unit of capital; and (iii) his geometric mean which is net production divided by the product of labour and capital employed ($\sqrt{P^2}/\sqrt{TC}$ or P/\sqrt{TC}). So it is clear that when Manoilescu was referring to productivity differences between sectors, he was not confining his argument to inter-sectoral differences in labour productivity only, or indeed to the case of different wages being paid to identical labour in different sectors of the economy. He justified using capital and labour (and not other resources) as the basis for his productivity

measurements on the grounds that labour and capital were common to all branches of production, unlike for example arable land (p. 21). His objective in using such measurements was “Given a number of workmen, and a ready accumulated capital within a certain limit of natural possibilities, to find the best employment for these workmen and this capital so as to obtain the maximum of net production” (p. 21). Indeed Ohlin took issue with Manoilescu’s different attempts to rank industries according to their productivity. He questioned why land was not included, what the exact meaning of a unit of capital was, and what was the basis for using a geometric mean of output of capital and labour? It was Ohlin who concluded that it was better to stick to the criterion used in “orthodox economics” that the industry that could pay the highest price for its productive factors is the most effective one (Ohlin, 1931, p. 35). From this he decided that the most useful indicator of productivity differences across industries was the height of wages, even though he accepted that it was misleading to the extent that other resources or profit differed between industries (p. 35). Certainly the statistics quoted most often by Manoilescu are labour productivity in different sectors and different countries at different points in time but that merely reflected data availability. Even in his theoretical analysis, his use of inter-sectoral and international differences in labour productivity is understandable, given that he was taking on Ricardo’s theory of free trade on its own terms. Wages however do not get a mention.

So one difference between Manoilescu and his critics was that he took it as given that different sectors of the economy were heterogeneous in terms of their productivity and he wanted to examine the implications of such empirical evidence, whereas they interpreted such productivity differences as differences in wages across sectors and wanted to interrogate how this could be the case. As Viner said, in his dismissal of Manoilescu’s thesis, it is necessary to know “the reasons why prices and wage rates are what they are” (Viner, 1932, p. 123). So Viner, possibly on the basis of Ohlin’s prior review, proceeded to assume that Manoilescu’s productivity differentials were revealed as inter-sectoral differences in wages, and he went on to question whether such apparent phenomena represented a violation of the law of one price (or wage) or not. To the extent that real wages differ for identical labour in different jobs of identical

desirability, it can only be attributed to monopoly labour power, since what else could it be? At least Ohlin provided some justification for narrowly interpreting Manoilescu's work in the way he did. As he says, "the industry which can pay the highest price for its productive factors is the most effective one" (Ohlin, 1931, p. 35). And he justifies his exclusive focus on the remuneration of labour since natural resources are "differently situated" which is analogous to a "difference in quality" while "differences in interest ... are relatively unimportant" (p. 37). Yet he is aware of his sleight of hand even as he justifies his exclusive focus on wages as evidenced when he said "it is differences in wages which above all should be analysed. The fact profits in certain industries are much greater than in others also deserves attention but will not be discussed here" (pp. 37-38).

This is an unfortunate omission and one that channeled subsequent work unnecessarily down the route of erroneously assuming that Manoilescu's challenge to free trade was based on inter-sectoral wage differentials. A discussion on why profits differ across sectors and why the law of one price does not appear to hold for productive capital might have given rise to a totally different debate. Certainly, it would have been possible to argue that one reason why profit differs across sectors is because of monopoly forces at work in some sectors and possibly too, if such monopoly was due to "legal privileges" the implication would be that it is desirable to break up such monopolies in order to get the desired allocation of capital across sectors. It could be argued that in this instance, free trade is a good thing since it leads to increased competition and reduces the monopoly power of certain firms. But, it may also have led to a debate on the nature of capitalist production and whether monopolies, oligopolies or heterogeneous firms are an inevitable product of competition in markets. The varied nature of production is such that it leads to varied barriers to entry in different sectors of the economy. These barriers may be more natural than contrived, being intrinsically tied up with the diverse nature of production in different sectors and the understandable strategies pursued by those in business to protect their profit (much of which may be in the nature of economic rent) by whatever stratagems form part of the acceptable cut and thrust of economic life. Removing such barriers that give rise to heterogeneous profit

may not even be feasible, especially if information on products, processes and internal organization is not readily accessible. Furthermore, it may not be desirable. Natural monopolies are a case in point, whereby larger firms are more cost productive. In such instances, legal measures to make the market more competitive would result in resources becoming less productive. All of this is of course speculative, but it does serve to highlight the empirical facts on which Manoilescu based his case, that there are economic activities that appear to be more productive than others. Therefore, to the extent that this is the case, governments should concern themselves with trying to encourage the expansion of the more productive sectors in the interests of enhancing national income. This may well involve protection in order to encourage more productive sectors to expand and, given the realities of capitalist production and the different constraints that governments face, protection may not be a second or third best solution, it may well be the first best. However, this debate on why some sectors appear to be more productive than others and its implications for government policy never happened. Instead, the response to an empirically based challenge to a core theory was to restate the phenomenon in terms that do not wholly explain its existence. Having set up a straw man (wage differentials) neoclassical economists then proceeded to rationalize the now restated problem by offering explanations that are either not verifiable empirically (utility differences across employments) or difficult to verify (quality of labour). The only limited concession to the challenge that markets may not be as competitive as the economics profession perceived they should be, was to allow for a very specific type of labour market distortion that readily suggested a number of solutions, of which trade interferences were very far down the hierarchy.

In this instance a whole gamut of strategies was used to protect core theory against empirical evidence that appeared to undermine it. The evidence was restated in a misleadingly narrow way, it was minimized by recourse to explanations based on unverifiable or difficult to verify concepts and the limited concession that was made (Viner's tiny grain of truth) was an easy concession since it did little to undermine the hegemonic status of free trade theory among neoclassical economists. Indeed, it gave rise subsequently to a seam of

theoretical work that proved very productive for its proponents, without in any way threatening the core.

3.4 The Infant Industry Exception to Free Trade

3.4.1 Infant industries: Integral to mercantalism and yet running within free Trade logic?

The idea of nurturing infant industries (II) using, among other measures, protection and maintaining that protection until such time as those industries have matured sufficiently to be able to deal with the forces of international competition has a long and strange lineage. Long, because it dates back to the mercantalist era and strange because, although the infant industry argument formed part of mercantalist economic theory (see Viner, 1964 [1937], pp. 71-72), it was also considered to be “not inconsistent with classical and modern theory” (Haberler, 1936, p. 280). This view was supported by Schumpeter when he asserted that Friedrich List (who theorised the infant industry basis for protection in the mid-nineteenth century) produced an argument that “developed into a free trade argument” (Schumpeter, 1994 [1954], p. 505). One reason why the position of Haberler and Schumpeter is not paradoxical but downright contradictory is because classical political economy, as developed by Adam Smith, set itself up in direct opposition to mercantalism. Admittedly, his depiction of the mercantile system was misleadingly narrow, to the extent that he represented it as an obsession with the balance of payments and bullionism. As pointed out by Perrotta, the founding fathers of mercantilism, such as Antonio Serra and Thomas Mun, favoured a positive balance of trade only to the extent that it promoted manufacturing. State intervention was considered necessary to develop domestic production, which was seen as central to wealth formation (Perrotta, 1991, p. 303). Likewise, as Irwin noted, British writers before Smith, such as Josiah Tucker, James Steuart and even Smith’s teacher, Frances Hutcheson, all accepted, with different degrees of qualification, the infant industry argument (Irwin, 1996, pp. 117-118). For Irwin, it was a sign of Smith’s intellectual independence that he opposed government interference. Moreover, despite his narrow depiction of the objectives of mercantilist policy, Smith did attack directly the infant industry basis for government intervention,

claiming that it was a matter of irrelevance whether the cause of a country's superiority over another in production was due to natural factors or factors that could be overcome, since all that mattered was the cost of buying the good versus the cost of making it. (Smith, 1999 [1776] p. 35).

This claim that the source of a country's advantage over another was of no consequence was strongly contested by the economist John Rae for whom it was "of the greatest consequence" since unlike the case of natural advantages, acquired advantages "can be transferred from one country to another" (Rae, 1964 [1834], pp. 71-72). However, it was John Stuart Mill who conferred respectability on the infant industry case for protection. In a famous passage, he acknowledged the influence of the otherwise forgotten Rae and made the case for a protecting duty when a country's competitive disadvantage was due to "skill and experience yet to acquire" (Mill, 2004 [1848]), p. 840.). According to Haberler, the infant industry argument was accepted in principle by many free trade economists after Mill gave it his approval, citing neoclassical heirs of Mill such as Marshall, Pigou and Taussig who all endorsed it (Haberler, 1936, p. 281). However, he also points out, while the aforementioned accepted the infant industry case as a genuine theoretical exception to the theory of comparative advantage, they all had reservations about its practicality (p. 284, footnote 8). Theoretical acceptability and practical reservations aside, the question remains, as to how a concept, that was central to mercantilist theory and its policy of State intervention, could also be compatible with the competing theoretical framework of classical political economy which, by and large, favoured laissez-faire and free trade. More substantially, the essence of Ricardo's theory of comparative advantage was that economic backwardness was not a reason not to engage in free trade, since all countries could gain from trade regardless of their level of economic development. If one accepts the logic of comparative advantage, then protection to develop fledgling industries means foregoing the gains from specialisation and trade. Of course, the real disconnect between Ricardo's theory of comparative advantage, its neoclassical offspring and the infant industry argument for deviating from free trade is that the former are static theories whereas the latter is a dynamic theory of development.

In the following sections I will review the work of the most influential theorists on infant industry protection. What these writers had in common was that all directly took issue with Adam Smith's theory as to the determinants of the wealth of nations and the policy of laissez-faire and free trade, which was his legacy as expressed by his followers. Of particular interest is their alternative theorising of the determinants of the wealth of nations and the interventionist policies that this supports. What is also worthy of notice is how mainstream economics, classical but especially neoclassical, responded to the infant industry theories. We will see a gamut of strategies to deal with this direct challenge to free trade theory. These ranged from extra-economic arguments against trade interference, acceptance of the theoretical case but failure to incorporate it into the mainstream of theory, resuscitation of the argument in a particularly partial way with the objective of showing its limited empirical importance, to complete misrepresentation of the essence of the infant industry case by influential economists.

3.4.2 Hamilton and his rejection of laissez-faire

In 1791, Alexander Hamilton, in his capacity as Secretary of the US Treasury, submitted to Congress his "*Report on Manufactures*." While this report was supposed to be a policy document, and his brief from Congress was to prepare a plan for the encouragement of manufactures, the document proved to be much richer insofar as it addressed why manufactures were necessary if a country was to develop economically and why, without State intervention, this was unlikely to happen expeditiously enough. Although he never mentioned Smith explicitly, it is generally acknowledged that he was familiar with the *Wealth of Nations* from the language of the report and its unattributed citations.³⁰

The first Smithian claim with which Hamilton took issue was the idea that "it can hardly ever be wise in a government to attempt to give direction to the industry of its citizens" (Hamilton, 1827 [1791], p. 10). He also questioned what

³⁰ Bourne (1894) compares passages from both books to back up the view that Hamilton had read the *Wealth of Nations* and was in effect, in much of his report, challenging the political economy of Smith. For Bourne, "political expediency" had to be the reason for not mentioning Smith by name, since "The citation of an English writer on Political Economy would have weakened rather than strengthened his case" (p. 329).

he claimed was a widespread view that “agriculture is the most beneficial and productive object of human industry” (p. 9). Given the interventionist and manufacturing-oriented thrust of the Report, it is unsurprising that he challenged the harmony of interests idea that justified laissez-faire and the notion that agriculture was more productive than manufacturing. While questioning the empirical basis to the claim that agriculture was the most productive branch of industry (p. 11), he enumerated different reasons to support his case that, on the contrary, manufacturing resulted in higher levels of output than would be the case in its absence. He used Smith’s idea of the division of labour against him, claiming that manufacturing offered greater scope for the division of labour than agriculture, and he enumerated the different productivity benefits that ensued from such specialisation. These included greater skill in the performance of tasks, less time lost transitioning between tasks, and more opportunity to apply machinery (p. 19). He asserted that manufacturing would add to overall employment by hiring more workers and extracting more labour out of them (p. 21). The basis for this claim was the implicit view that it was production that determined employment, that production was less variable in manufacturing than in agriculture as it was less weather constrained (p. 13), and that there was a ready source of untapped labour in the form of women, children, immigrants and the previously idle. He anticipated Ricardo’s notion of comparative advantage (in this instance at the level of the individual), claiming that another source of productivity gain was the enhanced scope that manufacturing afforded to better use the diversity of talents of individuals (p. 22). Tellingly, he alleged that human motivation was not predetermined and that effort and enterprise fluctuated in proportion to the stimuli that they received (p. 23). This was another advantage that a nation with manufacturing enterprises had over an agricultural nation since, in his view, the former offers much more stimuli than the latter due to the sheer variety of occupations and productions that exist in a manufacturing country. And, finally, he claimed that agriculture itself would gain from the existence of more local manufacturing, as it would replace capricious international demand and poor terms of trade (under which agricultural exporting countries such as the US laboured) with more stable domestic demand.

Having established why manufacturing was desirable from an economic point of view, he then had to address why, without government intervention and incentives, manufacturing might not develop or develop as early as was nationally beneficial. Here his reasons allied a certain view of human nature and behaviour with commercial and political realities. He spoke of “the strong influence of habit and the spirit of imitation; the fear of want of success in untried enterprises; the intrinsic difficulties” (p. 28). Moreover, there was the obstacle of knowing that there existed foreign competition that was better able to produce the good (p. 29) and an awareness that existing incumbents in the industry would respond to new sources of competition by trying to frustrate it (dumping in modern language), even if that meant temporary losses, and that they would be assisted in their attempts to maintain their commercial supremacy by their own governments (pp. 29-30).

Hamilton was well aware that there were costs associated with assisting new enterprises, even when there was no fiscal burden, because the policy adopted was to protect the domestic market with import duties. But he believed that higher short-run prices, consequent upon the adoption of protectionist policies, was a price worth paying, because prices would fall in the long run and domestic goods would be even cheaper than foreign imports. What is more, he did not perceive that domestic monopoly was a credible threat due to domestic competition (p. 43). He discussed different policies that could be used to assist fledgling industries and personally expressed a preference for direct subsidies, on the grounds that they were most efficacious in raising profit, they did not add to domestic prices and they did not discriminate against exports (pp. 51-53). However, with his characteristic realism, he could see the political difficulties that would accompany this form of government assistance, so he proposed import duties, the revenue from which should be used to subsidise production.

3.4.3 John Rae, the strangely neglected but intellectually consequential Scottish economist

Rae’s best known work is his book “*Statement of some New Principles on the Subject of Political Economy Exposing the Fallacies of Free trade and some other Doctrines Maintained in the Wealth of Nations.*” As the title reveals, this

book was intended as a critique of free trade and the political economy of Adam Smith, whose methodology and conclusions he contested. Of all the infant industry cases that were presented, Rae's was arguably the most academically influential through its impact on Mill, who picked up on the market failure aspect of Rae's case. Yet, as noted by Dimand (1998), historians of international trade have by and large ignored (or been unaware of) Rae. (Maneschi and Irwin are two exceptions). He cites studies by Viner (1964 [1937]), Chipman (1965-66) and Blaug (1978) on trade which all neglect Rae's work. Even those who have addressed the infant industry argument such as Meier (1995), Haberler (1936) and Kemp (1960), either fail to mention Rae or mention him in passing when citing Mill's statement of the case (Dimand, 1998, p. 178).³¹

For Rae, the subject of political economy was the cause of the wealth of nations, the appropriate method to unveil these causes was induction and he believed that the possibility existed to uncover the one cause (among many) that was sufficient to ensure the advancement of a nation's wealth (Hamouda, 1998, p. 59). His methodological challenge to Smith was that his "speculations" were not inductively informed and that, as a consequence, he confused the causes of prosperity with the effects, since for Rae, the division of labour and free trade were outcomes not causes of economic development (p. 59). The theoretical error that Rae claimed Smith committed was due partly to the methodologically individualist underpinnings of his theoretical approach. "The axiom which he [Smith] brings forward, that the capital of society is the same with that of all individuals who compose it, being granted, it follows that to increase the capitals of all the individuals in a society is to increase the general capital of society" (Rae, 1964 [1834], p. 9). Since Smith assumes that "every man is the best judge of his own business and of the modes by which his own capital can

³¹ Rae's contribution to economic thought and his subsequent neglect is not confined to the case for protecting infant industries. He was also a pioneer in the area of capital theory whose contribution was acknowledged by Bohm-Bawerk (1959 [1884]) and Fisher (1930). Moreover, he is hailed by American institutionalists as a founding father because of his treatment of luxury expenditure (Mitchell, 1924). According to Brewer, there are obvious parallels between Rae's ideas and those forwarded by Schumpeter as to the sources of economic development (Brewer, 1998, p. 137). Meanwhile, Schumpeter paid tribute to Rae's originality, while conceding that it had not brought him either contemporary or posthumous success (Schumpeter, 1994 [1954], p. 468). The contemporary lack of awareness of Rae is all the odder given the esteem in which he was held by such influential figures in the evolution of economic ideas, something that an edited book dedicated to his work by Hamouda, Lee and Mair (1998) attempted to rectify.

be augmented, so to prevent him from adopting these modes is to obstruct him ... and in so far as his capital is a part of the general capital of society, to check the increase of that general capital” (p. 9).

While Rae did not assert that capital accumulation was the only way that an individual enriched himself (given that savings depended on earning power and the latter was determined by knowledge, skill, dexterity and capacities (p. 11)), he did draw a distinction between the process by which an individual and a country acquired wealth. In many instances, for an individual, personal enrichment can be a zero sum game, insofar as one person’s gain may be another’s loss. By contrast, nations can only get rich by producing a wealth that did not previously exist. “The two processes differ in this, that the one is an acquisition, the other a creation” (p. 12). Central to Rae’s theory of national economic development was the notion of invention, which generally involved qualitatively different methods of production than had previously been employed. He bolstered this claim that physical capital was not the essential determinant of a country’s economic development by empirical reference to natural and man-made calamities (fire of London, wars, revolutions) which, despite the destruction of capital that these caused, did not arrest development (p. 30). For him this revealed that “while the principles and elements, through and from which they sprang, are not consumed along with them, we see them quickly reproduced” (pp. 30-31). According to Brewer, this made Rae the first economist to see technical change as the main source of continuing economic growth and, since he saw no limit to the inventive faculty, the first to foresee an unlimited potential for growth (Brewer, 1998, p. 129).

For Rae, Smith’s methodological individualism and his theory of wealth creation led to the “doctrine of complete inaction on the part of the legislator” (Rae, 1834, p. 7). By contrast, Rae allied his empirical claim that the wealthiest nations were those engaged in manufacturing (p. 7) with his theoretical assertion that “invention is an essential element in the process of the increase in national wealth” (p. 15) to make the case for policy activism on the part of the legislator. Arguably, he saw the legislator as not only having the power to act for the community but also having a moral duty to do so. Rae’s justification for

the protection of infant industries rested on his broad interpretation of invention. For him, invention was not just the progress of science and arts but also the adaptation of arts already practised in another country (pp. 15-16). This was because such adaptation always involved learning since circumstances were never the same in any two countries and so consequently importing techniques from elsewhere inevitably involved more than simply copying (p. 46). However, in order to justify policy activism, he (like Hamilton) had to show why laissez-faire was insufficient. First, he stressed the obstacles that had to be overcome and the learning involved in starting a new enterprise (pp. 46-48), and then he had to prove that individuals would be unlikely to do so if left to their own devices. Effectively what Rae described was a case of market failure where individual and social interests do not coincide. He even illustrated the nature of the market failure, saying that while new entrants into an industry had to incur great costs, their potential success would be undermined by “projectors” who by “bribing his workmen with higher wages ... succeed in depriving him of the profits he might otherwise have drawn from his extraordinary outlay of labour and capital” (p. 52). For this reason “in all ordinary cases, a due regard to their own interests cannot be a sufficient motive to prompt individuals to such undertakings” (p. 52). He admitted that it could happen through miscalculation on the part of an individual investor but did not feel that it was either just or judicious to await such a doubtful occurrence. As far as he was concerned, if the benefits of a new activity are enjoyed by the whole community then it is only right that the community (and not an unfortunate individual) bears the cost of its introduction (p. 53).

Rae was aware of the short-run costs attendant on nurturing infant industries. But he asserted that notwithstanding such costs, legislative interference was justified if eventually the industry became competitive, in the sense of being able to produce at lower cost than international competition “and it is to effect this desirable result that we are going to undertake the project” (p. 59). This is why he took such issue with Smith’s refusal to distinguish between the situations of natural advantage and acquired advantage, since for Rae, it was obvious that while no amount of legislative effort would be sufficient to overcome natural advantages this was not the case for acquired advantages (p.

71). The essential difference was that the while natural advantages could never be transferred from one country to another; acquired advantages could be so transferred, since acquired advantages had to do with knowledge (p. 72).

Rae however was not a naïve protectionist saying that while the legislator should act, he should do so cautiously and be guided by the evolution of events. A necessary condition for legislative interference is the reasoned view that eventually the activity being promoted will be competitive (p. 367). He even acknowledged that legislative interference might sometimes fail (to promote a competitive industry successfully) but, as with individual failures, the gravest error was “to sit down therefore in resolute inactivity” (p. 69). Protection was only one of a number of measures by which policy could be brought to bear on private activity, the others being premiums for successful imitation of foreign articles and bounties on home production. The advantage of premiums was that it was a measure that could precede protection in testing how practicable it was to try to establish an activity (p. 368). In defending the desirability of manufacturing, he cited two of the arguments forwarded by Hamilton, one, on the beneficial impact of manufacturing on the agricultural sector and the other, on how it enhanced the inventiveness and ingenuity of society’s members.

While Rae’s case for supporting infant industries was of a sort that neoclassical economists would find most acceptable (difference between private and social costs and benefits), his quotation of Hamilton revealed a view of human nature that would put him strictly at odds with rational homo economicus of neoclassical lore.

3.4.4 The well known but much reviled Friedrich List

According to Shafaeddin (2000), while the infant industry argument for protection is based mainly on List’s writing, he alleges that List’s ideas have not been reviewed adequately in the economic literature published in English, and he cites Blaug’s history of economics and his failure to mention List as testament to this generalised neglect. Gomes attributes the initial neglect of List in the English-speaking tradition to Britain being the home of classical political economy and the free trade doctrine that List was challenging. He also claims

that Mill's endorsement of the infant industry argument served to redeem partially List's reputation while obscuring his central message (Gomes, 2003, pp. 86-87). But it would seem that antipathy to List's writing was not confined to English writers in the classical political economy period. For the Austrian neoclassical, Haberler, there was some merit to List's exposition insofar as it was not to be dismissed out of hand but he accused List of "great exaggeration and gross Protectionist fallacies" in addition to "bitter and quite superfluous attacks upon the classical economists" (Haberler, 1936, p. 280). Meanwhile, the American neoclassical free trade theorist and economic historian, Viner, denigrated List in his characteristically dismissive way, saying that his "ideas were unworthy of notice; he had departed from the true principle of economics" (cited in Gomes, 2003, p. 86). Swedish Ohlin was, as ever, more temperate in his pronouncements while revealing once again his tendency towards reinterpretation, when he asserted that the infant industry argument should be called instead the infant country argument and that what really mattered and what List had in mind was how protection impacted on the quality of labour (Ohlin, 1935, p. 321). Arguably, Irwin provides the most revealing explanation for the lack of regard that economists have for the otherwise influential List, saying that they [economists] were suspicious of his historical analysis and sceptical that it could provide an analysis of the problems faced by infant industries or useful guidance as to when protection was advisable (Irwin, 1996, pp. 127-128). Why? Because the implications of economic theory are not historically dependent and this is also the case with comparative advantage. Furthermore, "List did nothing to advance the theory underlying the infant industry case because this was not his purpose" (p. 128). So here we have an honest though highly questionable explanation of List's neglect that has to do with his rejecting the universalising claims of the emerging discipline of economics, by claiming that context matters, and the straying of his analysis beyond the narrow confines of the market when trying to explain the causal determinants of economic phenomena - all cardinal sins in the eyes of the economic discipline with its pretension to scientific respectability.

Both Hamilton and Rae focused on the nation-state and the role of government policy in advancing the wealth of the nation. The same is true of List, and his

first theoretical criticism of Smith's theory was its focus, which List designated "cosmopolitical" to be contrasted with his own focus of "political or national economy" (List, 2005b [1841], p. 7). For List national economy arose with the idea of nations, which he saw as being the medium between individuals and mankind, possessing, among other things, common government, laws, institutions, interests and history (List [1827], p. 162). Moreover, the object of political economy was more than just wealth but also power because, to his mind, the two were interlinked as national wealth was increased and secured by national power. So the remit of any study of national economy had to involve principles that were not only economical but also political (p. 162). Given the distinction that List drew between the individual and the nation, it is unsurprising that he, like Hamilton and Rae, argued for an activist State based on such a distinction between "private and national economy" (List, 2005b [1841], p. 57).

List's method of investigation was historical and inductive as well as axiomatic as evidenced by the first part of his famous 1841 book *National System of Political Economy* looking at the history of successful states and attempting to explain the causal factors behind such success (List, 2005a [1841]). Like Rae, he criticised Smith's methodology and accused him of confounding "effects with causes" (List, 2005b [1841], p. 14) and "the principles of private economy with those of national economy" (p. 57). For List, the individual is more short-term in his orientation than the legislator and the pursuit of private interests can be socially destructive. That is the reason why governments everywhere impose restrictions on the autonomy of individuals, of which commercial restrictions are simply one of many taken with the interests of the collective in mind. The examples that List gave of such restrictions were commonsensical and designed to be sufficient evidence of the dichotomy between individual and collective well-being and how both could be secured (pp. 59-64). The errors of Smith and his followers, List attributed to their flawed theory (of exchange values) which, partially derived from their methodological failures that took no account of history and statistics. If the teachings of classical political economy were valid and the correct policy was one of non-interference by the State, then, according to List "savage nations ought to be the most productive and wealthy of the earth,

for nowhere is the individual left more to himself than in the savage state, nowhere is the action of the power of the State less perceptible” (p. 67).

List’s theoretical innovation was his concept of productive power, which he juxtaposed with Smith and his followers’ idea of exchange value. For List, the power to produce wealth was more important than wealth itself, since “it insures not only the possession and the increase of what has been gained, but also the replacement of what has been lost” (p. 22). Clearly, List saw productive power as being non-depreciable by contrast with wealth, which can be diminished and lost. According to Levi-Faurer, List believed that productive power consisted of three types of capital, natural (resources of nature), material (machines and utensils) and mental and of these, mental capital was the most important in the creation of wealth (Levi-Faurer, 1997, p. 157). Therefore, economic policy that aimed to develop mental capital would, all other things being equal, be more successful than economic policy aimed at the development of natural or material capital (p. 158). Smith’s mistake and those of his successors was to emphasise bodily labour as the sole productive power and their failure to assign a productive power to mental labour, in particular if it was of a form that did not earn exchange value in the market (List, 2005b [1841], pp. 32-33). For List, such a theory was unscientific as it failed to unearth the deeper causes of productive labour since “history teaches us that whole nations have, in spite of the exertions and thrift of their citizens, fallen into poverty and misery” (p. 25). Smith’s doctrine is indicted on the grounds of its “materialism, individualism and particularism” (p. 27).

When discussing the determinants of mental capital, List moves beyond the narrow remit of the economic, which was doubtless the reason for his dismissal by subsequent generations of economists. He sees the mental capital of a nation as being determined by the broader socio-political and institutional context; that is to say by the rules and regulations of society, by the state of its sciences and arts, as well as by its social norms and moral culture (pp. 29-30). This knowledge or mental capital is built up over generations and is, in his view, specific to nations, which are productive insofar as they can appropriate the attainments of previous generations and add to them. The role of the State, far

from being unimportant is, for List, indispensable as the ultimate promoter and facilitator of the underlying conditions of a nation's productive power, since the latter is presumed to be culturally grounded and nationally bounded.

Like both Hamilton and Rae, List viewed manufacturing as being essential to a nation's economic development and the expansion of its productive powers. To some extent, the desirability of manufacturing derived partly from its association with urban living, by contrast with agricultural and rural living. For List, urban living was more conducive to the development of mental capital than rural living. This he attributed to the stimuli and friction of living in close contact with others as opposed to the isolation of the rural dweller. "Friction produces sparks of the mind ... Mental friction, however only exists where people live closely together where there is a large interchange both of goods and ideas" (p. 104). By contrast the agricultural population "lives dispersed" and "The agriculturalist has to deal less with his fellow-men than with inanimate nature" the upshot of which is "contentment with little, patience, resignation, but also negligence and mental laziness" (pp. 96-97). List also perceived that there was a symbiotic relationship between the production of manufactures and arts and the sciences. "Manufactures are at once the offspring, and at the same time the supporters and nurses, of science and the arts" (p. 100). He reiterates Hamilton's point that a nation with manufactures can make better use of the variety of talents of its citizens, thus adding to its productive power. However, his essential point has to do with human behaviour which he sees as being culturally determined by the activities that people pursue, the education that they received and the environment in which they find themselves. This is why he goes to such pains to emphasise that an urban society that produces manufactures and engages in commerce will not only be more productive but also more educated, cultured, less superstitious and more tolerant than its agricultural counterpart (pp. 108-109). His view of human behaviour is that it is fundamentally determined by the constraints of the situation in which we find ourselves and sustained by habit (p. 114). For this reason a country that makes the transition from agriculture to manufacturing and commerce develops in its citizens' different values and qualitatively different modes of behaviour. This is an important feature of his work and worth emphasising because later

neoclassical interpretations of the infant industry case for protection rest on a very different view of human behaviour, where preferences are given (and separate from constraints) and the rational agent is always optimising regardless of the context in which he/she finds him/herself.

State assistance is recommended for a nation seeking to develop its manufacturing especially if there already exists (as was the case when List was writing) a superior manufacturing power. List enumerated the difficulties attendant on setting up new enterprises, from capital outlays to lack of skill, experience and knowledge (pp. 201-211). He especially emphasised the time element involved in developing expertise in certain activities and pointed to different types of social institutions whose principal function was to ensure that knowledge was maintained and developed over generations. However, unlike Rae, his rationale for State assistance could not be interpreted as being due to market failure but, rather due to lack of capacity. This is an important distinction, since the market failure argument suggests market correction measures, whereas if a country lacks the capacity to compete successfully, all the market incentives in the world will not remedy this lacuna. That is why the infant analogy is so pertinent and why protection is needed until such time as productive powers have been developed. For List, exposing an immature industry to the rigours of unbridled competition with a superior opposition was akin to pitting a child against an adult in a wrestling match. The outcome of such a contest is almost always a foregone conclusion (p. 216). But, as pointed out very effectively by Chang, while one can be sure that without protection (or some form of State nurturing) the products that a catching up country can successfully produce will be extremely circumscribed, that does not imply that protection will always be successful (Chang, 2007, pp. 66-67). What State assistance does is replace certain failure if it is absent with improved odds of future success if it is given.

As far as the modalities of nurturing nascent industry are concerned, List differed from Hamilton and Rae in that he focused almost exclusively on import protection as the principal means of establishing manufacturing power in a nation (List, 2005b [1841], pp. 226-227). Also, not all nations were considered

suitable candidates for the nurturing of manufactures. Countries had to be at a certain stage in their economic development and possess certain cultural, demographic and geographic pre-requisites. Effectively List excluded tropical countries (for whom he felt free trade was the best commercial policy) and those with small populations and limited territory. Since the development of manufacturing capacity was the objective of commercial policy, neither raw materials nor capital equipment should be protected (p. 233). Not all manufactures were deemed suitable for protection; suitable candidates were those that mobilised a lot of a country's productive powers. These included many articles of general consumption but excluded luxury goods. Another reason why the latter goods were considered unsuitable was because List assumed that their production required technical skills that were beyond a nation embarking on industrialisation (p. 232). His system recommended increasing duties as productive power was being developed but eventually reducing and removing protection. However, he was at pains to point out that the trajectory of protection could not be determined theoretically and could only be decided on the basis of a country's and a sector's relative condition (p. 231). In this vein, he cautioned against both premature liberalisation, which he deemed to be wasteful of resources, and excessive protection (p. 229).

Like all the infant industry theorists he was aware that there was a short-run cost to protection (higher prices) but, like Hamilton and Rae, he deemed such a policy worthwhile if eventually the country succeeded in developing its productive power sufficiently so that it could produce the good more cheaply than the imported substitute (p. 35).

3.4.5 Similarities and differences between the three theories of infant industry protection

All three writers critiqued what they considered to be the theoretical underpinnings of Adam Smith's *Wealth of Nations* and the generally accepted policy conclusions of his economic model. Their approaches differed insofar as Hamilton never explicitly mentioned Smith or his work, while List aimed his arrows also at J. B. Say and what he dubbed The School, namely classical political economy in the Smithian tradition. All were focused on the nation-state

and all called for temporary state protection to develop manufacturing activity in countries where it was undeveloped and in the context of an international environment with superior competition. Both Rae and List emphasised the need to be selective in the manufactures chosen for protection and all realised that protection imposed costs on society. However, all presumed that such costs would be short-run in nature and that the policy of protection would be justified if eventually it could be disposed of because of the superior productivity of the enterprises once protected. Both Rae and List were familiar with the work of Hamilton but there is no evidence that they knew of each other's work.

What Hamilton does very expertly is make the case for the superior productivity of manufacturing compared to agriculture. This is a theme taken up by List who repeated some of Hamilton's arguments but also enlarged upon and added to them greatly. While Hamilton spoke of the "busy nature of man" that expanded in response to "new scenes", List went much further, developing on the notion that workers in a manufacturing and urban environment are qualitatively different to agricultural workers. For List, preferences and behaviour are culturally determined by socio-political context and by the activities that workers engage in, while social mores and habit play an important role in sustaining behavioural patterns. This is a very different perspective on human behaviour to the (subsequent) neoclassical one, where preferences are treated as exogenous and behaviour is presumed to be always of an optimising variety regardless of social context. It is also the part of the infant industry tradition that neoclassical theory has never acknowledged.

Where Rae and List overlap is in their belief that the most important determinant of a nation's prosperity is its mental capital. For Rae, the well-spring of national wealth was invention which he saw as an act of human creation. List, in his attack on Smith's materialism, was at pains to emphasise that what mattered was less the actions of individuals than the spirit that animated them and the social order that rendered their disparate energies fruitful. Rae applied his concept of creativity and invention to justify copying and adapting foreign production in a domestic setting (with State assistance), while for List, the State's role was indispensable in the development of

knowledge and skills and in regulating them to ensure sufficient cooperation for a common purpose. Both cited historical examples of natural and man-made events that resulted in the wholesale destruction of physical and natural capital without fundamentally undermining the prosperity of the country that had endured such calamities. This served as empirical evidence for their respective theses, which (although expressed differently) fundamentally amounted to the same claim; that mental capital is the most important determinant of national prosperity.

All writers stressed the difficulties and challenges inherent in setting up a new enterprise, especially in the face of superior foreign competition. However, Rae's exposition of differences between private and public costs and benefits is the sort of market failure rationale for state intervention that neoclassical theorists can most readily accept. Rae did cite Hamilton on how diverse production stimulated human energy and creativity but he did not elaborate much on this justification for State intervention. List's rationalisation of State intervention was based on the need for the State to foster certain activities for behavioural and cultural reasons. His emphasis on productive power (or capacity) and its socio-political determinants is an argument for infant industry protection that is far removed from any possible individualistic interpretation so beloved of neoclassical theory.

All discussed the modalities of State assistance and fundamentally favoured protection (for a variety of motives) but List gave the most elaborate exposition of how and where protection should be applied and the principles underlying its trajectory.

3.4.6 Infant industry in classical political economy and its neoclassical offspring

According to both Irwin and Maneschi, the infant industry argument only gained formal acceptance in classical trade theory when it was endorsed by John Stuart Mill in his first edition of *Principles of Political Economy* published in 1848 (see Irwin, p. 128 and Maneschi, 1998, pp. 120). In a much cited passage, the infant industry justification for protection made by Mill is similar to that of

Rae (whom Mill had read) with its important proviso that the industry being assisted was at a disadvantage simply due to “skill and experience yet to acquire” (Mill, 2004 [1848], p. 840). According to Irwin, Mill came to recant his views that import protection was the best way to promote infant industries, despite his belief that such industries could exist and that they in principle constituted a genuine exception to the free trade case. His disillusion with the infant industry argument in practice was that such protection was applied in too crude a fashion (Irwin, 1996, p. 129). But Irwin himself admits that Mill never incorporated any such recantation into subsequent editions of *Principles*.

Economists who came after Mill had mixed views about the desirability of protection to promote nascent industry. John E. Cairnes pointed to the limitations and restrictions with which Mill hedged his case but still claimed that “with or without such limitations” his position on the topic was untenable (cited in Irwin, 1996, p. 130). J. S. Nicholson doubted the feasibility of temporary protection because of vested interests (Nicholson, 1901, Vol III, p. 364). By contrast, Henry Sidgwick not only defended Mill’s version of the infant industry basis for protection (claiming that it represented the most important exception to free trade), he elaborated by showing how a manufacturing activity could be of benefit to a community but that, without protection, it would not sufficiently compensate the early private undertakers the costs they would have to shoulder in the early period of production (Sidgwick, 1901, pp. 488-490). In his elaboration of the private disadvantages of being an early entrant into a new industry, he cited, among other things, the cost of skilled labour and the strong probability of dumping (a word not used by him) by incumbents to stop the new upstart. These were not new insights, as they had been raised by Hamilton and Rae, respectively, but given that Sidgwick did not mention either of them, it may be that his familiarity with the infant industry case for protection was confined to Mill’s exposition³² The interesting aspect of Sidgwick’s contribution (in the light of the reservations expressed by some of his contemporaries) is that while he acknowledged the

³²Rather strangely, Irwin claims that Sidgwick did not elaborate on what he called the externality basis for protection (Irwin, 1996, p. 131). This possibly may have been the case in the first edition of his book, which was published in 1887 but it was not the case in the third edition published in 1901.

dangers of prolonged and/or inappropriate protection, he was at pains to stress that those were political arguments against the policy and therefore not belonging within the realm of economic theory (p. 491).

This position of claiming that the infant industry case represented a theoretically acceptable exception to the logic of free trade but that protectionism on such a basis was fraught with practical danger appears to have been the position of early neoclassical economists, such as Alfred Marshall and Frank Taussig. The ambiguous views of Marshall on the topic are cited in various footnotes by Haberler (1936, p. 281, pp. 284-85). For Irwin, the support of Marshall and Taussig gave the infant industry argument another lease of life and allowed it to escape careful scrutiny (Irwin, 1996, p. 134). He also asserts that for the first half of the twentieth century, it was the universally acknowledged theoretical exception to free trade, despite the continued scepticism among economists about its operation in practice (p. 135). Theoretically, the only advance on Mill's version of the infant industry argument by the generation succeeding him was considered to be that forwarded by Charles Bastable. Whereas the Mill test of the acceptability of protection was the eventual survival of the industry without protection, Bastable held that survival in itself was an insufficient condition to justify protection. Rather he argued that the issue was whether "the certain and immediate loss resulting from protection be outweighed by the future gains from the new industry" (Bastable, 1903, p. 140). To the extent that the infant industry case was considered a genuine exception to the theory of free trade, it was the Mill-Bastable version of the story that was generally acknowledged (see Kemp, 1960).³³

There were a lot of theoretical innovations within neoclassical trade theory from the 1930s to the late 1960s. These involved incorporating neoclassical production theory into the comparative advantage story of the causes and effects of trade, as well as the development of international trade theory as part of the general equilibrium model of the (cashless) economy. A feature of all this

³³ For Maneschi, Rae came very close to formulating the Bastable test. He cites two different passages from Rae to show that he had an appreciation of the inter-temporal issues at stake when trying to determine the benefits or otherwise of nurturing a nascent industry (see Maneschi, 1998, p. 190).

theorising was that it was static in nature. In a prescient article published in 1929, John Williams took issue with what he called English classical theory of international trade, claiming that it was based on premises sufficiently inaccurate as to raise questions of the soundness of the theory and its useful application to the trade of the world (Williams, 1929, p. 196). Particularly, he indicted the theory for its static nature; that is to say, for assuming as fixed the very things which should be the object of study. As he said:

the relation of international trade to the development of new resources and productive forces is a more significant part of the explanation of the present states of incomes, prices and well-being, than is the cross section value analysis of the classical economists, with its assumption of given quantum of productive factors, already existent and employed (p. 196).

The infant industry theory of protection was about the development of a country's productive powers. There was a realisation that developing a country's productive power was complex (involving a range of socio-political determinants), that it was costly and that it took time. In other words, the infant industry argument can only be understood within a dynamic model of economic change. Orthodox, neoclassical trade theory could not have been in a position to incorporate infant industry theorising into its models because it was essentially static in nature. However, given that infant industry had been rendered respectable by Mill, neither could it be dismissed out of hand. So the collective response of the profession (either consciously or otherwise) was to accept that it was a genuine exception (when pushed) but effectively to ignore it and its implications for trade policy. Silence was more powerful than direct refutation in this case.

While Haberler (1936) did explicitly mention the "external economy" rationale for protection, the idea that infancy in itself did not justify protection and that it could only be rationalised (within a neoclassical framework) on the basis of a specific type of market imperfection was first elaborated by James Meade. Meade unequivocally declared that "Infancy ... provides no argument for even temporary State support" (Meade, 1955, p. 256). The rationale was simple, if an activity is presumed to be ultimately profitable, then short-run costs associated

with infancy would not be enough to dissuade the self-interested, all seeing, private producer (who always acts in profit maximising way) from engaging in it. The omniscient decision maker of neo-classical production theory will desist from engaging in a socially productive activity only if it is not sufficiently privately profitable. The State should intervene if it can be ascertained that what is socially beneficial is privately unprofitable because of some kind of “market imperfection”. The nature of the market imperfection needs to be identified, what Irwin called “putting economic structure on the argument” (Irwin, 1996, p. 135). The only acceptable imperfections according to Meade were large indivisible factors of production (giving rise to increasing returns to scale) or atmosphere creating external economies, where the learning of infants impacts on the knowledge of other infants (Meade, 1955, p. 256).

Others, following in the lead of Meade, who put “economic structure on the argument” were Kemp (1960) and Baldwin (1969). Kemp asserted that Mill and Bastable (whose version of the infant industry “dogma” he was using) did not spell out in sufficient detail the nature of the learning process. For Kemp, the infant industry argument was about a dynamic learning process. The firms, he contended had to have static increasing costs over output, since decreasing costs would lead to monopoly and that would be sufficient inducement to enter a sector without State assistance or protection. But, increasing static costs notwithstanding, the learning economies had to be external in nature (in the sense of firms only learning from the experience of other firms), since if firms can learn from their own internal experience, that would constitute a barrier to entry, resulting in above normal profits and hence a sufficiently healthy inducement to attract early pioneers into the sector. By contrast, learning only from the experience of other firms means no barriers to entry in the industry, putting new firms on the same cost footing as pioneers and all the gains from such learning being passed on to the consumer in the form of lower prices. In this instance, protection is a sine qua non of the establishment of the industry. The upshot of Kemp’s analysis was to show that the nature of the market imperfection that justified infant industry protection was limited (See Kemp, 1960, pp. 65-67).

Baldwin (1969) wrote with the express purpose of showing that economists had too readily accepted the arguments for infant industry protection. His work on this topic has received much praise as the “classic article” that finally exposed how limited is the case for infant industry protection. Baldwin focused on the nature of the market imperfection that rendered it unprofitable for firms to enter a sector without protection. If the issue is the acquisition of knowledge of how best to produce the product and if this knowledge is not appropriable by the firm, then, according to Baldwin, the industry will not be established. However, he disputes that protection will make a difference since, in his world view, as long as there are costs that the firm must invest in learning, no firm will have an incentive to do so if new entrants can copy them at lower cost than that which the firm had to invest. Protection will merely serve to make production privately profitable without inducing any firm investment in learning. Alternatively, if the costs of learning by the pioneers are less than the cost of copying by later entrants, there is no need for protection as early entrants will enjoy a natural barrier to entry that will result in above normal profits for a while and make protection unnecessary. Baldwin also examined the case where the skill was embodied in labour, which must be trained but can then be poached by later entrants to the sector. For him, the solution to this “market imperfection” was to make workers pay for their own training, so that there is no loss to the firm from un-recouped training costs. For Baldwin, the infant industry argument for protection was only worthy of its reputation as the major exception to the free trade case if a clear analytical case could be made, based on well-known and generally accepted empirical relationships unique to infant industries. He contended that such a case could not be made (Baldwin, 1969, p. 303).

What clearly occurred, when neoclassical writers stopped accepting and ignoring the infant industry case for protection and engaged with it (essentially for the first time) was that they re-interpreted it in a partial way. The infant industry case became a particular kind of market imperfection. So when neoclassical man was placed in this imperfect market environment, protection did not resolve the imperfection by allowing for the development of a nation’s productive powers. This is unsurprising, since the assumptions central to neoclassical production theory are the omniscient agent who always makes the

best possible decisions at any point in time regarding organisation and production. Knowledge and capacity may come with practice and investment in learning but neoclassical man knows in advance the potential return from such investment. Such a view of human nature and behaviour and the development of capacities could not be further from the vision of Hamilton, List and even Rae. For Hamilton, man's nature could be roused rendering him/her more productive and adding to the stock of effort. This was also a perspective that Rae must have endorsed, given that he quoted Hamilton on how energy and the spirit of enterprise were a **variable** product of the variety of occupations to be found in society. List was even more radical because for him preferences, behaviour and, arguably, human nature were self-evidently products of the wider social context in which persons found themselves. What we do determines what we become and what we value. Even a more modern Institutional/Evolutionary perspective on firm behaviour would better capture how firms make decisions by rationalising why organisational cultures can differ across firms, including those in the same industry. Omniscient optimisation with regard to product, process and firm organisation would be replaced with routines that firms develop to cope with profound uncertainty. This might better explain the complexity associated with learning and why, given the challenges new entrants to an industry face, protection is needed during the vital early stages of the establishment of a new industry. Un-nuanced, asocial, all-seeing and super-calculating neoclassical man is a very one-dimensional construct and allying him with the market imperfection interpretation of infant industry unsurprisingly diminished the richness of the arguments developed by Hamilton, Rae and List. Despite references to the contrary (by Baldwin), it is hard not to conclude that the above revisionists lacked first hand acquaintance with the writings of Hamilton or List, which could go some way to explaining the distorted representation of their views. Alternatively, the optimising agent is so central to neoclassical theory that all theorising and interpretation could not proceed on any other basis. Either way, it does not reflect too well on the integrity or profundity of neoclassical scholarship.

By the 1970s, the idea that infant industry represented a genuine exception to free trade appeared to have been forgotten by those neoclassical economists

who bothered to comment on it. Such was the lack of awareness of the arguments, that the policy prescriptions of the original infant industry theorists were profoundly misrepresented. For example, critics of interventionist policies pursued by many developing countries erroneously attributed perceived failures of such policies to deficiencies in the theory of infant industry protection (see Krueger, 1978). Shafaeddin (2000) pointed to the extent to which the literature on the infant industry argument was loaded with fallacies and confusions, citing Little et al (1970), Corden (1974), Krueger (1978) and Greenway and Milner (1993) as perpetrators of such canards. Among the more blatant misrepresentations perpetrated by the above authors was the view that infant industry protection was synonymous with import substitution industrialisation, that it was conceived as a permanent feature of policy, and that it was envisaged across the board for all of manufacturing as opposed to being applied selectively (Shafaeddin, 2000, p. 3). If such errors were not an act of bad faith, then they serve to highlight a widespread malaise in economics, which is the failure of economists to read original works often resulting in partial and sometimes erroneous interpretations being compounded and widely propagated.

3.5 Development Economics and its lack of impact on International Trade Theory

Development Economics as a distinct sub-discipline within economics is a post World War II phenomenon. It coincided with the political reality of a new social democratic compact in many developed countries, in the form of expanded welfare states and State responsibility for macro-economic stability and newly acquired independence for many ex-colonial dependencies. These newly formed States were by and large characterised by low levels of economic development and a trade structure biased towards the exportation of a few primary commodities, principally to the markets of their erstwhile colonial masters. However, policy makers in developing countries were imbued with a post-war optimism that a better future was possible and that poorer economies could achieve greater material prosperity if the correct policies were adopted. This optimistic expectation on the part of policy makers was supported by new

theorising on the issues of economic development by economists in the emerging sub-discipline of Development Economics.

The majority view among early Development economists (and policymakers) was that a necessary condition for catch up by poorer economies involved limited openness and integration into the global economy and the strategic intervention of the State as a mobiliser of scarce resources (Nayyar, in Chang, 2003, p. 63). Like the infant industry theorists of the previous century, increased industrialisation was seen as being the conduit through which economic progress would be achieved. It was to this end that most of the theories of these early development economists and the policies that emanated from them were aimed. In this section, attention will be focused on those economists who specifically addressed the issue of international trade and its impact on economic development. Accordingly, we confine ourselves to the work of Raul Prebisch, Hans Singer and Gunnar Myrdal.

The logic of the dominant theory of international trade (comparative advantage) is that open borders is the best policy for a country (regardless of its level of economic development) to adopt in order to maximise national income. Despite the failure to develop a dynamic theory of international trade, early neoclassical economists, such as Alfred Marshall were optimistic about how the fruits of technological progress would be dispersed globally. He accepted that technological change was more likely to occur in the industrialised sectors where developed countries prevailed. However, he saw the fruits of such advances in technological knowledge also benefiting developing countries through improved terms of trade. The logic is simple, technological advance results in greater global supply of industrial goods relative to agricultural goods, so all other things being equal (the key qualification), this should result in lower (higher) relative prices of industrial (agricultural) goods to the benefit of countries who export primary commodities and import manufactures (Marshall, 1930 [1879], p. 13).³⁴

³⁴ Classical economists such as Malthus, Ricardo and Mill also expected the terms of trade to move in favour of primary producers over time due to diminishing returns as a result of scarcity of suitable land

Prebisch and Singer independently but almost simultaneously challenged this view that exporters of primary commodities should enjoy improved terms of trade over time (Prebisch, 1950, Singer, 1950). According to Singer (1990, pp. 323-24), the historical statistical basis for their claim was an analysis of British terms of trade from 1873 to 1938 which Singer presented to the United Nations (UN) in 1947/48 and which formed part of the UN study of the terms of trade of underdeveloped countries. The evidence was of a fall in the relative price of commodities compared to manufactures over that time period. Both writers claimed that there were good reasons to believe that developing countries who accepted their static comparative advantage in primary commodities would suffer worsening terms of trade over time to their economic detriment. This formed part of the rationale for their recommendation of activist policies such as import-substitution industrialisation (ISI). The terms of trade argument runs within neoclassical orthodoxy which acknowledges that a disimprovement in a country's terms of trade will reduce the economic welfare benefits to it from integration into the global economy. It behoved neoclassical trade theorists to address this challenge to trade orthodoxy, which two stalwarts of mainstream orthodoxy, the ubiquitous Haberler and Harry Johnson duly did. Haberler exhibited one of the tendencies that is all too common among neoclassical economists when confronted with challenging evidence and that was to question the empirical accuracy of the claims. He alleged that the failure to include services trade or take account of quality improvements biased the results in a way unfavourable to the free trade case for primary commodity exporting nations (Haberler, 1961, in Theberge, 1968, p. 329). He also maintained that a more accurate measure of the economic welfare effects of economic developments were factoral and not commodity terms of trade, even as he acknowledged the inherent difficulties in defining and measuring these (p. 324). Finally he asserted that it was better for countries to learn to cope with instability through increased flexibility than to interfere politically. For Johnson, a deterioration in a country's terms of trade, while unfortunate from an economic welfare perspective, did not necessarily justify a country straying

and mineral resources. This is what happened to British terms of trade which deteriorated for the first half of the nineteenth century (Singer, 1990, p. 323).

from its comparative advantage. Adverse global developments happen but it still made sense for a country to export primary commodities as long as international prices indicate that this is where their comparative advantage lies (Johnson, 1964, in Therberge, 1968, p. 355). Like Haberler, his default position was that adverse global market developments should never provoke government intervention (p. 355).

The limitation of Marshall's expectation as to the evolution of the terms of trade over time was that it ignored potential developments on the demand side. For terms of trade to go against producers of manufactures, supply enhancing developments have to exceed demand enhancing developments. Both Prebisch and Singer claimed that in a dynamic growing global economy, growth in demand for manufactures would exceed growth in demand for primary commodities. This is partly due to the innate character of manufactures as compared to primary products (Engel's law) but also because as demand for industrial goods shows signs of flagging, new products or new types of existing products act as a continual stimulus to industrial demand (Prebisch, 1963, in Theberge, 1968, p. 291). The fact that primary commodities are used as inputs in manufacturing and the evolution of technology in such a way as to replace primary commodity inputs with synthetic substitutes also leads to a lower income elasticity of demand for commodities over time (Singer, 1950, p. 479).

The aspect of Prebisch and Singer's thesis on declining terms of trade that has filtered down into mainstream theory is the aforementioned elasticity pessimism where primary commodities are concerned. (Singer also spoke of how low price elasticities meant greater instability of primary commodity prices and hence greater instability in terms of trade). However, to focus only on the demand side of their analyses is overly reductionist of their writings on terms of trade, since both writers also spoke of supply side developments, in particular the ways in which technological advance manifests itself, which both saw as being influenced by the nature of markets where products were traded and the nature of labour markets in different countries. Here, their theorising is much influenced by their awareness of the different economic realities internationally;

that is to say, how imperfectly markets work and the role of economic power in determining economic outcomes.

Singer (1950) highlighted that productivity gains have two ways of manifesting themselves, either in the form of higher income for producers and/or lower prices for consumers. While the different forms of manifestation are a matter of indifference in a closed economy, they matter for the distribution of the benefits of technological progress in a globalised world. He claimed that industrialised countries got the best of all worlds since they enjoyed the fruits of their own technological progress in the form of higher producer income and that of foreign technological progress in the form of lower prices for their imports (p. 479). Prebisch explained that this occurred because manufactures were generally sold in monopolistic markets (which gave producers price setting powers), and labour in developed countries (at the time he was writing) had more bargaining power due to high levels of employment, social legislation and trade union muscle. This meant that higher productivity resulted in higher wages and higher profits with minimal effects of price. By contrast, primary commodity producers sold into very competitive markets, which gave them limited price-setting powers, and developing countries were characterised by chronically high levels of unemployment and underemployment, which meant that labour had limited bargaining power. Unsurprisingly then, productivity advances in primary commodity production translated into lower commodity prices as opposed to higher producer income (Prebisch, 1963, pp. 291-92). Singer subsequently added that prices of manufactures produced in developed countries included a Schumpeterian rent element for innovation as well as monopolistic profits (Singer, 1990, p. 326).

Just as Prebisch and Singer's theses on the determination of terms of trade relied on the reality of market structures (product and labour) as well as on demand elasticities, so too, their arguments in favour of State intervention in the form of ISI were broader than simply terms of trade arguments. According to Palma, the core of Prebisch's analysis was his differentiation of the structure of economies in core (developed) and peripheral (developing) countries, the former being homogenous and diversified while the latter were heterogeneous and

specialised. Structural heterogeneity was associated with unemployment, while excessive specialisation combined with unemployment reinforced a tendency towards problems with the balance of payments and deterioration in a peripheral country's terms of trade. However, Palma claims that, notwithstanding the association of Prebisch with the terms of trade issue, it is not clear whether he himself saw it as being the most important aspect of his work. Palma attributes this legacy to the tendency of the North American academic world to extract unidimensional hypotheses from his work (Palma in Newman et al, 1990, p. 292). For Ho (2008, p. 511), Prebisch's principal concern was the tendency among peripheral economies to disequilibrium in the Balance of Payments and the constraining effect this had on investment and development. It was to relieve the foreign exchange constraint that Prebisch supported ISI. Palma also claims that Prebisch's argument for industrialisation had to do with the very nature of manufacturing, such as the presumed positive externalities that it generates (Palma, in Newman et al, 1990, p. 294).

Singer (1950) was also keenly aware of the dualistic nature of developing countries; that is to say, the productivity gap between the export-oriented sector and the non-traded goods sector. For him, the dangers of static theorising were that it could lead to incorrect policy prescriptions, such as promoting the export sector on the grounds of its superior (static) productivity. As he asserted, the relevant opportunity cost that should guide policy makers was not determined by existing productivity differentials but rather by comparing what is with what might have been, if scarce domestic resources had been deployed differently (Singer, 1950, p. 476). He alleged, rather contentiously, that nowhere was the limited static comparative advantage story accepted, not even in developed countries. In reasserting the importance of dynamic considerations in a country's economic life, he strayed beyond the static moorings of neoclassical theory. In a further violation of neoclassical tenets, he claimed that the gains from industrialisation were as much social and behavioural as economic. For him what mattered in the economic life of a country was "how one thing leads to another, and the most important contribution of an industry is not its immediate product ... and not even its effects on other industries and immediate

social benefits ... but ... its effect on the general level of education, skill, way of life, inventiveness, habits ... etc” (p. 476).

It was not even that Prebisch and Singer favoured ISI as the single policy means by which peripheral countries could industrialise and develop. According to Ho (2008, p. 511), Prebisch started to advocate the promotion of manufactured exports among peripheral countries as well as to the centre, while also insisting on the continuation of ISI (see Prebisch, 1951, p. 77, 84; 1964, p. 20, 25, 76, 115, 123).³⁵ And, as Singer (1990, p. 327) points out, export-substitution industrialisation is as much a logical policy consequence of the desire to get exports away from primary commodities as is ISI. Singer’s thinking on economic development also evolved to put less emphasis on the product characteristics of a country’s trade and more on the characteristics of the country itself, and on its ability (or lack of it), to develop autonomous technological capacity (Singer, 1975, p. 376). Until developing countries acquired such capacity, he viewed them as being the losers in all their economic dealings with developed countries (both trade and investment) and for such flows as existed between them to contribute to economic divergence and not convergence, as neoclassical theory claims. His adoption of Myrdal’s notion of cumulative effects was rooted in the nature of knowledge and its importance in technological advance. For him, knowledge feeds on itself (leading to ever greater productivity) whereas for the country without such capacity, even knowing what knowledge is needed is a challenge (p. 379). This inevitably results in unequal bargaining power that affects all economic relations between developed and developing countries, to the detriment of the latter.³⁶

For Gunnar Myrdal, neoclassical international trade theory was patently inadequate to the task of explaining economic underdevelopment. He asserted that no study of the orthodox theory of international trade, however intensive,

³⁵ The policy of simultaneously protecting the domestic market to foster industrialisation, while also promoting manufacturing exports was part of the unorthodox policy arsenal successfully deployed by the East Asian economies in their quest for economic development.

³⁶ Intra-manufacturing terms of trade between Developed and Developing countries would appear to support Singer’s later view, with the worst deterioration in their terms of trade over time being experienced by the least Developed countries in their trade dealings with the Developed world (Maizels, 1998).

was capable of furnishing an explanation of the reality of international economic inequality and its growth over time (Myrdal, 1957, p. 147). He alleged that policy advice on trade matters given to underdeveloped countries was scientifically unfounded and practically misleading (p. 99). He questioned the failure of trade theorists to reassess the adequacy of their theory in the light of divergent facts (p. 150) and concluded that it had to do with the inherited predilections of economic theory, claiming the purer the theorist, the more in thrall he/she was to such predilections (p. 162). Yet, he felt that the literature on the problems of underdeveloped countries was too atheoretical and needed to be integrated with economic theory and international trade, albeit in a more comprehensive and realistic way (p. 156). So, in his view, development economics needed to be more theoretical while international trade theory needed to be more empirically informed.

The predilections of economic theory of which Myrdal was so critical were equilibrium (which he rightly stated was incapable of explaining change in a social system) and what he saw as the unwarranted separation of economic phenomena from non-economic (but still economically relevant) phenomena. For him, many economic processes were self-reinforcing and this was partly explicable because of the way social and cultural forces interacted with economic forces (Myrdal, 1957, Ch. 3). Among the economic self-reinforcing phenomena that he alluded to were economies of scale, agglomeration economies and increasing marginal productivity of resources, while the socially reinforcing but economically consequential phenomena had to do with health and education, superstition and attitudes. As he said, the frustrating effects of poverty operate through other media than those analysed by traditional economic theory. Nevertheless, they (economic and non-economic) are interlocked in circular causation (pp. 26-27, 29-30).

Myrdal did not consider all market forces to be disequilibrating, he also acknowledged that they could, under certain circumstances, be equilibrating. (He labelled such effects as backwash and spread, respectively). However, he believed that the determining factor as to which effect prevailed was the level of economic development, with spread effects more likely the higher the level of

economic development and vice versa (p. 34). This he attributed to a range of inter-related economic, political and social factors, such as the shrinkage of economic space (due to better transport and communications infrastructure) and a more interventionist State that provided social-safety nets as well as better health care and education, resulting in more room for rational social solidarity. By contrast, countries with low levels of development usually possess economic, political and social features the opposite of those just listed, meaning that backwash effects were more likely to ensue as a result of market processes.

As far as unfettered international trade for developing countries is concerned, he considered it much more probable that backwash effects would predominate, to the detriment of the development potential of such countries (pp. 51-52). This is why he favoured interventionist policies in general and mercantilist policies in particular with regard to trade. These were, *inter alia*, infant industry protection and export promotion. He rejected the mainstream view that it was always economically irrational to produce at home what could be imported more cheaply, citing the immediate realities of unemployment, foreign exchange constraints as well as the dynamic benefits of learning (pp. 95-96). This was consistent with his view that market prices were no objective indicator of scarcity and wants, as they reflected the institutional framework of society with its laws, rights and entitlements, asset distribution and powerful organisations (p. 49). This does not mean that he was unaware of the dangers of protectionism, simply that he saw State planning and intervention as a necessary albeit insufficient condition for economic development among poorer countries. As he saw it, building capacity is the business of government. Incentives alone will not work because understanding how people respond to market signals requires an awareness of the social and cultural context.

The work of Prebisch, Singer and Myrdal has been cited by mainstream trade theorists as giving intellectual support to ISI at the expense of outward-oriented policies but this is a travesty of their position. Effectively what they were advocating as far as the architecture of international trade was concerned was for special and differential treatment for developing countries in the interests of their economic development (see Ho, 2008). All rejected free trade as being

incompatible with economic development for developing countries. As Myrdal said, the advice “to abstain from interfering with foreign trade ... is in most cases tantamount to advice not to bother about economic development” (Myrdal, 1957, p. 94). All started from the position that there were distinctive differences between the economies of developed and developing countries and, given this inequality, that the rules should be tilted in the favour of the latter, in the sense of having privileged access to developed country markets while retaining discretion to protect their own domestic markets. For Myrdal this “double standard morality” (Myrdal, 1956, p. 292) in international trade was rationally motivated until such time as the poorer economies caught up with the richer ones. Their rejection of free trade and laissez-faire was based on their dynamic perspective, their starting point of profoundly imperfect markets and a view of human behaviour as being situationally rational (understandable given the context) as opposed to the universally applicable, omniscient hyper-rationality of neoclassical lore. In all of this, their analysis was a twentieth-century reflection of the issues that infant industry theorists, like List had raised a century earlier.

It is claimed that classical economists and neoclassical economists accepted the infant industry argument as a genuine exception to the free trade logic of comparative advantage. It is noteworthy, that despite this “apparent” acceptance, no attempt was made to integrate the dynamic and social insights contained in the infant industry thesis into mainstream international trade theory. Likewise, it is significant, that beyond a few quibbles about countries’ trade structures and their bearing on their terms of trade, that the other issues raised by this generation of socially-aware Development economists had limited impact on the mainstream of economic theory and international trade theory. And all this occurred at a time when mainstream trade theory was considered to be very productive as evidenced by the number of new theorems that became part of its central canon. For Myrdal, the latter type of theorising was essentially arid, as an economic theory that was not simply “empty boxes” also needed to be more adequate to the facts (Myrdal, 1957, p. 163). Given that many of the relevant causal factors in economic life are non-economic, this inevitably

required a broader type of economic analysis; that is to say, general economic theory should be recast as social theory (p. 100).

What happened was the exact reverse. Economic theory subdivided into sub-disciplines and there was almost no cross-fertilisation between them.

Just like macro and micro, development economics and international trade existed in separate and relatively impermeable silos. This state of affairs persisted until the 1970s, when there was a conservatively-inspired theoretical counterattack with the intent of showing that the theories of the emerging post-war disciplines of Development and Macro were really fallacious after all, thus allowing for their re-colonisation by the untainted theoretical core of international trade theory and microeconomics.

3.6 Conclusion

The theory of comparative advantage is as valid as the fundamental assumptions on which it is based. These include, *inter alia*, the assumption of constant employment at a national level; arbitrage where factor earnings are concerned (which renders such earnings independent of the sector where the factor of production is employed); and a belief that what is economically optimal in a static sense must also be optimal in a more dynamic sense. As this chapter has highlighted, each of these assumptions about the nature of economies has been contested. If employment is variable and trade liberalisation leads to an increase in unemployed resources, then National Income could fall. Likewise, if a country's comparative advantage lies in low productivity sectors (in other words if the economy is characterised by structural heterogeneity) then, National Income could also fall consequent to trade liberalisation. Finally, if a country's ability to compete in the international economy depends on, among other things, the capacity of its domestic resources and if the development of that capacity requires more than self-interested, individually rational behaviour (since the nature of learning is such that you cannot know *ex ante* what you will know *ex post*), then selective protectionism to develop such capacity may ultimately deliver greater economic prosperity than free trade.

The unambiguous policy conclusions that derive from the comparative advantage theory of free trade have been subject to challenges on the grounds that the above cited fundamental assumptions are not a valid representation of how economies function. Cournot's trade analysis implicitly assumes that actual employment is equilibrium employment, while Schuller explicitly referred to the empirical phenomenon of unemployed and underemployed resources to motivate his trade recommendations. Keynes arguably started an academic revolution with his assertion that there is no automatic in-built tendency for an economy to operate at full employment equilibrium. Graham believed that manufacturing was characterised by economies of scale unlike agriculture, while Manoilescu documented the superior productivity of certain manufacturing activities over others, including agriculture. What is striking is that none of these pertinent arguments had any fundamental impact on the development of mainstream trade theory. That is despite them being usually internally logically consistent and generally empirically-informed. Moreover, they appealed to commonsense. As shown in this chapter, there was some limited engagement with them but they were variously dismissed using a variety of stratagems. So Cournot was incorrectly accused of being logically wrong in his analysis, while Schuller's empirical assertion of the existence of unemployment was rejected on the grounds of being more apparent than real, since unemployment could not be reconciled with individual rationality. Graham's thesis was diverted into a cul de sac with disputes over the exact nature of such economies of scale and a dismissal of the one logically accepted exception (external economies of scale) on the grounds of empirical irrelevance. Manoilescu's empirically based challenge was contained by reinterpreting it in a misleadingly narrow way but which once again served to insulate the free trade case. Where the challenge was too great to contain (Keynesian unemployment or infant industry case for protection) it was effectively ignored until such time as those contentions could be rebutted.

The question that requires an answer is why neoclassical economists in particular have displayed such tenacity when it came to defending core theory and why their theorising has been so uninformed by empirical considerations? Myrdal (1957), who appealed in vain for economic theory in general and

international trade in particular to become more empirically engaged, attributed such theoretical stubbornness to the predilections of economic theory, especially the central notion of equilibrium and the belief that economic phenomena could be fruitfully separated from non-economic phenomena. For him, economic theory if it was to be of any use, needed to be social theory but he was aware that such a general theory would probably never fit into a neat econometric model (pp. 100-101). This fixation that economists have with models may in large part explain the resistance that economists have to a description of and explanation for social and economic phenomena that is not amenable to the models that economists normally deploy. Krugman admitted as much when he acknowledged that important ideas in Development economics (Myrdal's cumulative causation and Albert Hirschman's notion of linkages) were ignored, not because they were wrong, but because they were meaningless until such time as they could be modelled (Krugman, 1995, p. 27). He confessed that an idea is only taken seriously by the economic fraternity if it can be modelled (p. 5). His definition of an economic model, when expressed formally, is one where an agent is maximising something and the outcome is an equilibrium of sorts (p. 75). For Krugman, the predilections of economists for the sort of modelling that he mentioned is in no way an indictment of the profession, even when it results in the neglect of important ideas. This is because he views such neglect as a mere temporary phenomena, part of the inevitable cycle of knowledge acquisition associated with formal model building (p. 72). Furthermore, while accepting that the principles on which economic models are based are crude, he asserts that they work surprisingly well and that attempts to find an alternative have been notably unsuccessful (p. 77).

Krugman's defence of economic method as ultimately yielding of valuable insights (if not quite truth) smacks more of a belief system than a claim that is empirically well-founded. Moreover, as this chapter has attempted to show, economists, when in thrall to a belief system, can stubbornly defend their economic models, even in the face of glaring contrary evidence. All of which would be of mere academic interest if such ideas were not so socially consequential in a policy sense. To restate a Keynesian assertion in the form of a question that it behoves all economists, regardless of their methodological

leanings, to answer, and that is, whether it is better to be roughly right or precisely wrong.

Chapter 4. Trade III: Bringing it all Back In: Neoclassical Trade Theory gets more real?

4.1 Introduction

Chapter 2 looked at how a core concept in trade theory “comparative advantage” evolved from its classical political economy foundations to a form that anaesthetised it as an extension of the perfectly competitive general equilibrium model of the economy. This development necessitated an increasingly idealised description of the economic environment in which economic agents were presumed to operate. It has been claimed consistently that this retreat from social realism occurred because developments in trade research were primarily tool-driven, with ontic concerns being of secondary importance. The last chapter addressed the strategies deployed by mainstream practitioners in international trade in order to protect the core claims of neoclassical trade theory from multifarious challenges during the period when the neoclassical model was being developed and refined. In this chapter, I will evaluate developments in trade theory over the last 60 years, in particular the questionably named “new trade theory” that has analysed the causes and consequences of trade when markets are permitted to operate in a manner different to the perfectly competitive construct. Superficially at any rate, trade theorising had reversed its previous tendency to describe the economic environment in an increasingly narrow way, by permitting markets to take on more varied forms than perfect competition. The era of narrowing was succeeded by an era of ostensible broadening. Some might argue that the new heuristic in trade research (modelling trade when markets are imperfect) was driven by an awareness of the empirical inadequacies of the theory of comparative advantage based on perfect competition. Regardless of whether they concur or not with this view, most mainstream practitioners have hailed such theorising, claiming that it has enriched our understanding of the positive and normative consequences of trade. The following quotation is representative of this position. “The explorations of trade with imperfect competition have also

deepened our understanding of the costs and benefits of trade policies”
(Grossman, 1992, p. 1).

It is the contention of this chapter that such theoretical developments were not primarily driven by empirical concerns but (like earlier developments in trade) were internally driven by tractability considerations as well as the need to derive new theoretical results, especially as comparative advantage under perfect competition was essentially a finished endeavour. (I make this claim even as I acknowledge that, in the last decade, empirical trade research has expanded considerably owing to improved data sets). Partial evidence that will be offered in defence of this assertion is the timing and sequence of permissible market imperfections and the relative paucity of empirical research (at least until very recently). Furthermore, I would challenge the view a la Grossman that this latter day modelling has enhanced our understanding of the consequences of trade policy in any appreciable way.

The layout of this chapter is as follows. Section 4.2 examines the factor market imperfections literature which, for the most part, rationalised unemployment and the different earnings of similar labour, by attributing them to distinct failings in the labour market, chief among them being inflexible wages. In this way, limited damage was done to the policy conclusions of the perfectly competitive model. Section 4.3 looks at increasing returns to scale that are external to the firm and how their admission altered the positive and normative predictions of trade theory. Both departures from the standard model still retained the central assumption of perfect competition in product markets. The major rupture in theorising occurred in the late 1970s and early 1980s with the emergence of a wave of literature on trade when product markets are imperfect. Such was the perceived change in direction with that which had gone before, that this theory was labelled “new trade theory”. Section 4.4 critically interrogates this “new trade theory” in its different guises. These guises are: (i) homogenous firms producing differentiated products under technological conditions of internal economies of scale and market conditions of monopolistic competition; (ii) partial equilibrium oligopolistic trade models where firms compete in a strategic fashion; (iii) economic geography or the rediscovery of

space, which is effectively a variant of monopolistic competition when resources are also mobile; (iv) heterogeneous firms operating in monopolistically competitive markets. (The latter, which is of very recent vintage, has been given the creative label of “new new trade theory”). Section 4.5 considers the various attempts that were made to render trade theory (which in its neoclassical form had always been resolutely static) dynamic. This form of theorising did not take off until the 1990s with the application of tools gleaned from the also questionably designated “new growth theory”. Section 4.6 contains a brief overview of the empirical literature that sought to establish the relationship between a country’s trade regime and its economic performance. Section 4.7 concludes with reflections on the value added of this ostensible broadening of trade theory.

4.2 Factor Market Imperfections: The First Permitted Wrinkle in the Neoclassical Trade Model

4.2.1 Explaining labour markets by recourse to factor market imperfections: an example of neoclassical reductionism

Incorporating non-clearing and/or segmented labour markets into otherwise standard neoclassical trade models started in the 1950s and became an accepted, albeit marginal, part of mainstream research that persisted up to the late 1970s when it was overtaken by the more *exciting* new trade theory. The literature fell broadly, though not exclusively, into two camps: an economy with involuntary unemployment and a full employment economy where identical labour gets paid different (non-compensating) wages.³⁷ Common to both approaches is the idea that wages do not reflect the opportunity cost of labour. Early exponents of each type of market failure were Haberler (1950) and Hagen (1958), respectively.

Haberler’s principal task was two-fold, to look at how inter-sectoral factor immobility impacted on the welfare effects of trade liberalisation and also to examine the effects of trade when real wage rigidity characterised a sector of the economy. He also briefly addressed the impact of trade liberalisation when

³⁷ By non-compensating is meant wages that are not designed to reimburse recipients either for higher levels of skill or higher levels of disutility associated with the work in question.

external economies exist in production. Ultimately, what his modeling showed was that the immobility of factors of production in and of themselves was insufficient to negate the gains from trade liberalisation and that it was only when combined with wage rigidity that a country *might* lose from trade.³⁸ This could happen if trade liberalisation resulted in relative prices moving against the sector where rigid wages applied. Even then, a welfare loss (in the sense of lower national income) was not a certainty as the output loss had to be weighed against the terms of trade gain. The same scenario holds if, due to external economies, trade liberalisation resulted in a country specialising in the good where it had a comparative disadvantage.

Hagen (1958) addressed the implications of trade liberalisation when non-compensating wage differentials exist between sectors for both a one factor and two factor economy. In the one factor (Ricardian type) economy, he showed that it was feasible for a country to specialise in the wrong good; that is to say, the good where it has a comparative disadvantage. This would occur if the wage differential was sufficiently large to cause the domestic relative price of the good with the underlying comparative advantage to exceed the international relative price. In that instance, the country would be better off (in the sense of having higher levels of national income) if the high-wage sector were protected. In the two factor case the effects of a wage differential are two fold. First, it causes the production possibility frontier to shrink as resources are not efficiently allocated between sectors. The high-wage sector employs too much capital and too little labour and the reverse is the case for the low-wage sector. The second effect is to create a wedge between domestic relative prices and the marginal rate of transformation along the distorted production possibility frontier. Again, trade protection of the high-wage good would be welfare enhancing in the sense already described. However, trade protection would be insufficient to return the economy to the more efficient production possibility frontier. That would require a labour subsidy equal to the difference in wages between the two sectors.

³⁸ It was Johnson (1965) who explained the insufficiency of factor immobility to negate the gains from trade by highlighting that immobility of factors is not sufficient to disrupt the first order conditions for Pareto optimality. In other words, factors of production can still be paid their opportunity cost.

These two seminal papers inspired a flurry of successors, the most prominent of which were Bhagwati and Ramaswami (1963), Johnson (1965), Kemp and Neighi (1969), Bhagwati, Ramaswami and Srinivasan (1969), Pattanaik (1970), Batra and Pattanaik (1971), Bhagwati (1971), Magee (1973), Brecher (1974a, 1974b), Bhagwati and Srinivasan (1974) and Corden and Findlay (1975). The succeeding literature in this field had two principal themes. The first was to analyse the impact of trade liberalisation for varying types of factor market imperfections and varying assumptions as to the production structure of the economy. The other was to address first best policy issues when such market imperfections exist and to rank policies in terms of their welfare impact. These two themes were not always distinct with some contributions developing new models and also ranking policy instruments.

Pattanaik (1970) showed that free trade is still superior to autarky and a lower tariff to a higher tariff when factors of production are completely immobile (an exchange economy), provided that factor price rigidity is defined in terms of the import good. Likewise, when factors are inter-sectorally mobile and a wage differential exists between sectors, trade (and lower tariffs) will still be better than autarky (and higher tariffs) provided the distortion does not result in the country specialising in the wrong good. Conversely, when factors are immobile and factor prices are rigid in terms of the export good (or some constant utility combination of the export and import goods) or if the country specialises where it has a comparative disadvantage due to the wage differential, then, one could not make the welfare case for free trade or lower tariffs.

Brecher (1974a) looked at the impact of trade liberalisation in a Heckscher-Ohlin type 2x2 economy with a binding economy-wide minimum wage. (By binding is meant that the wage is above the market clearing level and so results in involuntary unemployment). The welfare impact of trade liberalisation depends on whether it renders the constraint more or less binding. For a labour-abundant economy, trade liberalisation would increase labour demand and be employment and welfare-enhancing. On the other hand, for a capital-abundant country, it would reduce labour demand and employment and, provided the

economy remained incompletely specialised, it would reduce welfare. The welfare impact when a country ends up completely specialising in the capital-intensive good is ambiguous.

Corden and Findlay (1975) combined an inter-sectoral wage differential with equilibrium unemployment in a Harris-Todaro type model, where capital is sector specific but labour is inter-sectorally mobile. In this instance, the labour-allocation mechanism equalizes rural wages with expected urban wages, where the probability of getting a job is determined by the proportion of the urban labour force that is employed. Most of the focus of their contribution is on optimum policy intervention, but they highlighted the disadvantages of tariffs: first, for the consumption distortions that they create, but also because, in a Harris-Todaro type economy, protection of the high-wage industrial sector could conceivably result in lower net output at world prices, due to the reduction in agricultural output that such a policy would induce.

4.2.2 Why factor distortions posed a minimal threat to neoclassical trade theory

According to Harry Johnson (1965, p. 260), it was Bhagwati and Ramaswami (1963) who reduced all ad hoc arguments concerning tariffs to a simple application of second best welfare theory. Their innovation was to interpret market imperfections in terms of a violation of one of the conditions of Pareto optimality.³⁹ They reviewed Haberler's external economy example and Hagen's wage differential in the two-factor case. First, they showed that trade liberalisation could still be welfare enhancing notwithstanding the market imperfections posited. The main emphasis of their paper was to show that domestic distortions do not automatically lead to a recommendation for protection but rather to some other form of government intervention, the nature of which depends on the type of imperfection present in the economy. So, for example, in Haberler's instance of external economies in production, they called

³⁹ Pareto optimality under conditions of free trade hold if the $MRT = MRS = FRT$, where MRT is the domestic marginal rate of transformation (or slope of the production-possibility frontier), MRS is the marginal rate of substitution in the preferences of consumers and FRT is the foreign rate of transformation or international relative prices if we are considering a small price-taking economy.

for a production subsidy in the relevant sector, whereas for Hagen's wage-differential case, they argued that the optimal policy was a wage subsidy. They also claimed that there may be cases where a welfare-improving tariff does not exist when there are domestic distortions. This claim appeared to be supported by Johnson (1965) invoking second best arguments and claiming that, a priori, one cannot know whether a substitution of one violation of Pareto optimality conditions for another would worsen or improve economic welfare. This was refuted by Kemp and Neigishi (1969), and Bhagwati, Ramswami and Srinivasan (1969) accepted that their prior conclusion had been erroneous. In their clarification the latter showed that if two out of the three Pareto optimality conditions held, then a tariff could be welfare-improving even if it disrupted the equality of the two variables that originally satisfied Pareto optimality. However they showed that if none of the three variables was equal; that is to say if the domestic marginal rate of substitution, the domestic marginal rate of transformation and the foreign rate of transformation all differ ($MRS \neq MRT \neq FRT$), then there is no feasible single policy intervention to raise welfare above the laissez-faire level.

The upshot of Bhagwati and Ramaswami's (1963) contribution to the debate was to shift the focus away from trade intervention when domestic distortions exist and towards other forms of policy intervention. The nature of the intervention depends on the nature of the distortion and the structure of the economy. So, for example, Corden and Findlay (1975) showed that if capital was sector-specific and labour inter-sectorally mobile but Harris-Todaro-type search unemployment did not exist, then a wage subsidy to increase employment in the higher-wage manufacturing sector would be the optimal policy. But if there was Harris-Todaro-type unemployment, then the first best policy would be a uniform wage subsidy regardless of the sector of employment. Bhagwati and Srinivasan (1974) had reached similar conclusions.

Bhagwati (1971) synthesized the various contributions into a common analytical framework whereby he both enumerated optimal policies for different forms of distortions but also ranked suboptimal policy interventions. Specifically in the wage differential case, he ranked production subsidies as second best and trade

intervention as third best. According to Bardhan, Bhagwati (1971) laid down the general principle of targeting in economic policy:

departures from the usual marginal conditions of Pareto efficiency are best tackled by using policy instruments that act most directly on the relevant margin. Not merely is this the most general result available to this day in the theory of trade policy, it allowed liberal economists the leeway, in departure from the practice of classical economists, to be interventionist on matters of domestic policy and at the same time to be a free-trader in the international arena (Bardhan, 1993, p. 138).

Other less weighty criticisms of trade intervention, when factor market distortions exist, were issued by Batra and Pattanaik (1971) and Magee (1973). The former claimed that this sort of analysis conflated two effects, the effect of the original distortion and the effect of trade liberalisation, but that it attributed the potential inferior outcome to one effect only, trade liberalisation. The latter was uttering the general view of economists when he said that “the rigidity may be caused by a combination of institutional forces such as minimum wage legislation, governmental regulation or control, labour unions or other forces” (Magee, 1973, p. 4). The implication was that trade would always be beneficial provided institutionally created distortions did not exist. If they did exist, then it was more accurate to compare distortion-riddled free trade equilibrium with its counterpart in protected trade than to compare full-employment autarky with less than full employment free trade equilibrium. While trade liberalisation would always confer consumption gains in the form of lower prices, the effect on production depends on whether the policy shift would exacerbate or ameliorate the underlying distortion. If it ameliorated the distortion then trade liberalisation would be unambiguously positive, whereas if it exacerbated it, then production losses would have to be weighed against consumption gains.

Ultimately, the heretical idea that trade intervention could be justified because labour markets do not function in the idealised manner that trade theory had traditionally assumed did not present much of a challenge to the neoclassical trade model. This was partly because undesirable labour market phenomena were reinterpreted within a neoclassical framework as being the product of some **exogenous** distortion. Modeling the effects of trade proceeded by

introducing a specific distortion (capable of rectification) into an otherwise perfectly competitive product market. General equilibrium was maintained and model closure was facilitated by the perfectly competitive product market assumption which ensured marginal cost pricing. An added bonus was that such distortions did not dispense with the use of general functional forms to describe preferences and technology. Moreover, it only marginally weakened the presumed beneficial welfare effects of trade liberalisation, since protection was rarely more than a third-ranked policy measure among the hierarchy of measures, and optimal policy was simply a question of getting prices right, so that they reflected their Pareto-efficiency scarcity values. The concession was at the level of laissez-faire not free trade. According to trade historian Irwin (1996, p. 170), the theory of domestic divergences constituted an important landmark because it established general, powerful principles that limited the damage suffered by free trade from any number of imaginable market failures. The only broad consequence was that once and for all the case for free trade was delinked from the case for laissez-faire. Irwin claimed that the linking of laissez-faire and free trade was a confusion of which many critics of free trade were guilty.

4.2.3 Weaknesses in the neoclassical analysis of labour markets and trade

The neoclassical analysis invokes a lot of extra (mainly implicit) assumptions. First, it takes for granted that the root of the problem is some exogenous interference that is preventing labour from being priced correctly. This in itself is a heroic assumption since it dismisses the possibility that the problem may be endogenous to the system. Second, it assumes that the distortion is identifiable and correct scarcity values knowable. Only in this way can policy makers apply the policy instrument directly on the relevant margin. Third, it dismisses that possibility that there may be multiple distortions at work. If this were the case, then second best considerations would be relevant and Bhagwati's and Bardhan's policy prescriptions may be inappropriate. Fourth, it presupposes that there are no other constraints that could render first and second best policies (usually some kind of subsidies) infeasible. One reason for the popularity of tariffs or border taxes in developing countries is because they are a relatively easy way to raise taxes, especially if the fiscal system is underdeveloped. This

issue of fiscal and distributional constraints was raised by Anand and Joshi (1979) who showed that the ranking of policy instruments may change when these additional constraints are recognised. Fifth, it ignores the possibility that there may be political and social constraints limiting the applicability of first best policies. Trade theorists are negative about trade taxes as they see them as causing a consumption distortion, when consumers leave the market due to higher tariff induced prices. This loss is considered deadweight since it cannot be recouped. Yet they assume zero costs with other forms of revenue raising. A priori, there is no justification, not just for the assumption of zero administrative costs, but also for the weaker assumption of administrative neutrality across the different forms of revenue raising and spending. However, the principal objection to the Bhagwati inspired generalised rules regarding policy ranking has to be that of oversimplification. As Rodrik (1987) showed, it fails to recognise the endogenous element of many distortions. Certain features of the world are assumed fixed and others variable, but the fixed elements may also be capable of variation based on behavioural responses to new policies. So, for example, a production subsidy designed to encourage output in a sector where positive externalities exist, may encourage a change in plant design that results in less positive externalities. Policymakers thought plant design was exogenous when it may be endogenous. Rodrik holds that such policy errors can be avoided if endogenous behaviour is recognised by policy makers, which can only occur if policy intervention is conducted on a case-by-case basis, as opposed to following general rules, Bhagwati style.

The conclusion that policies need to be tailored to particular circumstances is a big departure from neo-classical orthodoxy, which assumes that universal principles guide the operation of markets and hence a universal one size fits all policy is appropriate. The latter is the thinking behind the policies of the major international organisations such as the World Bank and International Monetary Fund (IMF).⁴⁰ The issue of the endogeneity of distortions should cause policy makers to question whether something that is a product of market processes and

⁴⁰ It is worth remembering that List, when making his case for protection, specifically said that the case for duties and their levels could not be determined theoretically but on the special conditions of the country in question. (List, 2005b [1841], p. 231).

human behaviour can be addressed or even redressed by simply tinkering with the price mechanism through taxes and subsidies. Moreover, there is the added issue of the diffuseness or otherwise of market distortions. The neoclassical approach of treating distortions individually and assuming that they are unconnected stands in marked contrast to the theoretical approach of critics of the orthodoxy such as Myrdal. In contrast to the Krugman allegation that old development economists lacked technical competence, it has been suggested that their resistance to formalism was a matter of choice (Fine, 2008, p. 8). That their theories contained multiple distortions (to use neoclassical language) would support this thesis. Formalism would inevitably have resulted in so many compromises that the resulting theories, while elegant and tractable, would have been of questionable relevance.

4.2.4 Diminishing returns to orthodox theorising as an explanation for the research on neoclassical labour markets and trade

The structure of the neoclassical trade model in its purest unsullied form, as an extension of perfectly competitive general equilibrium, was effectively complete by the mid-1950s. Thereafter (or at least for the following twenty years), modifications to the structure were of a cosmetic nature. These included allowing for variations in: (i) the number of factors of production; (ii) the number of goods (including non-traded goods) and; (iii) the degree of inter-sectoral mobility of factors of production. A feature of the original neoclassical trade model is not simply the highly stylised (and unrealistic) depiction of the social environment in which workers, consumers and producers are presumed to operate, but how impervious trade theorists appeared to be to empirical reality. Empirical inconveniences such as the mass involuntary unemployment of the 1930s or different wages being paid to apparently identical workers did not push the juggernaut off course during the period when the neoclassical trade model was still under construction. This seemed to change in the 1950s, 60s, and 70s (as the previous sections indicate), when trade analysis was conducted taking account of unemployment and differential wages being paid to identical workers. It is my contention the motivation for this change was not the patent empirical inadequacies of the neoclassical trade model but, rather, diminishing theoretical returns to the mainstream construct. There was a limit to the

theoretical harvest that could be reaped from the main props of neoclassical method; that is to say, individual optimisation and perfectly competitive markets. The structure was almost complete and if theorising was to continue, then something would have to give. The first thing to give was the assumption of perfectly competitive factor markets. Arguably, this was the first permitted wrinkle in the otherwise pristine structure of perfectly competitive general equilibrium, because it was the least damaging to the mainstream method and to the normative implications of the application of this method. Readdressing (previously neglected) labour market issues as the outcome of a factor market imperfection still preserved perfect competition in product markets, it still permitted general equilibrium analysis, it still allowed for general functional forms to be used in production and consumption, and it still resulted in the normative conclusion that free trade was probably a desirable policy. The only concession that needed to be made was that *laissez-faire* might not be the best policy, depending on how trade interacted with the market imperfection. This was a small policy concession, doubtless worth paying, in the light of the theoretical dividend that it yielded in terms of new theoretical outputs.

4.3 Increasing Returns: A Spotted History within Neoclassical Trade Theory

4.3.1 Questioning the unpalatable but preserving the useful: the irrelevance of empirical relevance

It is curious that a phenomenon so widely recognised and so central to the efficiency case of industrial capitalism as economies of scale should have received such shabby treatment at the hands of the very practitioners who were considered economic experts and defenders of *laissez-faire* capitalism. Arrow (2000) contrasted the history of competitive equilibrium, which he described as cumulative, with the more erratic history of increasing returns. He attributed the steady history of competitive equilibrium to its coherence, in the sense of supplying answers to all sorts of questions (even if it was frequently at variance with observation). By contrast, the erratic history of increasing returns can be attributed to its incoherence. The reason he gave for this difference was

“mathematical accident” that derived partly from the difficulties of articulating a theory of value when increasing returns exist (Arrow, 2000, p. 173).

According to Arrow (2000, p. 171), Smith’s theory of value, which equated price with cost, implicitly assumed constant returns to scale. This is despite the centrality of increasing returns to Adam Smith’s case for laissez-faire and free trade. David Ricardo ignored increasing returns, while John Stuart Mill, despite acknowledging that increasing returns could lead to monopoly, otherwise operated within the tradition established by Ricardo (Arrow, 2000, p. 172). While Auguste Cournot (1971 [1838]) was the first to recognise that increasing returns were not consistent with parametric pricing, it was Alfred Marshall who fully realised how devastating economies of scale were for the emerging discipline of economics. Simply that economies of scale are not compatible with central (fundamentally static) constructs of neoclassical theory namely, optimisation, unique equilibrium and perfect competition. His ingenious way out of the impasse was to focus on external economies of scale, whereby the industry supply curve was negatively sloped in price-output space, but at the level of the firm, it was positively sloped (Marshall, 1920, Book V, Ch. XII and Appendix H). This way, marginalist analysis and competitive markets could be retained while still preserving some of the central Smithian insights about the productivity benefits of extended markets and large industries. One problem associated with such economies (that is not immediately visible because of the partial equilibrium nature of his analysis) is that of multiple equilibria. The existence of the latter obviously creates problems for the deterministic world view of markets where laissez-faire is considered the best policy. So, while making economies of scale external to the decision-making unit resolved one problem, it created another. Graham’s (1923) case for permanent protection, on the grounds of variable returns to scale in different sectors of the economy, can also be viewed as an argument for intervention in order to achieve a better equilibrium. The reaction of the mainstream to Graham’s thesis is very revealing, in that they conceded the logical merit of his case under the strict assumption that such economies were external to the firm (a distinction that Graham did not make) but then dismissed it as a theoretical curiosity with little empirical merit (Viner, 1937, p. 481). Regardless of whether such economies

were internal or external, it never occurred to Knight (1925) to apply the same standard of empirical relevance to the construct of perfect competition as it did to the less amenable construct of external economies of scale. It would seem that empirical relevance gets invoked when useful but otherwise has limited impact on the nature of neoclassical theorising.⁴¹

4.3.2 The grudging acceptance of external economies: theoretical productivity reigns again

Despite the initial hostile reaction to Graham's thesis and the scepticism regarding the existence of external economies of scale, a sporadic literature did develop in succeeding decades (up to the 1980s) that incorporated external economies of scale into the otherwise conventional perfectly competitive general equilibrium model. This literature fell broadly into two camps, one which addressed the positive and normative consequences of trade liberalisation when economies of scale exist and the other which looked at the implications of variable returns to scale for traditional core propositions in trade, such as the Stolper-Samuelson and Rybczynski theorems, respectively. Related to both concerns was the shape of the production possibility frontier in the presence of variable returns to scale.

Tinbergen's (1945) contribution to the debate was to express the Graham argument of variable returns to scale using geometry as opposed to numbers. He acknowledged that he did not differ in his conclusions from Graham, even though he questioned the consistency of the latter's numbers. He showed that when the production possibility frontier is concave; that is to say, when there are increased opportunity costs associated with specialisation, then the usual effects (incomplete specialisation) and gains from trade prevail. Likewise, when increasing returns exist in all sectors (a situation represented by a convex production possibility frontier in two-good space), gains from trade are to be expected, though in this instance trade induces complete specialisation. The interesting case is the Graham example where both increasing returns to scale

⁴¹ Another critic of Marshallian external economies of scale was Sraffa (1926) who dismissed the concept, (along with that of perfect competition) on the grounds of empirical implausibility. For him internal economies of scale were more probable with demand acting as a brake on increased production.

(IRS) and decreasing returns to scale (DRS) exist simultaneously in different sectors. Such production possibilities are characterised by a production possibility frontier (PPF) that is both concave and convex over different ranges. While trade may be welfare enhancing (especially if the country specialises completely in the IRS good or incompletely in the DRS good along the concave portion of the PPF), the economy could also settle at a sub-optimal equilibrium simply because there is more than one output mix that is an equilibrium. Moreover, he assumed that in the IRS industry, prices were determined by average (not marginal) costs, giving rise to inefficient output mixes. He concluded that for countries to gain from trade, they must either have full information (so as not to settle at an inferior production point) or they must engage in marginal cost pricing (a view at variance with his theory of pricing when IRS exist).

The value added of Tinbergen's contribution, over and above what Graham (1923) had to say, was his application of geometrical tools (PPF and indifference curves). This is unsurprising given the relatively recent development and application of those tools to trade theory in the 1930s. However, it is also noteworthy that Tinbergen's professional background was as a trained physicist, one who along with a wave of other scientists, switched to economics during the depression of the 1930s. According to Mirowski (1991, p.152), these new recruits to economics had only a passing acquaintance with the long tradition of economic theorising but were armed with more up-to-date mathematical techniques, which they immediately applied (with questionable effect) to the neoclassical programme. It could be viewed as a case of tools looking for suitable applications.

Matthews (1949/50) addressed IRS and convex PPFs in instances where he is explicit on the external nature of such economies of scale. For Matthews, positing IRS as external to the firm is important since it results in a divergence between private marginal opportunity cost, that is relevant for managerial decisions, and social marginal opportunity cost, that determines the slope of the PPF. Unlike Tinbergen, he did not believe that complete specialisation was inevitable if IRS existed in all sectors. He showed that incomplete specialisation

could be a stable equilibrium if the slope of the PPF was less convex than the slope of the indifference curves. His conclusions were that the presence of IRS of an external variety could result in both countries having sub-optimal levels of consumption or one country being worse off in a trading equilibrium than under self-sufficiency.

For Chipman (1965), the most interesting consequence of external economies was the existence of multiple equilibria (Chipman, p. 749). He claimed that common to Matthews (1949/50, p. 154), Meade (1952, Figure XVII) and Kemp (1964, pp. 114-117) was the depiction of two stable equilibria, where specialisation was complete and one unstable equilibrium, where specialisation was incomplete. Government intervention (such as a tariff) of a temporary nature is sufficient to move an economy from a stable equilibrium to a preferred stable one, but preserving an unstable equilibrium would require permanent protection. Chipman made passing reference to Graham and Matthew's argument that trade may be welfare disimproving but refused to elaborate on the issue on the grounds that what interested him more were positive issues such as stability of equilibrium.

The accepted view as articulated by Tinbergen was that when all sectors were characterised by IRS, then the PPF was convex, whereas when economies were variable across sectors, the PPF was concave near the axis representing the DRS good and convex near the axis representing the IRS good. Minabe (1966) pointed out that IRS in production was not sufficient to ensure that the PPF was convex when there was more than one factor of production. He showed that whether the PPF was concave, linear or convex depended on the relative strength of the returns to scale and the relative strength of factor-intensity effects. Herberg and Kemp (1969) illustrated that, contrary to the geometric exposition of Tinbergen, the production possibility frontier was actually concave at the axis representing the increasing returns good and convex at the axis showing the decreasing returns product. Panagariya (1981) corroborated the geometric assertions of Herberg and Kemp and demonstrated that an implication of the properly formulated PPF was that an economy (especially if it was small) could end up specialising **completely** in the DRS good, something

that would never occur with the IRS good. Such an equilibrium would not necessarily imply welfare losses from trade (as account has to be taken of terms of trade effects) but it would be inferior to an internal production equilibrium. A temporary subsidy to the IRS sector would improve matters but it would not be welfare maximising. That would require a permanent subsidy. Moreover it is not necessary for the country to change its comparative advantage to benefit from subsidising the IRS good.

Much of the normative work on external economies was designed to show that the case as made by Graham really was a theoretical curiosity that was possible but unlikely. Kemp and Negishi (1970) demonstrated that a sufficient condition for a country not to lose from trade in a multi-commodity world was for its increasing returns sector not to contract and its decreasing returns sector not to expand. Negishi (1972) argued that if scale economies were the result of learning, then they were irreversible and so a country could not lose from trade even if scale economies existed. Krugman (1987a), in an elaboration of Kemp and Neighsi, showed how all countries could gain from trade regardless of whether their increasing returns to scale industry contracted or not. A sufficient condition was international factor price equalisation and the global non-contraction of output in the increasing returns sector. In other words, it did not matter where the increasing returns industry was located. To get this result, he had to assume that labour was the only factor of production, that the other sector exhibited constant returns to scale and that trade resulted in the constant returns to scale good being produced in both countries. The only problem with this analysis was that if trade resulted in complete specialisation in both countries, then international wage equalization would not exist and the country producing the constant returns good could lose. Krugman (1987a) was at pains to state, however, that he considered the former case (international wage equalization) to be a not unusual event, although he admitted that if countries were very unequal in size, complete specialisation was more likely. Finally, Ethier (1979) resurrected an earlier argument of Viner (1937, p. 480) claiming that if such external economies of scale existed, they were more likely to be a function of the size of the international industry and not the national industry. His rationale was that a larger international industry would allow for greater specialisation in

the production of intermediates, at lower cost. In this instance, as long as the global output of the increasing returns sector increases, all countries can gain.

Another line of investigation in this literature was to see how the presence of variable returns to scale modified or otherwise altered the standard trade theorems associated with the constant returns to scale, perfectly competitive general equilibrium model of trade. Minabe (1966) showed that if the PPF retained its concave shape (the factor-intensity effect being stronger than IRS), then the Stolper-Samuelson (SS) theorem on the income distribution effects of trade would continue to hold. On the other hand, if IRS resulted in a convex PPF, then SS would no longer hold. Jones (1968) did to Minabe's analysis what Tinbergen did to Graham's; that is to say, he applied new tools to essentially the same issue. Using algebra to describe the economy and assuming that trade always resulted in incomplete specialisation, he showed that SS and the Rybczynski theorems do not readily hold when there are IRS. SS can be reversed if external economies of scale are large enough or marginal and average factor intensities across sectors of the economy do not correspond in terms of rank. Moreover a convex PPF can be expected if average and marginal factor intensities differ in terms of rank. The Rybczynski theorem (which in the standard, constant returns to scale, general equilibrium model, predicts that an increase in a factor of production will result in an increase in the output of the sector that uses intensively that factor of production and a decrease in the output of the other sector) will only hold if average and marginal factor intensities correspond across sectors. Mayer (1974) corroborated Jones's finding with regard to SS but showed that that when variable returns to scale exist across sectors, Rybczynski will continue to hold provided the system is stable. Finally Panagariya (1980) revisited SS and Rybczynski in the presence of variable returns to scale but with less restrictive assumptions. First he showed that for SS and Rybczynski to hold, it is neither necessary nor sufficient for the PPF to be concave. Second, he drew a distinction between relative returns to factors of production and real returns, showing that when variable returns to scale (VRS) exist, they do not necessarily move in the same direction. So for example, if the relative price of a good rises, the **real** return to the factor of production that is used less intensively in its production could rise (contrary to SS) but the

relative return could fall (in accordance with SS). Some of these issues on factor returns had already been raised by Batra (1968), as acknowledged by Panagariya (1980), but, as is common in this kind of theoretical research, he claimed that his analysis was more general and dependent on less restrictive assumptions than that which preceded him.

Just as with factor market imperfections, it would seem that the form of theorising described in this section was more internally driven by a desire to obtain new theoretical results (through marginal modifications to the dominant theoretical model) as opposed to being ontologically driven by a desire to describe social reality better. However, an unexpected bonus was that some of these models did explain certain features of social reality in a more realistic way than the models that had preceded them. The traditional constant returns to scale, perfectly competitive trade model, predicted that international trade occurred because countries were different. Allowing for increasing returns to scale led to the prediction that trade could occur because there were inherent efficiency benefits to be derived from specialisation. Melvin (1969) showed that trade was possible between two identical economies (in terms of production and tastes) provided increasing returns to scale exist. This would have been impossible with traditional models. Such trade leads to greater global efficiency to the extent that it permits the concentration of industry in one or a few centres, thereby reaping the efficiencies of large scale production. It also provides a rationale for the observed phenomenon of large trade flows between relatively similar countries. A less desirable aesthetic outcome of a Melvin-type model was that it introduced an inherent arbitrariness into trade theory in terms of explaining which country is likely to export which good. It suggests a crucial role for accident, history and policy as determinants of the international pattern of production and specialisation.

Similar to the factor-market imperfections literature, the external economies of scale research had limited impact on the main body of international trade theory. According to Krugman (1987a), this was because it could not be reconciled in a fruitful way with comparative advantage, which he ascribed to its excessive loyalty to the techniques of traditional models, such as PPFs and offer curves.

He claimed that such research was theoretically awkward and empirically elusive and was a literature with little influence (Krugman, 1990, p. 4). The lack of influence until recently is a valid claim. (A quick perusal of international trade textbooks in the early 1980s is testament to same). However, this could also be attributed to its very successful replacement by the so called new trade theory that emerged in the late 1970s and 1980s which introduced a new heuristic into international trade research; that is to say, the analysis of economies of scale under conditions of imperfect competition, rather than to its empirical elusiveness.

When assessing the historical literature on external economies of scale, Gomes and Irwin fall into a predictable pattern, with Gomes more loath to express directly his own opinion. He outlined the arguments, said that Graham's thesis had intrinsic merit, then asked the age old question of how relevant it was to contemporary international commerce. He answered indirectly by citing the anti-interventionist preference of a "significant strand" of modern literature, concluding that if such economies were international, Graham's argument for protection was invalidated, "according to Ethier" (Gomes, 1990, p. 101). Irwin is more refreshingly direct. For him the case for protection has not been made because our understanding of the determinants and effects of external economies is so weak (Irwin, 1996, p. 152). Neither writer questioned why external economies of scale were not central to mainstream research until relatively recently. Irwin, erroneously, said that trade-related aspects of the debate had evaporated until the early 1980s, basically overlooking the work of Kemp, Negishi and others already cited in this section. For him, the recent analysis (especially Panagariya, 1981) showed that Graham, taken on his own assumptions, was correct, but subsidisation was a better policy than protection. Gomes said that renewed interest in the Graham controversy resulted in more thorough analysis than previously with the conclusion mentioned above. It is clear that both writers accept that more recent research, and the methods used, added clarity to the debate. Yet for all this more "thorough" analysis, Graham's thesis has not been fundamentally altered. It did, however, afford theorists ample opportunity to write lots more abstruse papers on the shape of the production possibility frontier and the nature of equilibrium (or equilibria),

while downplaying (exactly as Knight, Viner and Hablerler had done) the normative significance of the argument. It is paradoxical that a concept so disputed as external economies of scale should have become an indispensable component of trade theory once it finally (propelled by the new growth theory) attempted to cast off its static garb and move down the dynamic path.

4.3.3 The indispensability of external economies to a later heuristic: reconciling optimisation and dynamics

The neoclassical project is erected on the foundation of optimal decisions taken by rational individual agents. Such an edifice implies equilibrium outcomes, at least in a personal sense. When a rational decision making agent is in personal equilibrium, he/she is using his/her scarce resources in the best possible way and has no incentive to deviate from this path unless the constraints that he/she faces change. In the general equilibrium world of neoclassical economics, only exogenous changes in resource endowments, technology or preferences stimulate changed actions on the part of micro decision makers. By contrast with behavioural views of human nature or Marxian analysis, the neoclassical perspective is inherently static, since optimisation by all seeing all knowing agents and continuous change are not obviously compatible. Either the agent is not all knowing or the agent's preferences are continually changing (both of which bring the methodology of optimisation into question) or else purposeful human action has consequences that cannot be fully appropriated by the individual. Hence external economies are indispensable if optimisation is to be reconciled with endogenous change.

From a mechanical point of view, neoclassical theory requires that the actions of individual agents, when viewed collectively, generate increasing returns if endogenous change is to be built into the system. In other words, an agent might optimise and use his/her scarce resources in the best possible way but the system generates positive feedback, either in the form of augmented resources or increased productivity of existing resources, which leads the agent to change his/her behaviour and do more of the growth generating activity. This is an issue to which I will return to in section 4.5.

4.4 New Trade Theory: Technical Wizardry to what Effect?

4.4.1 Separating truth from fiction

New trade theory is, of course, not new in terms of the subject matter that it addresses. Spatial issues, economies of scale, economies of agglomeration and imperfect markets have long been the subject of regional and location studies. Theories of imperfect markets in neoclassical economics are also of mature vintage having been given academic respectability with the almost simultaneous publications of Robinson (1933) and Chamberlin (1933). Even the integration of trade and imperfect markets had earlier precedents in neoclassical trade theory with the work of Lovasy (1941) and Enke (1946). Yet it is valid to claim that what happened with static trade theorising in the 1980s represented a discrete break with that which had gone before. This is all the more remarkable given the resistance to any departure from perfectly competitive theorising that the profession had previously exhibited. Breaking away from perfect competition involved multiple compromises; specific functional forms had to be used, new forms of model closure had to be found and, in the case of oligopolistic models of trade, even general equilibrium had to be abandoned in favour of partial equilibrium models. Moreover, much of this new form of theorising also had uncomfortable normative implications for trade policy. The previously monolithic, aesthetically pleasing structure of trade theory whose theoretical results had been unambiguously supportive of free trade was replaced by a plethora of very specific models supportive of a variety of policy positions. Moreover, this new structure to trade theorising dominated the research agenda. The challenging question is to try to explain this apparently new departure and the acceptance of what had been previously so unacceptable. I remain sceptical of the hypothesis that it was empirically driven by the patent empirical inadequacies of the orthodox model.

Empirical work in the 1960s and early 1970s had already highlighted the explanatory weakness of the orthodox trade model and its inability to explain similar trade between similar countries (Linder, 1961, Grubel, 1967, 1970, Kravis, 1971). Balassa, (1966) rationalized this trade by appealing to internal

economies of scale, whereby firms in a country produce only a limited range of potential products within an industry in order to lengthen their production runs in the interest of efficiency. Yet, as acknowledged by Krugman (2009), such an intuitively plausible explanation of empirical reality was not part of standard international trade theory, even as late as a decade later, because such ideas seemed “incomprehensible”. This incomprehensibility was due to a lack of any “usable model of imperfect competition” or more to the point “general equilibrium models of imperfect competition” (p. 563) He claimed that international trade, more than any other applied field in economics, was built around general equilibrium models. This could be considered a partially valid defence, since general equilibrium analysis, with its focus on market interdependence, does capture essential aspects of economic reality and, as such, is a framework that theorists justly wished to preserve. What renders it spurious as an argument was that it was precisely this framework that was jettisoned in what was a major field of international trade research for much of the 1980s and 1990s, that of oligopolistic competition and contestable markets. Also, elsewhere Krugman had asserted that economic theory was simply a collection of models, which for him represented the outcome of maximising behaviour, ideally in a general equilibrium setting, but one that is also acceptable as a partial equilibrium analysis (Krugman, 1995, p. 40). So if the history of trade theorising over the last thirty years is anything to go by, what renders an idea acceptable to the economic fraternity is its amenability to economic modeling, the essential aspect of which is individual rational decision making of a maximising variety and some kind of equilibrium outcome. Inconvenient empirical reality would be acknowledged only when it could be rationalised with the tools that define the mainstream economic project. It seems that reality must fit the tools rather than vice versa. Rather naively Krugman acknowledged as much when he spoke of the sociology of late twentieth century research, replete with technically able researchers desperate for interesting questions to study (p. 34). Fourteen years later in his Nobel acceptance speech Krugman spoke of how colleagues had tried to dissuade him from international trade research on the grounds that it was a “monolithic field” and “a finished structure, with nothing interesting left to do” (Krugman, 2009, p. 561). This would appear to be an admission that the traditional trade model (the perfectly

competitive general equilibrium construct) had run its course and was incapable of fruitful extension or of yielding any new theoretical results. So the emergence of a new heuristic in international trade research (modeling individual behaviour under conditions of imperfect competition) was timely, in that it offered scope for the derivation of a whole new set of theoretical results. Empirical relevance, while undoubtedly a bonus, was not the driving force behind this (not so) new field of research. Tractability was the necessary condition, and the scope it offered to derive new theoretical results appeared to be sufficient to ensure its academic respectability in the intellectual environment of late twentieth century economics. Perfectly competitive, general equilibrium models had been exhausted but there was the whole new arena of imperfect competition to be exploited.

4.4.2 Monopolistic competition part 1: Homogenous firms

The biggest problem associated with abandoning perfect competition was that of model closure. Lancaster (1980) and Krugman (1979) assumed that the market structure was monopolistic (in the Chamberlin sense), with each firm producing a differentiated product under conditions of increasing returns to scale and facing a parametric demand function. Firms in the industry can differentiate their products from each other, thereby giving them some degree of price setting and monopoly power. On the other hand, low barriers to entry mean that market entry will continue until economic profits are driven to zero (as happens in a perfectly competitive environment). Product differentiation is presumed to derive from consumer preferences, with Lancaster assuming that consumers are heterogeneous, where each has a preferred version of the differentiated good. Therefore, increased product variety enhances consumer welfare as it makes it more probable that the consumer will find his preferred version of the good. This account of preferences was also adopted by Helpman (1981). The other story is that told by Krugman (1979) and Dixit and Norman (1980), who adopt a Dixit-Stiglitz account of consumer preferences, whereby the representative consumer has an innate taste for variety, with more varieties adding to consumer welfare. Of the two versions of consumer preferences, Lancaster's is undoubtedly more realistic but it is also harder to model. According to Krugman (1987a), it makes little difference to the outcome of

trade theorising which version is adopted and, given how influential Krugman's work has been, his version will be recounted.

Krugman (1979) showed how two identical countries, each with a monopolistically competitive industry, could gainfully engage in intra-industry trade with each other. The essence of the model is contained in three equations: (i) marginal cost = marginal revenue, which yields the price over marginal cost mark up; (ii) average cost = price, which determines the level of output for the representative firm and; (iii) labour demand = labour supply, which determines the number of firms in the industry, since labour demand is proportionate to the output of the representative firm. In this model, the gains from trade come from increased product variety and increased scale of production, which lowers price. The direction of trade, which country will export which good, is indeterminate although the volume of trade is not. Krugman (1980) extended his original model by introducing transport costs and allowing for diversity of tastes between countries. This gave rise to a home market effect, whereby a country has a competitive advantage in the good for which a large home market exists. An important theoretical extension that restored the unity of trade theory was the uniting of monopolistic competition and economies of scale with comparative advantage (see Krugman, 1981, Dixit and Norman, 1980 and Helpman, 1981). This was done by allowing for more than one sector and by assuming that factor intensities differed between sectors but were the same within sectors. In other words, all differentiated goods within a sector were assumed to be produced with the same factor proportions.

Despite differences in detail, what these models showed was that when countries had very different factor endowments and when the factor intensity of production differed across industries, then trade was more likely to conform to the predictions of the H-O model; that is to say, be trade of an inter-industry variety where each country exports the good that uses relatively intensively its abundant factor. Alternatively, when countries were very similar in terms of their factor endowments, then trade was more likely to be of an intra-industry variety. Another feature of Krugman (1981) was that his results substantially weakened the traditional Stolper-Samuleson prediction that trade resulted in

winners and losers within countries. He showed that if goods are highly differentiated, even scarce factors of production can gain from trade, albeit to a lesser extent than the abundant factor. That result derives from the presumed benign impact of increased variety on consumer welfare. Alternatively, if goods are highly substitutable (less differentiated), the scarce factor has an increased risk of loss but may still avoid being worse off after trade liberalisation if the trading countries are not too dissimilar in factor endowments. According to Krugman this latter result was his “killer ap”, an insight that was different and that mattered (Krugman, 2009, p. 564). Arguably (though Krugman does not say so explicitly), this result mattered for ideological reasons, to the extent that it implied low risk of losers from trade liberalisation.

This new departure in trade theorising had much to recommend it. The depiction of markets (where firms are price makers) and technology (where economies of scale may exist) represented an improvement in terms of realism over the type of firms and forms of technology that were assumed to exist in perfectly competitive environments. It also theorised the real and important phenomenon of intra-industry trade. It preserved the valuable structure of general equilibrium, albeit at a cost of using specific and highly special functional forms. In addition it was possible to integrate these new theoretical insights with the older H-O model of inter-industry trade, thereby giving the impression of continuity with the past and, at the same time, knowledge advancement. Even the normative implications were attractive, illustrating extra potential (though not guaranteed) gains from trade due to economies of scale and product variety.

Notwithstanding all their apparently multiple advantages, these models failed to inspire much subsequent theorising (of the general equilibrium monopolistically competitive variety) or, especially, empirical work in the 1980s and 1990s. In his review of the structure of international trade in the *Journal of Economic Perspectives*, Helpman only cites two pieces of empirical research testing the efficacy of the theory and these results do not appear conclusive (Helpman, 1999). Helpman (1987) found that the share of intra-industry trade in bilateral trade between two countries was greater the more similar countries were in terms of income per capita (which he took as a proxy for similarity of factor

endowments) and the more similar they were in size, as measured by GDP. Hummels and Levinsohn (1995) confirmed this finding (supposedly supportive of the theory) but then found that the inclusion of country pair-wise dummies could explain variations in intra-industry trade just as well as the variables emphasised by theory. The relative lack of empirical research until recent times could be attributed to a lack of suitable data and the statistical challenge of trying to corroborate theories, especially when they are underdetermined by the data.

I would assert (contrary to the current retrospective view) that a major research agenda in trade in the 1980s and for much of the 1990s lay, not so much in the development of general equilibrium monopolistic models of trade, as much as in the development of partial equilibrium oligopolistic trade models.⁴² So, for example, looking at the various anthologies of trade that emerged in the 1990s, the majority of articles related to oligopoly and strategic trade policy issues, with monopolistic competition being represented by the original articles cited in this section. Examples of such anthologies are Grossman (1992) and both volumes of Neary (1995a and b). Imperfect competition of a monopolistic variety only appeared to have life under the rubric of “new economic geography” whose essential difference from its progenitor was that it allowed for factors of production to be mobile internationally as well as nationally and it dealt with inter-regional trade as well as international trade.

4.4.3 Oligopolistic trade models: claiming realism but not so real

What defined static new trade theory was the application of the tools of industrial organization (I-O) to trade. Practitioners, unsurprisingly, were unanimous in their approval though they recognised that there were problems to be ironed out. For Krugman, the development was extremely valuable, not just

⁴² An example of this retrospective bias is Neary (2009), despite his own extensive work on trade under conditions of oligopoly. My contention is that while the general view in 2009 may have been that the dominant paradigms in international trade were the theory of comparative advantage under perfect competition and trade based on monopolistic competition, this was not the case in 1999.

for its empirical insights but (revealingly) because “the new approaches brought excitement and creativity to an area that had begun to lose some of its intellectual drive” (Krugman, 1990, p. 261). A similar sentiment was expressed by Neary, who claimed that the application of I-O models to strategic trade issues was “one of the most exciting developments in recent years” (Neary, 1995a, p. xvi). Gomes (1990, p. 140) in his historical review of trade, approved of the development on the grounds of empirical realism, while Maneschi (1998, p. 203) spoke approvingly of the brave new world of new trade theory. Irwin (1996, p. 207), in keeping with the general theme of his book, was at pains to stress that while the theory of strategic trade policy clarified many aspects of international competition under various market conditions, it failed to provide a robust and unqualified case against free trade. In this, he would be supported by most of those trade theorists responsible for pushing back the boundaries to reveal this brave new world.

The birth of partial equilibrium models of trade under conditions of oligopoly is usually attributed to Brander (1981). The focus of his analysis was on the behaviour of two identical firms in two identical countries, each producing a homogenous product and each acting as a monopolist in their home market. It is assumed that each firm employed a Cournot strategy, treating the output of the other in **each** market as given. Transport costs were also assumed to exist. The net effect of allowing for international trade was reciprocal dumping caused because each firm had an incentive to sell more in the other’s market as long as price exceeded its marginal cost (this was not the case in the domestic market as profit maximisation meant equating marginal cost with marginal revenue which is less than price). Hence a new theoretical basis for trade was established, independent of comparative advantage, economies of scale and desire for diversity. Furthermore, this trade, although wasteful because of the existence of transport costs, could also be welfare enhancing since it led to more output and a lower price in both markets. In other words, it is pro-competitive. Crucial to the counterintuitive results of the model was the assumption of segmented markets, thereby ruling out third party arbitrage and implying that the firm makes different decisions for each market. Brander and Krugman (1983) elaborated on the Brander contribution by showing that his conclusions were

robust for a more general specification of firms' behaviour and demand. They find that if transport costs are low, then the dumping that results from trade liberalisation is welfare-enhancing but if transport costs are initially prohibitive and then decline, there is a welfare loss because the pro-competitive effect is swamped by the waste of incurring the transport cost. However in the free entry Cournot model, opening trade increases welfare. When price is the strategy variable, then reciprocal dumping does not occur in the homogenous goods case but does if goods are differentiated. Moreover, Venables (1990) showed that that predictions held under the more plausible assumption that firms first choose their capacities and then decide how much to supply to each national market in the light of demand considerations and transport costs.

Dumping models, though they broke new ground in that they introduced oligopoly in a partial equilibrium set up, were a sideshow to the main act, which was zero sum rent extraction models and how trade policy could be used to capture those rents at the expense of the competition. Early work in this vein was done by Brander and Spencer (1981, 1984) looking at conditions under which a tariff on imports could be welfare-improving. This was the case if the supplier was a foreign monopolist and potential domestic entrants were deterred from entering the market because of the foreign monopolist. A tariff would shift economic rents from the foreign monopolist to the domestic firm with little adverse effect on domestic consumers. Krugman (1984) showed that if marginal costs declined as output increased, one effect of protection was to make domestic firms more efficient and indirectly to act as a form of export promotion. Venables (1985) and Horstman and Markusen (1986) looked at the effect of protecting an oligopolistic domestic market when free entry exists, such that marginal profits go to zero. The former found that it could be beneficial provided the domestic and foreign markets were segmented and transport costs between markets existed. The source of the gain was the increase in consumer surplus as domestic firms displaced foreign firms and no transport costs were incurred when domestic firms served the domestic market. By contrast, Horstman and Markusen (1986) found that protection was not beneficial if markets were integrated (no transport costs) and protection encouraged inefficient entry into the domestic market. (One could question how

appropriate it is to designate markets with free entry as oligopolistic, since firms are not making economic rents). In a synthesis of the issues, Markusen and Venables (1988) showed that, *ceteris paribus*, protection was more likely to be welfare enhancing if markets were truly oligopolistic (no free entry) and segmented. Venables (1985) also showed that free entry does not invalidate the possibility that protection can be beneficial but it completely nullifies the case for using an export subsidy.

By common consensus, the most influential paper in the strategic trade policy literature was Brander and Spencer (1985). Their simple partial model assumed an international market characterised by duopoly where the domestic and foreign firm competed in a third market selling a homogenous product. The strategic interaction between the firms was designated as a Cournot game, where the relevant decision variable is quantity of output and each behaves as if the other will not react to its decision. In this game, an export subsidy by the domestic government would lower the marginal cost of production (and export) of the domestic firm and lead to increased sales at the expense of the foreign firm. The domestic welfare effect would be positive in that the increased economic rents that the domestic firm would now earn outweighed the fiscal cost of the subsidy. The loser would be the foreign firm and such a policy would not be globally efficient. The effect of export subsidies was akin to the effect of investment in capacity or research; that is to say it committed the firm to producing a higher level of output than would otherwise be the case. It could be that this paper sparked so much interest because the commonsense view was that when countries had monopoly power, an export subsidy would be welfare worsening because of its adverse impact on the subsidising country's terms of trade. In any case it sparked a series of responses in the form of other papers examining the welfare efficacy of export subsidies when markets are oligopolistic.

Dixit (1984) had already shown that, as the number of domestic firms grows, the optimal subsidy declines and, beyond some threshold number, becomes negative. Likewise he highlighted the more ambiguous welfare implications when firms also sell in the domestic market. Probably the most trenchant

criticism of the policy conclusions were those of Eaton and Grossman (1986) who showed that if the nature of the strategic interaction was different; that is to say if firms played a Bertrand game, taking each others prices as given, the optimal policy would be an export tax as opposed to an export subsidy, since the latter would make credible their commitment not to undercut the other, to the detriment of both. The point of their paper was to show that the existence of oligopoly per se and the reality of strategic interaction between firms do not lend themselves to universal conclusions as to the welfare benefits of a certain kind of trade intervention. In a further broadside against the case for intervention, Dixit and Grossman (1986) made the point that if a country has several rent-earning oligopolistic industries that compete for a common resource in relatively inelastic supply, then designing an optimal form of trade intervention becomes more difficult. This is because a policy that is advantageous to one oligopoly sector may be disadvantageous to another, through its adverse impact on the price of the scarce resource. In other words, it depends on the assumption that the expansion of one industry inevitably means the contraction of another because of resource scarcity. It is obvious that the motivation of Eaton and Grossman and Dixit and Grossman was to weaken the case for interventionist trade policy. Indeed the latter clearly say that when it is difficult to establish which sectors yield most rent, then the optimal policy is free trade.

All of the aforementioned papers assume that governments set their policy instruments prior to the competition between the oligopolistic firms. Another permutation is to assume that firms can take decisions (such as some form of irreversible investment) to influence the policy responses of government. Thus, an interventionist policy that could be sub-optimal from a national perspective before the firm undertook its investment, could become optimal after such investment has been made (see Dixit and Kyle, 1985). Other qualifications of the trade interventionist argument in favour of rent shifting are: the prospect of retaliation by foreign governments; the fact that domestic oligopolies may be part foreign-owned and, where profits have a lower weight in domestic welfare than government revenue (see Lee, 1990 and Neary, 1994). Leahy and Neary (2001) showed that the argument for an investment subsidy is much more robust

than the argument for an output subsidy. The basis for this claim is the assertion that negative (positive) spillovers from such investment and strategic substitutability (complementarity) are likely to be associated together. In such instances investment subsidies are optimal. This holds when the game is extended from a bilateral context to a multilateral context (Leahy and Neary, 2009). Similar issues were addressed by Collie (2005) and Haaland and Kind (2006, 2008) in the context of research and development subsidies. Other permutations of these models of strategic intervention are: strategic trade policy under conditions of asymmetric information (Collie and Hvid, 1993 and Brainard and Mortimort, 1997); strategic trade policy under conditions of uncertainty (Cooper and Riezman, 1989 and Dewitt and Leahy, 2004); and models of dynamic oligopoly in finite time. A different variation on these models was the attempt by Neary (2003) to develop a general equilibrium oligopolistic model. This could be considered a distinct theoretical advance over the existing partial equilibrium models but that is to overstate the case. To make his model tractable in a general equilibrium context, he invoked the very strong assumption that the oligopolistic sector was sufficiently small in the national economy to have no impact on economy-wide variables such as wages, national income or the general price level. His strategy was what he called being “large in the small (so as to allow for strategic interaction) but small in the large”. So to all intents and purposes his model is not that different to partial equilibrium models, the justification for which is the implicit assumption that the oligopolistic sector is sufficiently small for its developments to not impact on other sectors. From a normative perspective, Neary’s explicit embedding of oligopoly in a general equilibrium setting strengthens the pro-trade argument. The gains from trade are a pro-competitive effect, whereby oligopolistic firms face increased competition resulting in squeezed margins, as well as the standard comparative advantage effect in what is a two sector model.

These models were hailed as a move towards realism to the extent that they acknowledged the existence of pure profit and the strategic behaviour of firms and governments. Despite this, the predictions of the models vary widely as do the policy conclusions that emanate from them. Model results depend on the nature of the game, that is to say, the variables that the modeler assumes are

key; the symmetry or asymmetry of the players; the sequence of play; the degree of market integration or segmentation; the ease of entry into the market; and the nationality of the resident firm. In order to be tractable (to the modeler), the dimensions of the game have to be restricted, which is why the emphasis is either on output, or price or capacity expenditure or some singular variable to the exclusion of all others. The technical apparatus is challenged by multidimensionality in the sense of addressing how the firm deals with, not just competition, but also, simultaneously, its suppliers, its workforce and governments, or all whose behaviour impact on the presumed bottom line of profit. Moreover, it is notable that most theorists, while enjoying the loosening of restraints that partial equilibrium theorising permits, nonetheless tend to favour free trade and defend their policy position on the grounds of considerations that their models have failed to address – namely inefficient rent-seeking and retaliation by foreign governments. Yet this is never seen as a reason to question the usefulness of such models. The realism of these models is questionable, despite dealing with very real issues of market power and strategic considerations. The problem is that neoclassical method can only deal with them on its own terms (rational optimising behaviour), which limits the way in which realism can be accommodated. Finally very little empirical work has been done testing the validity of these (admittedly) highly stylized models. According to Leahy and Neary, this is because “oligopoly in trade does not lend itself easily to empirical work” (Leahy and Neary, 2011, p. 227). It is difficult to resist the conclusion that the fruitfulness of these models lay more in the opportunity that they afforded to researchers to derive new results (from some new optimising game) as opposed to adding to collective insights on the production and trading behaviour of real firms.

4.4.4 Monopolistic competition part 2: Economic geography

According to Krugman (1998b), economic geography (that emerged as a theme in mainstream economics in the 1990s) was the latest manifestation of the increasing returns/imperfect competition revolution in economics. Industrial organization supplied the tool box, new trade theory was the first useful application and space was, at that time, the latest application of the “technical tricks” that rendered this field fruitful foraging terrain for mainstream

economists. The issue at stake was how to explain uneven economic activity across space. Economics was not the first discipline to seek to understand the tendency for economic activities to cluster or why, on occasions, those clusters changed over time. There existed a Germanic tradition of location theory associated with the work of Von Thunen, (1966 [1826]), Weber (1909), Christaller (1933), and Losch (1954 [1940]). These accounts rationalised the uneven spread of economic activity on the basis of access to markets and access to critical inputs. According to Martin (1999, p. 66), location theory gave rise to two distinct traditions: regional science (which he asserts is closest to mainstream economics in terms of method) and economic geography which he designates to be more eclectic and empirically oriented. However, as Krugman (1995, p. 35) admitted, spatial economics remained a blind spot for the economics profession, despite elsewhere acknowledging that the facts of economic geography were obvious and striking, at least to the layman (Krugman, 1991, p. 483). His rationalization of this neglect is identical to his rationalization of the neglect of intra-industry trade, mainstream economists lacked the tools and therefore, this made space an unfriendly terrain for what it was that economists knew how to do (Krugman, 1995, p. 36). Notwithstanding the neglect of mainstream economists, Krugman dismissed the other social science traditions that did seek to understand and explain the distribution of economic activity over space, precisely because they did not theorise in the manner of mainstream economics; that is to say, the development of full maximisation and equilibrium models (p. 87). For Krugman, the inability of economic geographers to model resulted in them doing what they could do best, namely the description and organization of data (p. 85). While acknowledging the usefulness of the other traditions for policy purposes (p. 86) he still asserted that such work fell short of the ideal, which he and other mainstream economists were finally able to rectify through their use of clever models. In such a way would the “insight of geographers” meet the “standards of economics” (p. 88).

Krugman (1991) developed a two-region two-sector model, with one sector (agriculture) exhibiting constant returns to scale and employing sector specific, regionally immobile factors of production, while the other sector

(manufacturing) exhibits increasing returns to scale and employs mobile factors of production. Output in manufacturing is assumed to be differentiated and therefore the market structure is imperfectly competitive, albeit in a still quite competitive monopolistic sense, where firms never earn economic rents. The short run is differentiated from the long run by the mobility of workers, with workers presumed regionally immobile in the short run and mobile in the long run. There are costs to transporting manufacturing goods between regions and such costs are modeled as “iceberg”; that is to say, it is as if part of the value of the product is lost in transportation. The pattern of economic activity and how it evolves over time is determined by: the extent of economies of scale; transport costs; and the percentage of overall activity that is potentially mobile. So for example, if economies of scale in manufacturing are weak, if transport costs are high and if manufacturing is a small percentage of overall economic activity, then one would expect economic activity to be spatially dispersed. A weakening in these conditions, for example if transport costs fell substantially and economies of scale became more pronounced, then one would expect more concentration of increasing returns economic activity. The origin of centres of economic activity is not explained but their growth is. It all depends on the centripetal versus centrifugal forces associated with the concentration of economic activity (what Myrdal referred to as spread and backwash effects). For Krugman, the centripetal forces are economies of scale in production and the positive interaction between firms’ decisions to locate and labours’ decision to migrate. If firms’ decisions on location make a region more attractive to mobile labour and mobile labours’ decision to migrate make production more profitable for a firm, then this inter-action acts like a positive externality that makes such location and migration decisions self-fulfilling. Centrifugal forces on the other hand are increased competition in centres of economic activity, which can drive down product prices and drive up factor prices. How transport costs, economies of scale and location and migration decisions interact, especially when transport cost are neither prohibitive nor zero, depend on the parameters of the model. There are many alternative models that provide alternative explanations as to why location decisions can be reinforcing (in the sense of self-fulfilling), of which two are Venables (1996) and Baldwin and Forslid (1997). Venables (1996) focused on the intermediate goods sector,

whereby the increased size of the latter sector made manufacturing more cost effective and the size of manufacturing acted as a magnet for the intermediate goods sector. For Baldwin and Forslid (1997), large markets increase the efficiency of investment and increased investment enlarges markets.⁴³

For Krugman, the insights to be gleaned from the application of I-O tools to space can be used to rationalize world history! Technological advance that resulted in declining transport and communication costs could explain the differentiation of the world into a high wage core and a low wage periphery (Krugman and Venables, 1995). But then, he can also tell another story. Rather than increased economic integration caused by lower transport costs being the driving force behind an unequal world, market size could be the driver (Puga and Venables, 1996). Economic geography is sexy (Krugman's words not mine) because so many inter-acting factors can potentially reinforce one another, and lead naturally to multiple equilibria (Krugman, 1998b, p. 172). In such a world, history matters, small events can have big outcomes but, these factors do not condemn the world to chaos, since order will emerge spontaneously. Equilibrium reasserts itself. The methods of mainstream economics are validated.

For other mainstream economists such as Neary (2001), Krugman is guilty of hyperbole, especially as the outcome of his (and other models) depend on special functional forms, and solutions can only be derived by numerical methods (not analytically). Moreover the propensity to agglomerate is just that, there is nothing inevitable about it. The main gripe that Neary has with Krugman's geography is his much vaunted assumption of monopolistically competitive markets, which Neary believes is closer to the abstract construct of perfect competition than to the real world. Free entry exists, therefore a conclusion must be that costs are fixed but never sunk. As a consequence, even cities are free to move. Such a footloose facility, he finds hard to square with industrial clusters. Moreover, in these models, firms do not engage in any

⁴³ This point had been made much earlier by Young (1928), in his discerning critique of the static nature of neoclassical economics, when he said that the division of labour depends on the size of the market and the size of the market depends on the division of labour.

strategic behaviour (such as mergers and takeovers, outsourcing or other methods designed to deter potential entrants into the sector) to protect their positions. Even the scale of production is not driven by technology but is rather a product of the taste parameter that determines how substitutable goods are in consumer preferences. The more substitutable goods are in consumer preferences, the fewer varieties that will be produced and, consequently, the greater will be the median scale of production and the lower equilibrium price will be. Transport costs are intrinsic to the model, the implication being, that if they did not exist, agglomeration would result. This ignores other brakes to agglomeration, both economic and social, such as high rents, congestion and quality of life issues. Space is by and large one dimensional, most activities occur along a line or along a circle. Finally, the explanation for uneven spatial distribution of activity is primarily mono-causal, in this instance the result of a pecuniary externality. This rules out other sources of agglomeration, such as knowledge spillovers or simply quality of life issues and superior social service provision that is usually associated with urban centres.

For all his nitpicking, Neary's critique does not question mainstream economic method, rather it is with details of the model. Essentially it boils down to a belief that the monopolistically competitive model rests on flimsy I-O foundations and that, as a consequence, the theory of the firm is not sufficiently rich or insightful to capture aspects of real world production and commerce. Indeed he explicitly commends the work done by Fujita, Krugman and Venables (1999), that synthesizes the literature on economic geography that emerged in the 1990s. The basis for his commendation is that such work was based on economic methods, namely individual rational decision making and equilibrium. By contrast, Martin is extremely critical of the new economic geography, claiming that its results are not novel and that its empirical applications are trivial (Martin, 1999, p. 67). For Martin, it is the mathematical method, so central to and beloved of mainstream economics, that is the problem, since anything that cannot be expressed mathematically is assumed to be of marginal importance. This essentially relegates the role of social, cultural and institutional factors in the determination of economic activity (p. 75). For Martin, this is to exclude (or to include in a trivial way via a dummy variable

proxy) what is most important, at least if one believes that markets are socially embedded and that the broader social context is a necessary part of the story as to why industry thrives in some areas but not in others. The novel aspect of the new economic geography, namely path dependence, multiple equilibria and the notion that history matters, is also upbraided by Martin on the grounds that the history modeled is not real, path dependence is a function of initial conditions and the parameters of the model and history ends when spatial equilibrium emerges (p. 76). So while he acknowledges that history does of course matter, he maintains that the history of these economic models is metaphorical rather than real, since real history is particular, complex and open. This is why such models are unable to deal with change in any true sense, where regions may not only grow but may also decline and where lock in (in the sense of equilibrium) may occur but not necessarily irrevocably. For Martin, the limitations of new economic geography are an extension of the limitations of mainstream economics; that is to say, its idealistic philosophical underpinnings, whereby knowledge is assumed to derive from abstract deductive theorising (p. 82). In short, for economists it is tractability that drives the focus of theorising and not the social material about which they theorise. From the many comments that he has made on new trade theory and the reason for its emergence when it did, it would seem that Krugman would not disagree with Martin's view of economics. The essential difference between them is that Krugman (contrary to Martin) believes real insights into economic phenomena can be gleaned from the application of orthodox economic methods.

Of course Krugman, like most mainstream theorists, would prefer if his models were validated by empirical work. For the first twenty years of new trade theory, this was not the case, as Krugman (1998b, pp. 172-173) admitted. Kim (1995), using historical data to explain trends in regional specialisation, rejected the theoretical results of Krugman (1991), while Davis and Weinstein (1996) found no home market effect. However, when they interpreted home demand more broadly their results were more supportive (Davis and Weinstein, 1998). Neary (2001) also claimed that empirical support for the conclusions of new economic geography were weak but accepted that, at that time, it was too early to draw conclusions, since so little testing had been done. Interestingly, Neary

(2000, p. 16) underlined the curious phenomenon of the widespread acceptance of new trade theory, despite the lack of empirical testing and mixed results when such testing eventually commenced. He also drew attention to the difficulties involved in testing and how empirical models such as gravity equations can be consistent with different theories of trade. According to Deardorff (1998) gravity equations are consistent with any theory where countries specialise in different goods. This is something to bear in mind in the light of the vast explosion in empirical trade literature in the last decade (due to the availability of superior data sets) although the focus of that literature has shifted on to the issue of heterogeneous firms.⁴⁴

4.4.5 Monopolistic competition part 3: Heterogeneous firms

Monopolistic theories of trade have enjoyed a renaissance among mainstream practitioners since the publication of an influential article by Melitz (2003). The latter adapted Krugman's (1980) model of trade under monopolistic competition with increasing returns, by introducing firm productivity heterogeneity. He and subsequent theorists claimed that the motivation for this innovation was empirical research that testified to large and persistent productivity differences among firms within the same narrowly defined industry (see Bernard and Jensen, 1999). From the late 1990s, new firm level data, that was also able to distinguish the trading activities of firms, was available. The empirical studies corroborated (what doubtless was already well known to the ordinary layperson) that exporting firms tended to be larger, more skill and capital intensive, more productive and to pay higher wages than non-exporting firms in the same industry (see also, Clerides, Lach and Tybout, 1998, Aw, Chung and Roberts, 2000, Bernard, Eaton, Jensen and Kortum, 2003). According to Redding (2010, p. 4), the evidence supports the view that the more productive self-select into exporting as opposed to becoming more productive as a result of exporting.

The essence of the Melitz (2003) model is the assumption that all firms are ex ante identical but ex post different. In order to enter an industry they have to

⁴⁴ Krugman (2009) spoke of the explosion in empirical work on economic geography since 1990. This is at variance with what he claimed in 1998 and it is noteworthy that he does not cite any of the work. This is another example of the tendency within the discipline to engage in ex post rewriting of the history of the development of economic thought.

incur a sunk cost. Before entry they do not know what their productivity will be but know the distribution function from which it will be drawn. The productivity that they get after entry is a lottery and once drawn does not change. There is a lower bound productivity level and any entrant whose productivity is below this level will exit immediately. The more fortunate in the productivity lottery will make variable non-negative profits increasing in firm productivity. However, once in an industry all incumbents, however productive, face a constant and exogenous probability of death. There also exists a competitive fringe of potential entrants. Entry proceeds as long as expected profits are sufficient to cover the sunk entry costs and in equilibrium, expected net profits are zero. In order to export, firms have to incur an additional sunk cost, so the productivity threshold for entry into the export market exceeds that for entry into the domestic market. Any firm that exports will also sell in the domestic market.

Trade liberalisation changes the incentive structure for firms in an industry. Increased competition in the domestic market raises the minimum productivity threshold associated with zero profit, while at the same time lowering the (higher) productivity threshold for successful entry into the export market. The net effect is that some of the least productive firms will be squeezed out of the domestic market, others will remain but with reduced market share and profits, while the most productive firms will more than compensate for lost share in the domestic market by expanding into export markets. Trade liberalisation weeds out the weakest (in productivity terms) and rewards the strongest. The net effect of this Darwinian process is to increase industry productivity. Hence, according to this and similar general equilibrium models, there is a new source of trade gain (in addition to comparative advantage, economies of scale and product variety) and that is increased productivity from intra-industry reallocation of economic activity away from the less productive towards the more productive firms.

The most theoretically influential variant of the Melitz model is that of Bernard, Redding and Schott (2007), who developed the Melitz model in the same way that Krugman (1981), Dixit and Norman (1980) and Helpman (1981) developed

the original monopolistically competitive trade model, by incorporating it into the traditional comparative advantage story. Their world is represented by the familiar 2x2x2 model (two factors of production, two goods and two countries), where sectors differ in their relative use of factors and countries differ in their relative factor endowments. Each sector is monopolistically competitive and populated by heterogeneous firms. Within an industry, all firms have the same fixed cost but different variable costs. Trade liberalisation eliminates the weakest firms in both sectors (leading to productivity gains in both industries) but its impact is greatest in the country's comparative advantage sector. In addition to the intra-industry reallocation of resources, there is inter-industry reallocation, with the country's comparative advantage sector expanding and its comparative disadvantage sector declining. Income distribution effects of trade are also muted, in the sense that while the country's abundant factor of production will have extra gains from trade, its scarce factors will have less losses and may even gain (contrary to the original Stolper-Samuelson view). The scarce factor loses less when world markets are imperfectly competitive because trade leads to increased variety of goods and increased industry productivity. Far from weakening the case for free trade, monopolistically competitive models imply extra aggregate gains and less adverse income distribution effects than their perfectly competitive antecedents.

The new firm level data sets have also resulted in increased empirical work applying variants of the gravity equation to understand the nature of firms' trading patterns, what countries they export to and, how when they do export, their behaviour responds to changes in trade impediments and enhancers. According to Helpman, Melitz and Rubenstein (2008), the decision to export to a particular destination is a function of the fixed cost of exporting to that location. By contrast, the value of exports to a particular destination is a function of the variable costs and benefits associated with supplying goods to that particular market. A new focus is on how income and distance (standard explanatory variables in a gravity equation) impact differentially on the extensive margin of trade (new firms and new products) compared to the intensive margin of trade (higher value of sales for existing products).

For trade theorists such as Neary, this relatively recent interplay between theory and empirics has proved enormously fruitful and “is the hallmark of a genuinely scientific methodology” (Neary, 2009, p. 17). This revealing statement begs the question as to the nature of methodology in international trade research prior to this recent development? As alluded to already, trade theorising for most of the twentieth century was remarkably impervious to empirical reality. Inconvenient empirical results that challenged the predictions of theory were labelled paradoxes, and efforts were devoted to resolving the paradox as opposed to changing the theory. The claim that new trade theorising in the 1980s (with its focus on imperfect markets) was driven by empirical considerations is also open to challenge, given its timing and the exhaustion of the theoretical possibilities associated with the perfectly competitive general equilibrium model. But, one could argue late is better than never, and that this new research, informed as it is by empirical considerations, represents a quantum positive change in our understanding of the causes and effects of international trade. To evaluate whether or not this is the case, it is necessary to interrogate these new heterogeneous firm models in order to see if they do enhance our understanding of the causes and consequences of trade and, more importantly, to see what guidance they give to policy makers.

On a positive note, abandoning the representative agent model in favour of heterogeneous actors is a step in the direction of increased realism that has to be applauded. But this is as far as improved theoretical foundations go or can possibly go, given the methodological bias of mainstream theorising. Markets are still assumed to be relatively competitive with free entry by ex-ante identical firms who are infinitesimal in scale and who compete non-strategically. No reasonable account is given as to what it is that gives some firms a productive edge and permits them to be larger and more competitive. Instead the explanation supplied is that the competitive outcome is a product of chance, a lottery where, ex-ante, all firms have an equal chance of success. No learning exists in these models, so a firm’s fate is irrevocably determined (for better or worse) after it has drawn its lot in the productivity gamble. Most heroically, it is assumed that the (known) distribution of potential industry productivity will be of sufficient range to ensure that there will always exist firms at the upper end

of the productivity distribution that can compete, regardless of how competitive the market environment is in which they find themselves. Without this assumption the extra productivity gain that trade confers, as more productive firms expand and weaker firms contract or exit the industry, could not exist. No allowance is made for the very real possibility that in some countries (especially developing ones), even the most productive firms may not be able to compete in an unrestricted international market. All of these models (one sector and multi-sector) assume full employment. This is an important assumption as it implies that higher productivity at industry level must necessarily translate into higher levels of national output as a consequence of trade liberalisation. Many researchers cite empirical work showing how trade liberalisation leads to higher industry productivity as proof of the newly recognised additional gain from trade (see Pavcnik, 2002, Trefler, 2004 and Bernard, Jensen and Schott, 2006). This is disingenuous as remaining resources in a sector(s) may become more productive but output from that sector could still fall due to firms exiting the industry or contracting their activities. While the multi-sector model does allow for output to shrink in sectors where a country has a comparative disadvantage (notwithstanding the fact that its remaining resources become more productive), this contraction does not matter as it is more than compensated by the expansion of the sectors where a country has a comparative advantage (whose resources also become more competitive). In other words, the traditional assumption of full employment as well as the notion that a country's resources can always be deployed successfully in some economic activity still prevail and ensure that a country cannot lose from trade. To conclude, the latest developments in trade theory may appear more realistic but, fundamentally, the predilections of old trade theory still remain, albeit dressed up in modern garb. These predilections are no more realistic now than they ever were, which would in itself be of no consequence, if the results of this form of theorising did not help to inform policy. The problem with these simplistic models, where tractability is the guiding force driving theoretical advance (or change) is that they lead to simplistic policy conclusions at variance with the demands of open ended complex reality. As such, they are worse than useless, they are (arguably) malign in their impact.

4.5 Dynamic Trade theory.

4.5.1 *The danger and the challenge of dynamics*

Dynamic trade analysis is not without its challenges (both normatively and technically), which might explain why it took so long for it to form part of mainstream neoclassical trade theory. Neoclassical trade theory has always been resolutely static and appropriated from classical political economy the compatible static aspects of trade theory. Both Smith and Ricardo had dynamic theories of trade which, when carried to their logical conclusion (by others), sometimes invalidated their static results favouring the guaranteed universal benefits of free trade. In his explicitly dynamic analysis Smith saw no conflict between the short-run and long-run effects of trade. This was reflective of his cosmopolitan view (for which he was much criticised by List) and his sense of Enlightenment optimism. Specifically, it derived from his belief that one of the main determinants of growth was the level of physical capital accumulation, which depended on savings which he assumed were a constant fraction of national income. Ricardo, by contrast, recognised the income distribution consequences of trade policy and how such distribution could impact on capital accumulation and growth because of the different propensities to save of the different social classes. It was Findlay (1974) who drew out the negative implications of Ricardo's theory of trade for growth in predominantly agricultural countries.

The infant industry theorists (in their criticisms of the commercial policy stances of Smith, in response to whom they developed their theories) primarily based their analysis on, dynamic considerations. List also castigated Smith for the narrowness of his approach, especially his focus on physical capital as opposed to learning, skills and knowledge and the role played by social institutions in developing these. These critics of classical economic orthodoxy always acknowledged the static losses from protection (in the form of higher domestic prices and poorer quality of product) but felt that this was a price worth paying for long run prosperity and growth.⁴⁵

⁴⁵ List gave an analogy of two fathers, both of whom had equal savings which they used differently.

Normatively, any analysis that challenged the hegemony of the free-trade-is-best view of static theory was firmly outside mainstream neoclassical discourse, as was obvious from the whole discussion on the implications of economies of scale for trade policy in the 1920s. Moreover, making orthodox theory dynamic was technically challenging. Ohlin rejected the assertion that the analysis of trade contained in his 1933 book was essentially static, claiming that too much importance had been attached to his factor proportions model (Ohlin, 1967, p. 314n). While he did discuss the impact of trade on factor supplies (concluding that a positive factor supply response to increased demand counteracted international factor price equalization), he evaded the welfare implications of dynamic analysis, claiming that “since trade affects the character and number of the economic subjects, it is arbitrary and valueless to talk about the total gain from trade, much less to measure it” (Ohlin, 1967, p. 90). Besides, his legacy in terms of mainstream neoclassical trade is firmly wedded to his static factor proportions model. Haberler also cited the need for more research on the dynamic aspects of trade (Baldwin, 1982, p. 147). One can only speculate why he did not carry that agenda forward and, one possible explanation is that it was technically demanding to do so. Also, developments in neoclassical growth theory, such as the Solow growth model, were not encouraging, implying as they did the irrelevance of commercial policy to a country’s long-run steady state.

Some work was done in the 1970s that attempted to dynamise the Heckscher-Ohlin model by making capital dependent on savings (see Corden, 1971, Vanek, 1971, Johnson, 1971, Smith, 1976, 1977). The issues are summarized in Corden (1997, pp. 162-167). A constant savings rate out of national income ensures dynamic as well as static gains from trade, whereas income distribution effects could complicate the analysis, depending on the propensity to save of different groups in society. Similarly, if the level of capital accumulation depends on the

The first invested at the market rate of interest, while the second invested in the skills of his offspring. He claimed that the first acted according to a theory of values (as espoused by Smith) while the second acted according to the theory of productive powers (as espoused by him). He acknowledged that while the former may have been richer at his death than the latter, in terms of exchange values, it was not the case in terms of productive power. This is because he perceived the benefits of education to be more enduring and irreversible, thus having greater inter-generational impact. (List, 2005b, p. 28).

demand for investment goods, then the effect of trade on the relative price of the investment good will either work towards more capital accumulation (fall in the relative price of the investment good) or against it (rise in the relative price of the investment good). However, as shown by Corden (1971), even in the latter instance, one cannot assume that a higher relative price for the investment good will necessarily lead to less capital accumulation, since the negative substitution effect has to be weighed against the positive income effect. Vanek (1971) showed that the commercial regime could impact on capital accumulation if the marginal propensity to invest out of private income differed to the marginal propensity to invest out of public income. Smith (1977) however was at pains to point out that even when trade liberalisation reduced steady state consumption it could still be considered welfare enhancing in a potential Pareto sense. This is due to his interpretation of the intertemporal effects. Of course to the extent that these models are of a representative-agent type then, regardless of the intertemporal pattern of consumption, it is possible to claim they are welfare improving as long as the static gains from trade continue to hold. Likewise, one could say that as long as the short-run impact of trade on national income is positive, the government can implement optimal policies to ensure its continuance over time. Corden (1971, p. 132 and 1997, p. 166) adopts this stance in his criticism of protection, saying that even if it facilitates capital accumulation, it remains a fourth best policy.

Attempts to render the H-O model dynamic were true to the spirit of Smith and Ricardo in their focus on savings and physical capital accumulation but they remained, at best, marginal to the mainstream project. Findlay when reviewing and expanding on this model made a telling comment. “The good news, which can be announced at the outset, is that ultimately all is well and that the theory still holds when all three of the original trinity are allowed to vary endogenously in intuitively plausible ways. But we have to work hard to accomplish the extension” (Findlay, 1995, p. 36).⁴⁶ Findlay, in common with his neoclassical contemporaries, obviously felt the need to derive results that reinforced the static wisdom. This shows the constraining effect that orthodox wisdom had

⁴⁶ The original trinity being labour, land and capital.

(and still has) on the direction of research. The minimization of the potential negative welfare effects that derived from dynamic analysis can also be explained by the timing of this research. Most of it was conducted in the 1970s before the free for all that emerged in the 1980s, when researchers were much less constrained by the normative implications of departing from the static, perfectly competitive model of trade.

4.5.2 Microfoundations prevail at the cost of empirical relevance

Exogenous growth theory (as conventionally recounted with emphasis on diminishing marginal productivity of resources) suggested convergence among all economies, which was and is at variance with empirical reality. One strand of the literature that attempted to address the obvious lack of convergence between the industrialised developed economies and the unindustrialised developing economies was the dual economy literature inspired by Lewis (1954). Findlay (1980, 1981) tried to combine the Solow growth model and the Lewis dual economy model to capture the experience of developed and developing countries. In the developed North it is assumed that full employment prevails and that wages equal the marginal productivity of labour. By contrast, the South has a dual economy structure and wages in its export sector are exogenously fixed, while employment is determined by labour demand. The North exports manufactures, which are both a consumption and investment good and the South exports primary commodities, which is a consumption good only. In the North savings come from all sources of income, wages and profit alike, while in the South savings come from profit only. The only way the South can get access to investment goods is to import them, which means that it is dependent on the North's demand for its exports. The North's growth rate is internally determined by Solow-type considerations while the South's growth depends on the growth rate of the North. Findlay's model predicts growth convergence but not convergence of income per capita. Gaps in income per capita will persist indefinitely. Furthermore the dependence is one way, with the South's growth rate dependent on the economic fortunes of the North. Burgstaller and Saveedra-Rivano (1984) extended the Findlay model by allowing for international capital mobility. They assume that such flows will go from North to South but their surprising conclusion is that it will reduce income

per capita in the South. The reason for this is because Southern wages are fixed in the capital receiving sector, all profits are repatriated and the capital flow, through its impact on exports in both the North and South, will lead to a deterioration in the latter's terms of trade.

This dual economy literature was sparse and had little impact on the mainstream project, despite its attempted realism; that is to say, its appreciation of the differences in the structures and institutions of countries at different levels of development. By proceeding on the basis of an asymmetry between countries at different levels of development, it took as a starting point what neoclassical theory would traditionally have treated as endogenous. The assumption of a dual economy in developing countries might be broadly consonant with the economic reality of these countries but it departed from neoclassical fundamentals, where countries can only be permitted to differ in terms of factor endowments, technology or tastes. Allowing macroeconomic structures to be of varying types, such as Solow, Lewis, Kaleckian or Neomarxian was a new departure in mainstream theorising. This literature also produced non-orthodox results, such as failure of factor price equalisation, no international equalisation of per capita income and a recognition that trade based on static comparative advantage might be disadvantageous to catch up by developing countries (Darity and Davis, 2005, p. 142).

However this literature did not speak with one voice on whether the structural asymmetries between North and South would persist or eventually disappear and had little to say about the role government policy could play in the process (Darity, 2005, p. 154). Indeed Findlay, in the optimistic vein of neoclassical growth theorists, asserted that dualistic models may some day "be of more historical interest than contemporary interest" (Findlay, 1984, p. 222). Then Findlay was also very specific that he did not intend his North-South models to be a rival or substitute for the conventional symmetric (as far as macroeconomic structures are concerned) approach to trade. He believed that his asymmetric type modelling was a fruitful addition to the main corpus of theory, saving it from irrelevance as far as developmental issues were concerned, while at the same time "respecting the canons of rigorous enquiry that trade theorists expect

in their field” (Findlay, 1984, p. 222). His concerns with rigour may have been misplaced if posterity is anything to go by, as it has not saved this branch of the trade, growth and development literature from intellectual oblivion as far as students of trade are concerned.

4.5.3 The mainstreaming of dynamic issues: laying the foundations

As recounted in the last two sections, early attempts to address the dynamic implications of trade were tentative and did not have a major impact. This changed, in particular in the 1990s, when issues of trade and endogenous growth were finally addressed. Key to this development was the renewed acceptance of external economies of scale in tandem with the new acceptable heuristic in trade, that of imperfect markets.

As shown in section 4.3, one technical advantage of the invocation of external economies of scale was that they could be reconciled with perfect competition and price-taking behaviour. This convenient feature was exploited by researchers in the 1960s and 1970s. However, as acknowledged by Krugman, appealing to external economies as an explanation for trade patterns was not acceptable because “External economies are too vague and unmeasurable” (Krugman, 1983, p. 344). Or, as Krugman (1987b) alluded to, growth was too arbitrary in these models, since one industry was as likely as another to generate external economies. Krugman (1987c) himself developed a model of trade where dynamic increasing returns exist at the level of the industry, making industry productivity dependent on cumulative experience. The net effect was to show that initial slight competitive advantages that countries might possess in a sector get reinforced over time. So, historical accident can matter more for dynamic comparative advantage than underlying differences in national characteristics. In a similar vein, Matsuyama (1992) explained how countries relatively well-endowed with natural resources would grow more slowly than their less well-endowed trading partners, if there exists dynamic economies in manufacturing production associated with learning-by-doing.⁴⁷

⁴⁷ List had made a very similar argument 150 years earlier when he claimed that Holland was a successful country precisely because it was so disadvantaged in a natural resource sense. “Nature had conferred benefits on this small nation both by her frowns and smiles. Their perpetual contests with the

The catalyst for trade theory to evolve in a dynamic direction came from work on endogenous growth by Romer (1986) and Lucas (1988). They made growth endogenous to the economic system (notwithstanding the central role of individual optimisation) by assuming that knowledge was an input into the private production process but that knowledge (as a non-appropriable public good) had spillover effects into the social realm. For Romer, the extent of the knowledge spillover was proportionate to the aggregate level of knowledge in the economy, while for Lucas it was proportionate to the average level of human capital. The upshot of these models was an explanation of growth, though not of the unbounded kind.⁴⁸ Also scale effects are more important in Romer's world vision than in Lucas's, with large economies growing faster than smaller ones. Apart from the technical issue of reconciling optimisation with endogenous change, what Romer and Lucas achieved was a renewed focus on knowledge as the mainspring of growth, as opposed to physical capital. While imperfect markets are not a necessary accompaniment to external economies for endogenous growth to occur, their invocation restores the primacy of deliberative individual action in the explanation of growth. For example, if growth is deemed to be driven by knowledge of the disembodied kind, then markets need to be imperfect and rent-yielding in order to provide sufficient incentive for the profit-maximising producer to invest in this activity. Alternatively, when knowledge is embodied (human capital), then agents are assumed to have infinite lives or, if finiteness is accepted, then self-regarding preferences need to be supplemented with altruistic feelings towards their offspring in order to provide a motive for such investment.

inroads of the sea necessarily developed in them a spirit of enterprise, industry, and thrift while the land which they had reclaimed and protected by such indescribable exertions must have seemed to them a property to which too much care could not be devoted". (List, 2005a [1841], p. 39). However, an important distinction between List and contemporary neoclassical theorists is in the conception of the individual.

⁴⁸ Arrow (1962) had already adapted Marshallian external economies by relating them to human capital and not output. He invoked the idea of learning-by-doing (and doing more efficiently as a consequence) and claimed that the best proxy for positive spillovers was the level of human capital in an industry.

Methodologically, this new turn in the direction of dynamic theorising was acceptable because the essence of the neoclassical project had already evolved from individual optimisation in the context of perfectly competitive markets to individual optimisation in imperfect contexts. Optimisation was what now defined the project. And while optimisation and equilibrium seem to be profoundly static concepts, allowing for spillovers with positive feedback effects permitted the reconciliation of optimisation and equilibrium at the individual decision making level with endogenous growth at the system level. Also, going dynamic meant another degree of freedom as far as environmental constraints were concerned. For such an internally-driven project as international trade research, this meant increased sustenance in that it facilitated a whole raft of potentially new theoretical results. Of course, allowing the social consequences of individual actions to deviate from the private consequences weakens the presumed desirable normative effects of trade liberalisation, by making less benign welfare outcomes at least theoretically possible. But this ground had already been conceded when trade theorising removed the prop of perfectly competitive markets and, in any case, trade theorists had a ready supply of other (extra model) arguments to defend their free-trade-is-(probably)-best policy stance. Rather ironically, restoring the primacy of knowledge to the growth-generating process and, acknowledging that the social is more than the sum of the private, is akin to the arguments of Rae and List in their defence of government action to promote economic growth. However, the latter would have profoundly disagreed with the central neoclassical presumption that all explanations for economic growth must reside in individual motivation and actions as the following quote amply reveals, “It would be more correct to describe the limbs of men (the head, hands and feet) as the causes of wealth” (List, 2005b [1841], p. 25). For List, explaining the success of nations on the basis of the activities of individuals is patently insufficient, since the activities of individuals require a causal explanation and for him that must reside in social factors.

4.5.4 The mainstreaming of dynamic issues: the edifice

The research on endogenous growth bifurcated in two directions: one which focused on disembodied knowledge based on Romer (1986 and 1990) and; the

other in which knowledge is embodied in people (Lucas, 1988). Disembodied knowledge is generally conceptualized as technical innovations contained in designs (which have external effects) that result in either new intermediate goods, new differentiated final products or improved quality of products (Grossman and Helpman, 1991a, Chs.7&8, Segerstrom, Anant and Dinopolous, 1990, Rivera-Batiz and Romer, 1991, Aghion and Howitt, 1992). The motivating force for the generation of this kind of knowledge is profit and, given its inherently non-appropriable character, markets need to be imperfect in order to provide the necessary incentives for this kind of activity. With embodied knowledge, when the motivation for investment is self-interest, then model tractability requires the (heroically) simplifying assumption that agents are infinitely lived (King and Rebelo, 1990). Otherwise, for agents with a finite lifespan, utilitarian self-interest needs to be complemented with altruism where the decision maker's offspring are concerned (Becker, Murphy and Tamura, 1990). Azariadis and Drazen (1990) supply a variation on the human capital growth explanation by introducing threshold effects; that is to say, increasing returns to investment in human capital become pronounced only when economic state variables have attained a critical threshold. This can explain multiple balanced growth paths and, according to the authors, a version of their model produces growth paths that resembles Rostow's stages theory of growth.⁴⁹

One of the first to unite new trade theory and new growth theory were Grossman and Helpman. They initially drew on static monopolistic trade models which allow for intra- and inter-industry trade. Investment in research results in the production of new differentiated products and growth is a product of such investment. Nonetheless, their original forays in this direction did not give rise to endogenous change. In Grossman and Helpman (1989), there was free entry into R&D, which would only occur if profits earned on the sale of a

⁴⁹ According to the authors, Rostow (1960) did not inspire successive work on a stages theory of growth and development because "it failed to elucidate the economic mechanisms responsible for the jump from slower stages of the development path to more rapid ones in a way we would consider theoretically acceptable" (Azariadis and Drazen, 1990, p. 503n). For theoretical acceptability read the neoclassical micro foundations where all social outcomes depend on the **rational** behaviour of individual agents with given self-regarding (by and large) preferences.

new product covered the cost of its development. In their model, finite investment in R&D resulted in a net return on the new product variety of zero. However, as the returns to product development investment are assumed to be negatively related to the number of differentiated products already available (while the cost of such product development is constant), such investment eventually ceases and when it does the economy stops growing. However Romer (1990) had shown that innovation need not cease in the long run if private investment in blueprints for new goods spills over into the public stock of knowledge capital. This is sufficient to free such investment from diminishing returns. Segerstrom et al (1990) and Grossman and Helpman (1991b) got similar results when R&D resulted in better quality final goods, while for Aghion and Howitt (1992), it produced new intermediate goods that resulted in more efficient final good production.

The human capital literature explored the relationship between income per capita, family size and investment in education (see Galor and Weil, 1999, Kremer and Chan, 1999 and Morand, 1999). It was observed that, above a certain threshold of development, family size fell and investment in education rose with beneficial effects for subsequent growth. Critical proxies were seen to be income per capita, the level of inequality in a country and women's wages. The microeconomic explanation is that above a certain threshold, the opportunity cost of having children rises, leading to smaller family size and more investment in the education of existing offspring.

From a welfare perspective, trade will only be universally positive if external effects are international. If they are national, then some countries could lose. For Feenstra (1990), small countries would lose in competition with larger ones due to (national) economies of scale in research. For Galor and Mountford (2004), the country that does not specialise in manufacturing experiences a fall in the return to human capital, which has a negative demographic effect in the sense of creating incentives for larger families with lower average levels educational investment. By contrast, in Grossman and Helpman (1991a, Ch.7), international spillovers mean that technology is everywhere the same and, trade is not only universally beneficial, it also conforms to a pattern predicted by static H-O

considerations. Rivera-Batiz and Romer (1991) give two reasons why trade should be beneficial to all countries: first, international knowledge spillovers expand the productive capacity of ALL countries; and, second, the increased resources devoted to growth-generating research activities as a result of scale effects.

Of these two extremes, the idea that external effects are international appears to be the more unrealistic, not least, because the firms doing the innovating put pressure on governments to introduce an international regulatory framework that ensures that the knowledge that such research generates remains proprietary. Also, much depends on the process by which knowledge is acquired. If reverse engineering is costless, then it is sufficient simply to import products for technology to be everywhere the same. In this case the public good nature of knowledge is truly international and trade should be universally beneficial. On the other hand, if knowledge only comes from learning-by-doing, then externalities are local and production is essential to knowledge acquisition.

The most interesting literature is that which assumes that knowledge spillovers can be imperfectly international but that this is conditional on a whole array of economic, geographic, cultural and institutionally specific factors. Some of these factors may be exogenously given while others may be susceptible to change if appropriate policies are adopted. For Goodfriend and McDemott (1998), the ease of knowledge flow is a product of geography and cultural factors thus implying that trade between geographically proximate, culturally similar countries is more likely to be mutually beneficial. In a similar vein, Krugman and Venables (1995) claim that such spillovers depend on the extent to which markets are truly integrated, a more likely situation when transport costs relative to value are low. This also favours mutually beneficial trade between adjacent countries and between those countries linked with a good transport infrastructure. One could (loosely) claim that these aforementioned factors are largely given and not amenable to change. By contrast, when the enabling conditions are economic, then government policies have a role to play in ensuring that these conditions are met or in minimizing their constraining effect. So, Keller (1996) stressed that for developing countries to benefit from

trade and move on to a virtuous growth path, accompanying investment is necessary, whether that be investment in human capital or imitation technologies (or social infrastructure). Of course the problem here for many developing countries is that they lack the resources to engage in this enabling investment. This is precisely why protection might be a first as opposed to a third or fourth best policy. Tamura (1996) stressed the role played by a country's level of human capital in its capacity to absorb new technologies. For her, as for Becker and Murphy (1992), human capital acquisition (or labour specialisation decisions) is made on a cost-benefit basis and is influenced by market size, the ease of interpersonal exchange and economic organization.

This union of new trade theory and new growth theory has still to reach maturity. Another trend in growth theory has been the development of, what have been called semi-endogenous Schumpeterian growth models; that is to say, models without a scale effect.⁵⁰ By contrast with the early endogenous growth literature, some of these models suggest not just the irrelevance of size to growth-generating activities but the irrelevance of policy too. In this, they appear to be closer in spirit to the original neoclassical growth models.

Unsurprisingly (given the internally driven nature of economic theory), these attempts to dynamise trade research have not added clarity to the policy debate. So, for example, it can be shown that: trade has no impact on the relative wages of Northern workers (growth models with scale effects); that trade will raise the relative wage of Northern workers (scale invariant, endogenous Schumpeterian growth models); and that trade will lower the relative wage of Northern workers (scale invariant exogenous Schumpeterian growth models).⁵¹

⁵⁰ Jones (1995), Kortum (1997) and Segerstrom (1998) and Young (1998) suggest models where population size is not only irrelevant to steady state growth but so too is the level of research intensity in an economy, and policy has no impact on steady state growth. Dinopoulos and Thompson (1998), Aghion and Howitt (1998) and Peretto (1998) extend these models to remove the impact of population size but retain the impact of research intensity and policy on steady-state growth.

⁵¹ See Grossman and Helpman (1991c), Sener (2006) and Dinopolous and Segerstrom (2006), respectively, for an account of these varying impacts of trade on Northern relative wages.

So where does all this research effort leave us? Has dynamic trade theory finally addressed the concerns of development economists and, more importantly, illustrated the role that trade policy can play in economic development? As with static new trade theory, much depends on the specificities of the models themselves. If disembodied knowledge, that is the product of investment in research and development, is truly non-appropriable and its reach international, then trade is to the betterment of all countries regardless of where such research is conducted. If not (either because of the international legal regime or because of the nature of knowledge acquisition) then interventionist policy, including trade policy, may be the best strategy. On the other hand, if the latest wave of scale invariant endogenous Schumpeterian growth models tell a convincing story, then policy has no impact at all. The real challenge is to find a way of arbitrating between all these different accounts. Trade theory may have gone dynamic but, it is questionable how illuminating this development has been, given what it is that has driven this research. The overriding consideration is the derivation of new theoretical results based on rational optimising behaviour in different social contexts. Increasing returns and external effects facilitated the transition to dynamic analysis since optimisation could be retained. However, optimisation also constrains, quite apart from whether it is a realistic behavioural construct by which to seek to explain all economic phenomena. Recent theorising may allow markets to be imperfect and even introduce social organization but this only matters to the extent that it alters the opportunities and constraints that the rational decision maker faces. Such a conception of individual behaviour and social organization remains diametrically opposed to the ideas forwarded by infant industry theorists, despite the belated neoclassical acknowledgement of the importance of knowledge and learning. This, in part, can explain the lack of coherence of neoclassical trade theory regarding issues to do with economic development.

4.5.5 Trade, endogenous growth and old infant industry arguments

The most obvious difference between recent theoretical efforts and the ideas of the infant industry theorists is their conception of the individual. In neoclassical theory, the individual is prior and always behaves in a manner to best satisfy his/her exogenously given preferences. By contrast, the social is prior for List,

and the challenge of economic development is how to effect a qualitative shift in the attitudes and behaviour of individuals:

The publicity of the administration of justice, trial by jury, parliamentary legislation, public control of State administration, self-administration of the commonalities and municipalities, liberty of the press, liberty of association for useful purposes, impart to the citizens of constitutional states, as much as to their public functionaries, a degree of energy and power that can hardly be produced by other means (List, 2005b [1841], p. 29).

List was in favour of policies that encouraged industrialisation because he believed that individuals in industrial society were qualitatively different to how they were in agricultural society, in terms of aspirations, capacity and habits:

In a country devoted to mere raw agriculture, dullness of mind, awkwardness of body, obstinate adherence to old notions, customs, methods, and processes, want of culture, of prosperity, and of liberty prevail. The spirit of striving for a steady increase in mental and bodily acquirements, of emulation, and of liberty, characterise, on the contrary, a State devoted to manufactures and commerce (p. 96).

Moreover, cultural differences in behaviour could be explained as much by constraints and habits as by preferences and rationality. “Diligence, economy, order and forethought are at first produced by necessity afterwards by habit, and by the steady cultivation of those virtues.” (p. 114). Finally, he upbraided the classical school for its separation of politics from economics and for its failure to address the specific conditions of a nation which is why, from a policy perspective, he believed it offered so little:

We can only learn from it how in private industry, natural ability, labour and capital are combined in order to bring into exchange valuable products and the manner these latter are distributed among the human race and consumed by it. But what means are to be adopted in order to bring the natural powers belonging to any individual nation into activity and value, to raise a poor and weak nation to prosperity and power, cannot be gathered from it because the school totally ignores politics, ignores the special conditions of the nation (pp. 65-66).

Classical political economy failed to get to the root of the problem of national economic development because, among other things, it did not learn from

history or from statistics. The conception of the individual, the separation of economics and politics and the non-inductive bias of neoclassical research (and trade theory) distinguish the latter (even more than classical political economy) from infant industry theorising, notwithstanding the mutual acceptance by both schools of the importance of learning and knowledge to economic development.

All in all, neoclassical trade theorising, even in its recent dynamic form, assumes too much and too little. The method of neoclassical reasoning is restrictive, which is why it requires a relatively simple description of the environment in which the individual's decision is supposedly made. Multiple market failures and multiple choice variables make for model intractability. This might explain why, for example, advocates of free trade belatedly acknowledge the importance of social and educational expenditure (if trade liberalisation is to be successful) yet fail to incorporate fiscal constraints into their models which might limit the feasibility of their policy recommendations. Furthermore, it is either naïve or disingenuous to present as alternatives, free trade allied with efficiency enhancing social expenditure versus protectionism without the social expenditure. A more plausible scenario might be the converse; that is to say, free trade devoid of social expenditure versus protection with it. Also, even on its own terms, neoclassical theory comes up short. Utility maximisation and profit maximisation are defended as plausible accounts of how decision makers behave in the market place. Yet, such self-regarding decision makers are always presumed to behave in a law abiding fashion or to take the legal constraints of the situation as given. This ignores the reasonable conjecture that, if they can, self-regarding agents will engage in activities designed to shape the laws and institutional environment to their own advantage. Examples range from the legal to the illegal: exploiting inter-jurisdictional competition for mobile investment; political donations; and political bribery in return for economic favours. This complex reality gets ignored in mainstream theorising, as much for reasons of method as of ideology. Optimisation, with its focus on the quantitative and its predilection for unique outcomes, precludes a focus on power and requires an unrealistic description of the economic environment. For this reason, even the most recent spate of trade theorising can, at best, yield only limited insights.

4.6 Resolving the Policy Debate

Despite all the recent developments in trade research, the trade policy debate is no closer to resolution than it was in the days of classical political economy. Almost without exception, trade theorists still favour free trade, though they may bemoan the lack of innocence that this latest wave of theorising has heralded (see Krugman, 1987b, p. 132). In its policy stances neoclassical economics has shown remarkable continuity. Marshall, Pigou and Taussig are all said to have accepted the infant industry case for departing from free trade (Irwin, 1996, pp. 134-135). Yet this did not stop Marshall (in particular) from taking an unambiguous free trade policy stance when the insight and expertise of economists mattered as far as policy formation was concerned in the Tariff Reform debate of 1903. Explaining the policy conservatism of economists would make for an interesting sociological study but it is beyond the scope of this chapter. Suffice it to say that this disjunction between theory and policy serves to highlight the irrelevance of the latter to the direction of the former.

The empirical work of economists has not served to clarify the policy debate although, most economists claim that the evidence is supportive of higher growth being associated with a more liberal trade regime (see Balassa, 1978; Bhagwati, 1978; Krueger, 1978; and Papageorgiou, Michaely and Choski, 1991). The main statistical difficulties associated with such work is that of adequate proxies to measure a country's trade regime, collinearity between different policies and the problem of endogeneity. So, for example, many researchers take exports or the degree of openness of an economy to be indicative of its trade policy stance and conclude that, since higher growth in exports is positively correlated with higher growth in Gross Domestic Product, this must be a vindication of the dynamic benefits of trade liberalisation. This completely ignores the possibility that causality may run the other way: that is to say, that a higher rate of growth leads to more exports. As Rodrik (2001) anecdotally highlights, focusing on trade performance is not a clear guide to a country's trade policy as the examples of Haiti and Vietnam show starkly.

The 1990s was characterised by more sophisticated cross-country econometric analysis of the trade-growth relationship, inspired partly by better data and in part by new growth and new trade theory. Without going into details of the studies, Dollar (1992), Sachs and Warner (1995) and Edwards (1998) broadly find in favour of the growth enhancing effects of a liberal trade regime. One of the more interesting and controversial studies to emerge from this period was that of Rodriguez and Rodrik (2000) both for the nature of their study and their conclusions. They replicated the studies of the aforementioned and every time found that, with small changes in the data, the measure of trade distortion proved to be not significant. So for example, to the Dollar study, they added per capita income and level of education as explanatory variables and also updated the price series from which Dollar derived his trade distortion index. This proved sufficient to reverse the sign on the latter. Only exchange rate variability was shown to have a statistically significant negative impact on growth. When replicating the Sachs and Warner study, they replaced their dummy variable categorizing trade policy regimes with the underlying five criteria on which it was based. Only the dummy for State monopoly (which was perfectly commensurate with those African countries undergoing structural adjustment programmes) and the black market foreign exchange premium were significant. Finally with the Edwards study, of his nine measures of openness, again only exchange rate black market premium stood up after Rodriguez and Rodrik had interrogated the data.

The work done by Rodriguez and Rodrik was valuable in that it was undertaken by economists who knew the empirical tricks of the trade that can be used to get the “right” sort of statistically significant results. They showed how small adjustments, such as adding variables that could reasonably be considered causal, re-designating existing variables, weighting countries differently and/or using more up to date data, could invalidate policy orthodoxy. Furthermore, their work showed how difficult it is empirically to establish policy causality. Even as far as the one not yet disproved significant variable is concerned (exchange rate variability and black market exchange rate premia), they question its suitability as an indicator of trade distortion, claiming such

variables are more reflective of the general economic environment and macroeconomic policy considerations than of trade policy orientation. Baldwin (2000) acknowledged the validity of the Rodriguez and Rodrik empirical critique pointing to the complex interrelationship between governments' trade policy and other policies. However, in the spirit of neoclassical economic orthodoxy, he claimed that the empirical difficulties that exist are usually acknowledged by practitioners. This is the empirical equivalent of neoclassical theorists saying that unorthodox theoretical results are well recognised within the profession, usually as caveats to orthodox results. It does not typically extend to similar caution when it comes to issuing policy prescriptions, where the advice tends to be far from nuanced. The following quote from Baldwin is worth replicating because it is representative of neoclassical discourse and the seeming political naivety of the position that it embodies:

It is true developing countries are often given the policy advice that decreasing trade barriers is a more effective way of achieving higher sustainable rates of growth than tightening trade restrictions. But, especially since the Bhagwati-Krueger and Papageorgiou-Michaely-Choksi country studies, those giving such advice also emphasise the need, as a minimum, for a stable and non-discriminatory exchange-rate system and usually also the need for prudent monetary and fiscal policies and corruption-free administration of economic policies for trade liberalisation to be effective in the long-run. It seems to me that the various country studies do support this type of policy advice and that the cross-country statistical studies do not overturn this conclusion (Baldwin, 2000, p. 16).

It is not clear how compatible the call for prudent fiscal policy is with accompanying calls for social security and educational provision. In any case, the latter may not be feasible owing to the much cited (but in this instance disregarded) issue of scarce resources. As to the good governance call, it is at best a vacuous statement (akin to saying that in order to be developed you need to be developed) and at worst disingenuous, in the light of vested interests that the developed world has in accessing the markets and resources of the developing world.

4.7 Value Added of Recent Research

Trade theorising of the past thirty years has supposedly got more real as evidenced by its embrace of imperfect markets and dynamics. That claim has been contested in this chapter, whose central thesis is that theoretical developments have been internally driven by the tools that economists use. I also challenge the view, so vociferously articulated by Paul Krugman, that the use of these tools has added clarity and insight to the analysis of trade issues. Traditional neoclassical trade theory had been defined by two essential features, the optimising agent and the perfectly competitive market. Abstract deductive theorising on the equilibrium outcomes of decisions by rational representative agents within such a rigid framework must eventually exhaust all possibilities. If new theoretical insights were to be gleaned via this method, something had to give, and what yielded in this case was the environmental assumption that markets were perfectly competitive. It is noteworthy that initial deviations from the competitive construct, notably factor market imperfections and external economies of scale, were the types of environmental concessions that did least damage to the perfectly competitive market paradigm. Even monopolistic competition, which was considered such a great departure from the standard perfectly competitive model, is still a very similar market structure, insofar as competition between firms is assumed to be non-strategic and the free entry assumption means that firms earn zero economic rents. The latter was a convenient assumption as it facilitated model closure, which may go some way to explaining why this was the form of market structure chosen. Methodologically, theorising trade in monopolistic markets was a break from what had gone before because of its recourse to specific functional forms to describe technology and preferences. Theoretically it was different in its assumptions about the nature of such technology and preferences. Oligopolistic trade modelling represented greater novelty in its embrace of strategic issues and its abandonment of general equilibrium. The most obvious explanation for the failure of this research to adopt general equilibrium forms of modelling had to be tractability issues. It also proved to be a voluminous and highly diverse (theoretical) literature, which is unsurprising, since there are so many diverse ways in which firms compete but modelling requirements usually necessitate

the focus on singular strategic variables at a time. A feature of the aforementioned research (and economic geography) was the lack of empirical corroboration of a statistical kind until the last decade. Of all the theoretical developments in new trade theory, only the heterogeneous firms operating in monopolistically competitive markets can claim to have been, at least partially, inspired by empirical considerations. That said however, the restrictive nature of the theorising is such that the normative conclusions derived from it are highly questionable. A notable feature of the monopolistically competitive theories in their different guises has been the attempts to integrate them with perfectly competitive trade theory. This makes sense if one is anxious to demonstrate that old and new trade theories are complementary and not competitive. A feature of more recent dynamic trade models has been how diverse they are and the wide array of conflicting conclusions emanating from them on the presumed effects of trade on growth. Again, as with oligopolistic trade models, this is because such models are highly specific in their designation of the growth process. A comparison of neoclassical dynamic trade models and the dynamic arguments concerning trade of infant industry theorists such as List, served to highlight how their different methodological predispositions conditioned their theoretical conclusions on trade and economic development. In neoclassical trade the individual is always prior and their environment only affects their behaviour to the extent that it alters the opportunities and constraints that they face. In terms of trade models, this requires the decision maker to optimise and this methodological imperative means that even the most complex environment must, of necessity, be represented in a simplistic way. Cross-country empirical studies on trade policies and economic performance highlight how difficult it is to establish the relationship in a statistically satisfactory manner because of data, timing and endogeneity issues. But then, attempting to establish the link between policies and economic performance by engaging in cross-country regressions implicitly means that the researcher accepts the premise that the determinants of growth are everywhere the same, with countries differing only to the extent that their explanatory variables differ. Here we face another methodological article of faith of neoclassical economics, the presumed universality of human behaviour and, as a consequence, the one-size-fits-all approach to theorising.

Undoubtedly trade models have become more complex, more diverse and have given rise to more varied policy prescriptions than the monolithic perfectly competitive model of trade. The intellectual effort has been huge. The question that requires answering is whether it has been worth it? It is my contention that all this effort has been of questionable value because of the commitment of neoclassical economists to methodological individualism of the optimising variety. If relevant aspects of reality cannot be modelled they are excluded. More narrowly, the commitment to mathematical optimisation (which despite recent developments on the frontiers of psychology and economics still remains the dominant heuristic in economic research in general and trade research in particular) requires an overly restrictive description of the economic environment. This is true notwithstanding the attempted moves towards more realistic market descriptions that the abandonment of perfect competition represented. More pertinently, it is a questionable portrayal of the behaviour of individuals in complex environments, where cognitive limitations are more likely to bind and individuality to have more force. In addition, the exclusive focus on the quantitative that optimisation requires means that the roles of power and conflict in determining outcomes is neglected. This is an important lacuna in contemporary theorising, especially in today's economic environment. Finally, the methodologically individualistic foundations that underpin the neoclassical project distract from the proper questions that theorists should be asking. Scarcity and opportunity cost are important concepts, but from the perspective of economic (and trade) policy, where they really matter is at the central political level (where the command over resources is greatest), not at the level of the individual.

Chapter 5. Conclusion

5.1 What has been done and why?

This thesis has attempted to evaluate critically the evolution of international trade theory from its roots in classical political economy to its current neoclassical expression. The primary objective of the exercise was to use international trade theory as the template through which the apparatus and commitments of neoclassical economics could be interrogated. By apparatus is meant the tools of theoretical and empirical investigation and by commitments is intended the constructs that underpin the application of these tools, and the factors that have led to changes in research heuristics. The standard against which research has been evaluated is its ability to enhance understanding of economic phenomena and to act as an aid to policymaking.⁵² Trade theory was chosen as it had a number of distinctive characteristics which rendered it uniquely suitable for this exercise. First, there appears to be remarkable continuity between the classical political economy explanations of international trade and its neoclassical successors, in the form of the comparative advantage theory of international trade. Second, there emerged what seemed to be a new heuristic in international trade theorising in the 1980s with the abandonment of the construct of perfectly competitive product markets. Third, most research in this domain was characterised by a distinct lack of empirical engagement until this millennium. Fourth, there has been an upsurge in empirical work over the last decade. So, international trade theory has, superficially at any rate, exhibited both continuity and change and has done so most of the time without much by way of feedback or input from empirical studies, but that too has altered in recent times. All of these twists and turns in terms of method would appear to give *prime facie* support to the assertion that the apparatus and commitments of neoclassical economics, at least in this domain of application,

⁵² The approach taken in this thesis was narrow and subjective, to the extent that it depended on my evaluation of the adequacy of international trade theory in the light of economic reality. Another approach would have been to evaluate trade theory in terms of a broader methodological framework of scientific development, such as Thomas Kuhn's idea of paradigms and paradigm shifts or Imre Lakatos's notion of progressive and degenerate research programmes. Such an approach was beyond the scope of this work but remains a potential area of future investigation.

has been supportive of progress.⁵³ Finally, the much cited status of international trade among economic practitioners was another reason to investigate the potential reasons for such eminence and to deduce what this tells us about economics as a discipline.

5.2 How has the Exercise been Conducted?

My approach was to return to the primary material of both classical and neoclassical writers as well as that of their critics. While this may seem an obvious and innocuous exercise, it proved to be a very revealing one in the sense of discovering just how nuanced were the views of early adherents to liberal trade theory, in both classical and neoclassical guises. Contemporary textbook accounts of the contributions of classical economists to international trade theory tend to be both uni-dimensional and Whiggish, in the sense of selecting what is useful in classical theory and presenting it as a forerunner to subsequent more developed neoclassical formulations. As far as early neoclassical contributions are concerned, any heretical caveats, that might limit or otherwise qualify the benign policy conclusions of orthodox theory, do not feature either in international economics textbooks or in general histories of thought. Interestingly, they did feature in the iconic texts written in the 1930s by Haberler, Ohlin and Viner. More recent studies of the history of international trade theory by Irwin (1996), Maneschi (1998) and Gomes (2003) do address the contributions (heretical and otherwise) of early neoclassical writers, but their interpretations of the meaning and value of such contributions differ from mine. This divergence is particularly stark where the critics of liberal trade policy are concerned (as outlined in chapter 3). That texts and writings can give rise to

⁵³ Adherents to this view more generally, include baseline guardians such as Backhouse who, while acknowledging the lacuna as far as empirical progress is concerned, nevertheless applauds the rigour of neoclassical economics and asserts that it contains internal forces for change, all of which have combined to yield theoretical progress (Backhouse, 2000, pp. 152-154). Colander, Holt and Rosser are more robust in their defence of mainstream economics, claiming that its commitment to model building is what defines it, but that it is sufficiently eclectic to have at its vanguard cutting edge critics, who, while embracing heterodox ideas, still remaining faithful to the methods that define the mainstream (Colander et al, 2004, 2010). Unsurprisingly, in such a Candidean world, progress is to be expected. A much cited exponent of such cutting edge practices is Krugman, who offers as a defence of modelling (apart from its rigour) its success, one that he acknowledged might be surprising in view of the usually crude principles on which such models are based (Krugman, 1995, p. 77).

such varying interpretations highlights the pedagogical importance of including such readings in academic curricula, as opposed to accepting partial, third-hand versions of the presumed contribution of these writers.

This thesis has also interrogated the more recent development in international trade theory (since the 1950s) in a much more detailed way than is to be found in the historical accounts of Irwin, Maneschi and Gomes or in contemporary textbooks. For example, the literature on domestic factor market distortions and external economies of scale (which overlapped with the refinement of the general equilibrium model of trade) tends to be neglected in most textbooks and received only limited cursory treatment by Irwin et al. My explanation for this disregard is that the heuristic in theoretical research changed so dramatically with the focus on imperfectly competitive product markets, that it effectively obliterated a contribution that had, in any case, always been marginal to the mainstream project. Yet, in order to understand why trade theory evolved as it did, it is necessary to speculate on why these early departures from the perfectly competitive market construct were acceptable at that time, while others, such as imperfectly competitive product markets, were not. Additionally, my synthesis of new trade theory and understanding of its contribution, in addition to my interpretation of the relative popularity of different sub-themes within this literature, is also at variance with current mainstream expositions.

5.3 Findings

(i) The writings of classical forbears of comparative advantage do not contain a uniform message as far as trade liberalisation is concerned.

While Smith, Ricardo and Mill may have advocated free trade as the best policy for Britain at the time they were writing, other elements of their writings cast doubt on the view that such a policy stance was universally applicable to all countries. This has already been alluded to in the case of Smith by Magnusson (2004, p. 155) who mentioned that a doctrinaire free trade reading is just one interpretation of Smith, citing nineteenth century American economic writers who favoured protection of manufactures and yet considered Smith to be an

intellectual forefather. Furthermore, Smith's vent-for-surplus argument caused great consternation because of its mercantilist overtones. With the notable exception of Magnusson, historians of trade have either: ignored the vent-for-surplus argument; dismissed it as a theoretical aberration; or treated it as part of his productivity theory on the benefits of market widening. The implication of Ricardo's dynamic trade theory, whereby repeal of the Corn Laws in Britain was expected to lead to increased profit and investment, thus complementing the static gains from trade with dynamic ones, is never alluded to in international economic textbooks. This may be because it highlights how the dynamic effects of trade liberalisation depend on the structure of the economy. As shown in this thesis, the cautionary implications of trade liberalisation for a country with a static advantage in agricultural production have not been highlighted by historians of trade. Omitting to stress how Ricardo's dynamic theory of trade can qualify or enhance his static theory of comparative advantage is an important lacuna, especially as the static theory of comparative advantage has been paraded as an exemplar for the scientific insights of economic theorising. Part of its appeal undoubtedly lies in the presumption of universal applicability, regardless of a country's economic structure. Any qualification to such universalising claims can only serve to underline that, if economics is a science, it is not one in the image of the natural sciences. Mill's endorsement of the infant industry case for protection aroused similar disquiet to the less well-mentioned views of his predecessors. Irwin, Maneschi and Gomes all make reference to this cited exception to the virtues of free trade but each is at pains to highlight that Mill later recanted or otherwise regretted his earlier support, on the grounds of its potential for abuse. Maneschi (1998, p. 121) adds that it is only in recent times that rigorous criteria for its application have been provided, the implication being that it was a not very well thought out rationale.

(ii) The mixed messages of classical economic theorising can be attributed to their ontological awareness.

In other words, they were all practical free traders as far as Britain was concerned, because their social awareness led them to the view that such a

policy stance was the most appropriate for the country at the time they were writing.

(iii) Early neoclassical writers were also ontologically aware.

Evidence lies in the various qualifications to the free trade argument provided by Sidgwick, Nicholson and Bickerdike. Even Marshall and Pigou accepted the infant industry exception to free trade but considered it unsuitable for an advanced industrialised country like Britain. This did not stop the aforementioned (Sidgwick excepted as he was deceased) from signing the Free Trade Manifesto in 1903. The manifesto, among other things, asserted that the tariff reform proposals were contrary to the doctrine of economic science. It is not unreasonable to speculate that the reasons for such a public stance by economists on an issue of policy importance were probably twofold: first, they genuinely believed that the proposals were not in Britain's interest; and, second, they wished to invoke the authority of the economist and promote the view that they were purveyors of an impartial science. In addition, the authority and influence of Marshall, as well as his ambitions for his chosen subject, should not be discounted when considering such postures by these economists.

The writings and policy stances of European writers on trade matters seem diametrically opposed to those of the British economists. In their theoretical work, Barone and Pareto developed the tools whose application showed the benefits of trade liberalisation. Nevertheless, they remained agnostic on the issue for reasons rooted in an awareness of social reality. Barone emphasised the frictions and uncertainty inherent in dynamic economic processes, while Pareto stressed the indirect effects of policy and how they could impact on wealth creation. What united all of these economists (British and otherwise) in their diverse policy stances on trade liberalisation was their sense of social actuality.

(iv) The development of the tools of neoclassical economics resulted in a loss of ontological awareness.

This process started in the 1930s and reached its acme when trade was subsumed as part of general equilibrium analysis. The hard core of neoclassical theorising was symbolised by optimising representative agents with well-behaved utility and production functions, whose decisions were coordinated in perfectly competitive markets. While the determinants of comparative advantage remained one heuristic, the predominant one was that led by Samuelson, which was the rigorous articulation and generalisation of the conditions governing the existence, uniqueness and stability of competitive equilibrium. In Samuelson's hands, Ohlin's interdependence theory of pricing (which integrated product and factor markets into trade theory) acquired significance unconnected with its accuracy as a description of real world trade flows (De Marchi, 1976, p. 112). Equally significant was the response to Leontief's practical attempt to test the H-O theory of trade. His disconfirming results had no impact on the predominant comparative advantage explanation of trade flows but, instead, led to numerous refinements of measurement and the re-categorisation of variables. The virtual world of trade theory appeared to have very limited connection with its real world counterpart. While this virtual world was one that was still supportive of free trade, policy issues were now of secondary importance. Testament to the less important status of policy for theorists was Chipman's refusal to discuss how trade could conceivably make a country worse off (when external economies of scale result in multiple equilibria), on the spurious grounds that it was a "problem in welfare economics" (Chipman, 1965, p. 749).

(v) The arguments for protection were not defeated either analytically or empirically.

I would challenge vigorously Irwin's assertion to the contrary. Rather, I would suggest that various arguments justifying protection were disingenuously sidelined by a variety of stratagems, which included, inter alia, appeals to the metaphysical commitments of neoclassical theory and, in some instances,

outright misrepresentation of the case as originally presented. Indeed, how the mainstream responded to these arguments is revealing of the commitments and limitations of neoclassical theory. The employment argument for trade protection, as implicitly articulated by Cournot, is generally not known, despite the widespread use of his tools. Schuller's empirically-based appeal for protection was dismissed on the grounds that prolonged unemployment was inconsistent with rational behaviour. Similarly, idle material or natural resources were rationalised on efficiency grounds. The invocation of rationality as a defence against apparent empirical reality shows that it remains a core metaphysical commitment of the neoclassical programme. When involuntary unemployment as an empirical phenomenon was rendered respectable by Keynes, it still had no bearing on trade theory, as it was deemed a problem best tackled with macroeconomic tools. What could no longer be ignored could be sidelined, thanks to increasing specialisation within the discipline of economics.

Graham's "economies of scale" argument for protection was challenged on the basis of its incompatibility with perfect competition, unless such economies were external in nature. The possibility that this might be the case was dismissed on the grounds of lack of empirical support. In this instance, another inviolable construct (perfect competition) was invoked to browbeat protectionist upstarts and the abstract deductive method of making the case was held up as being insufficient to clinch the argument. The incongruity of the latter accusation, given the nature of mainstream theorising, appeared lost on its accusers. The starting point for Manoilescu's protectionist thesis was the empirical reality of heterogeneous productivity across sectors of the economy. He made the case for policy activism in order to expand those sectors where resources could be most productively deployed. Yet, his argument as originally expressed seems to be not well-known. All writers instead claim his case for protection rests on the existence of non-compensating inter-industry wage differentials for mobile, homogenous labour, and proceed to question each of these elements; that is to say, are nominal wage differences real wage differences, are wage differences of a compensatory nature (though how one could prove this is another issue) and how identical is labour? This is a misrepresentation of Manoilescu's thesis, which never alluded to wage

differentials. I attribute this misrepresentation to Ohlin's (1931) response to, and qualified re-interpretation of, the argument. That such a canard was repeated in even stronger form clearly illustrates the dangers of confining knowledge of arguments to secondary sources. The disservice done to Manoilescu's thesis is all the more acute in the light of its empirical foundations.

The most pertinent arguments against free trade are those based on the infant industry thesis. The exponents of this view all wrote before the emergence of neoclassical economics. As a thesis, its foundations are dynamic, in that the expected benefits are in the future. Despite a qualified acceptance of this being an exception to the free trade is best case, it had no impact on neoclassical trade theorising for the first half of the twentieth century. This is unsurprising given the static nature of neoclassical trade theory. When it was resurrected by Meade (1955) and elaborated by Kemp (1960) and Baldwin (1969), it was as a certain type(s) of market imperfection. Baldwin, in particular, illustrated the futility of providing trade protection when the acceptable forms of imperfections exist. Baldwin's article was considered the definitive knock-out blow against this one theoretically embarrassing exception to the free trade doctrine. By the 1980s, trade liberalisation had become part of the policy tool-kit of the World Bank and unsuccessful protectionist regimes were cited as proof that such policies had failed to deliver the economic goods. The infant industry argument had been analytically defeated (as Irwin would say) or rigorous criteria for its invocation as a justification for protection were finally provided (Maneschi, 1998, p. 121), and found to be extremely limited in scope. Reducing the infant industry thesis to a certain kind of market imperfection is a blatant example of neoclassical reductionism and bears limited resemblance to the arguments as expressed by Hamilton, Rae and List. It did not occur to Baldwin to question the neoclassical construct of the independent, omniscient decision maker, who can correctly evaluate the payback to all potential decisions. In Baldwin's world, the organisation of firms is always optimal and the benefits from learning are always knowable in advance. This reinterpretation of the infant industry thesis, with its presumption that behaviour is always optimal, is a travesty of the arguments put forward by Hamilton and especially Rae and List. Rae, for example, attributed the theoretical shortcoming of Smith's system to its

methodologically individualistic foundations. For List, one could only understand individual preferences and behaviour by appreciating how they were shaped by social, political and institutional forces. The decision maker as envisaged by Hamilton, Rae and List is certainly not the asocial, omniscient, rational maximiser of neoclassical theory. Their arguments have not been fairly or correctly appraised, probably because it is not part of mainstream scholarship to read historical works other than for confirmation. The cost of this collective neglect, allied with a seeming unquestioning adherence to certain tools of theoretical investigation (in this case, optimisation) leads to an all too easy dismissal of important and valid theses. When such blinkered vision is compounded by a lack of empirical awareness, it should come as no surprise that the record of economic analysis, in particular in the policy sphere, has been so unsuccessful.

(vi) New trade theory was not primarily motivated by ontological considerations.

Trade theorising in imperfect markets was undoubtedly a new departure in international trade research, to the extent that the previous era of narrowing was now succeeded by an era of broadening, as far as a description of the economic environment is concerned. It was also capable of rationalising the phenomenon of intra-industry trade between similarly endowed countries. However, I would dispute that the motivation for such a change came from the empirical inadequacies of the various comparative advantage stories. Rather, I would suggest that the nature of mainstream theory was such that it had reached the end of the line. Deducing new conclusions from the behaviour of hyper-rational agents operating in perfectly competitive, frictionless markets reached a natural terminal point. Besides, the empirical inadequacies of mainstream theory had been exposed a quarter of a century before this new heuristic in trade theorising emerged as a central part of mainstream research. While comparative advantage was being absorbed into the general equilibrium project (with all the narrowing that this implied), considerations of empirical adequacy were not sufficient to derail the project.

Apart from the issue of timing, it is also interesting to note the sequencing of permissible market imperfections. The first permissible types of market imperfections were in factor, not product, markets. Factor market imperfections may not have been central to neoclassical trade theory, but neither were they beyond the theoretical pale. Arguably, this may have been because it was relatively easy to integrate them into mainstream analysis. Perfectly competitive product markets and generally specified production and utility functions could be preserved. Even the strong policy conclusion that free trade equilibrium is superior (in an efficiency sense) to equilibrium under some kind of protectionism, was effectively immunised, since at best, protection might be a third best policy, but was trumped by other factor market correcting interventions. Likewise, external economies of scale, while technically challenging, still had the advantage of leaving relatively untouched the core apparatus of competitive markets, general functional forms (although allowance had to be made for such economies) and optimising agents. The concession was that it led to multiple equilibria, which have uncomfortable normative implications for the free trade is unambiguously best view of the world. However, this did not appear to be the main focus of research energy. Instead, much energy was devoted to deriving new theoretical results; that is to say, seeing how it modified the core theorems (Stolper-Samuelson and Rybczynski) associated with the main model of trade, as well as its implications for the shape of the production possibility frontier. Arguably, the aforementioned market imperfections were the first to be acceptable because they did minimal damage to, or simply most readily built upon, the core apparatus of neoclassical trade theory.

The admission of imperfect product markets into international trade theory was a rupture with what had gone before. The commitment of mainstream theorising up to this point had been to optimisation, general functional forms and perfectly competitive general equilibrium. Now, general functions forms were dispensed with, price-taking was no longer assumed, even general equilibrium was no longer a necessary framework for some category of models, and every kind of conceivable external effect was permitted. What is more, depending on the model, trade intervention could, in some instances, be deemed superior to free

trade. Part of the core of the apparatus of traditional neoclassical international trade theory looked as if it had been unambiguously violated. Yet this surrender was at best partial, given that it led to a renaissance in trade theory, at a time when it seemed a finished structure with nothing interesting left to do. Tellingly, new trade theory was as empirically immune as old trade theory (at least until this millennium), so the driving force for change was probably internal. The new heuristic yielded an incredibly rich (quantitatively) harvest of new theoretical results. It also retained part of its traditional core commitment; that is to say, optimisation and equilibrium. When Krugman defends the neoclassical predilections for constructing models as a means of gaining insight into economic and social processes, he is explicitly referring to the equilibrium outcome of rational decision making of a maximising variety. A quick perusal of articles published in recent editions of the *Journal of International Economics* will reveal that utility functions, maximising behaviour and equilibrium outcomes are still very much standard fare in contemporary neoclassical trade scholarship. The key question is whether this form of theorising has proven more insightful than traditional theory and whether the quantitatively enormous output of new theoretical results has aided policy in a socially constructive way?

(vii) Trade theory has become more fragmented rather than pluralistic.

Pluralism in theorising is to be commended, especially if it leads to a more encompassing account of economic phenomena. New trade theory has, in some manifestations (monopolistic competition), been successfully integrated with comparative advantage. It is debatable whether such unity is ontic as opposed to derivational. While it must be acknowledged that the latter unification can explain both inter-industry trade between very different countries and intra-industry trade between similar countries, the imperfectly competitive models used in such cases of unification are of questionable realism. Full employment, low barriers to entry, parametric demand and zero economic rent are still de rigueur in such models. In addition they are supplemented by a plethora of oligopolistic and dynamic trade models. What is blatantly obvious from these models is that the impact of trade liberalisation (or trade intervention) depends

on the specification of the model. The sheer diffusion and heterogeneity of these models makes it all but impossible to derive useful generalisation about the consequences of international trade and the role of trade policy. The monolithic virtual world of perfectly competitive, general equilibrium trade theory has been replaced by a diffusion of models. The uniform policy conclusions of the former world have been replaced (logically) by a world where any variety of conceivable policies (including liberal trade policy) could be efficiency enhancing. Theorising has moved from one extreme to another, but neither extreme has led to useful abstraction in the sense of allowing us to make generalisations that would be of service to policy makers. This may partially explain why most economists engaged in this kind of international trade research continue to defend free trade as the best policy stance in such a confusing, multi-model world. If one subscribes to the view expressed by Hutchison (1994, p. 284), that the overriding aim for the subject should be real world policy relevance, or even the more modest aim of “damage limitation” in the sense of avoiding serious politico-economic catastrophe (p. 292), this new heuristic in trade theorising has been of questionable usefulness as far as important trade policy considerations are concerned.

(viii) The recent empirical turn in trade research has not led to improved insights on important normative trade policy issues

This view directly contradicts mainstream theorists, like Neary, for whom the recent interplay between theory and empirics has proved enormously fruitful. In support of my position, I refer to the substantive content of a recent review article on the gains from trade published in the *Journal of Economic Perspectives* by two of the leading exponents of “cutting edge research” in this field, namely Melitz and Trefler (2012). Apart from the traditional comparative advantage gains from trade, the other categories of gains that the authors enumerate are: increased product variety and economies of scale; productivity gains within industries due to resource shifting from low productivity to high productivity firms; and productivity gains at firm level due to increased innovation induced by trade enlarged markets. The supportive empirical literature on such gains related primarily to the impact on Canada of the

Canada-USA trade agreement and the effect on the productivity of Argentinean firms of the Latin American regional trade agreement, Mercosur. In addition, the authors cite work by Balistreri, Hillbery and Rutherford (2011) on the impact of adding firm heterogeneity to standard computable equilibrium models of trade, showing that it “raises the gains from trade liberalization by a multiple of four” (Melitz and Trefler, 2012, p. 114). For them “Empirical confirmation of the gains predicted by models with heterogeneous firms represents one of the truly significant advances in the field of international economics” (p. 114).

What I find striking about this review article is not just its failure to articulate the possibility of resources being reallocated into unemployment, but the selective use of empirical studies. The theoretical part of this research, on the effects of trade when firms in an industry are heterogeneous, assumes that there are always firms at the upper end of the productivity spectrum with the technological capacity to expand and flourish in a more competitive trading environment. Also, assuming that the economic consequences of trade integration for a developed country like Canada are indicative of what might happen to a developing country that integrates into the global economy, is naïve at best and dishonest at worst. Even selecting Argentina is questionable, given that the institutional context was regional integration with countries at similar or lower levels of economic development. Finally, to cite without caveat the evidence from computable general equilibrium (CGE) models brings the practices of economists into disrepute. A built-in assumption of these CGE models is constant employment. So the possibility of trade-induced damaging resource reallocation cannot occur in the virtual world that these supposedly applied models represent. Such practices are even more misleading than abstract model building because they purport to have a closer resemblance to the real world and to be measuring the economic impact of policy. For all of these reasons, I would question just how “fruitful” in a policy relevant way, is the latest wave of research. Its fruitfulness, in a theoretical sense, is the scope that it gives to derive new results of questionable relevance.

(ix) The idealising assumptions that underpin old, new and new-new trade theory render them of limited usefulness when it comes to policy.

Common to most of these trade models are the assumptions of constant (or full) employment and balanced trade. Unemployment can only be admitted as a consequence of a domestic factor market distortion. Applied work informed by these models needs to be viewed with a healthy dose of scepticism, since it either assumes away inconvenient aspects of reality or it acts as if rectification is possible. For example, the traditional theory of comparative advantage (regardless of its presumed determinants) is meant to reflect the best use of a country's resources, which it is assumed will prevail if markets operate under utopian conditions of perfect competition, full employment and balanced trade. So, agencies (like the World Bank) charged with the task of prediction have tried, in the past, to identify a country's comparative advantage in a second best imperfect world, by acting as if they could correct for such imperfections. Domestic Resource Cost (DRC) methods are the applied equivalent of a comparative advantage world, where all resources are valued at their true shadow or social values, the latter being those values that it is presumed would pertain if markets were perfect, employment constant and trade balanced. Measuring trade gains, when markets are imperfect, means putting a value on diversity, allowing for cost reductions as a result of expected scale effects and, latterly, allowing for productivity gains from restructuring within industries. As mentioned in the previous section, efficiency losses in such a world are unlikely, as these models do not generally make allowances for employment losses or the consequences of balance of payments imbalances.

(x) Orthodox trade theory is challenged to understand the forces that make for change in a dynamic world

This is obvious from a recent review by Hanson (2012) of changing international trade patterns associated with the integration of low and middle income countries into the global economy. While his analysis appears sensible in terms of the correlation between the structure and composition of trade and the level of economic development of a country, it is fundamentally a static

analysis that, according to his reasoning, conforms to the edicts of comparative advantage. Low income countries export agricultural goods, raw materials and labour-intensive products. Middle income countries import capital-intensive products, which are also the exports of high income countries. Economic development is associated with a changing pattern of international trade. Hanson's snapshot pictures of trade for middle income countries at two periods in time (1994 and 2008) are testament to this reality.

But, this does not tell us how a country moves up the development ladder and starts exporting more advanced products. Hanson's explanation for the changing pattern of trade focuses on factor endowments (accumulation of physical and human capital) and technological progress, as reflected in increased productivity. While there may be little dispute that the production and export of more advanced products is correlated with greater technological capacity and greater abundance of certain types of resources, this tells us nothing about causality. Neoclassical economists, viewing the world through their various comparative advantage lenses, assume that true and persistent causes must run from resources and technological capacity to output and trade structure. Indeed, they worry about efficiency costs when policymakers interfere with market processes by trying to bias the production structure towards higher value added goods. When case histories point to the role of government intervention and protection in a country's economic development, they dispute the evidence and assert that it may be a case of pseudo-infant industries, since the country's endowment base and technological capability were sufficient to explain that type of production and trade in any case.

For neoclassical economists, recognising the role of the State and the role of protection in facilitating learning and the acquisition of relevant technological capability would require a gestalt shift of an order that would undermine what is left of the neoclassical apparatus. Just how big the divide is between orthodox economists wedded to a static view of the world, where all outcomes are determined by the optimal decisions of rational agents in a world of resource scarcity, and their historically and empirically oriented critics, was obvious from a debate between the then Chief Economist of the World Bank, Justin Lin

and the Cambridge economist Ha-Joon Chang in 2009. For Lin “the optimal industrial structure is *endogenous* to the country’s endowment structure ... Upgrading the industrial structure first requires upgrading the endowment structure, or else the resulting industrial structure will become a drag on development” (Lin, 2009, pp. 485-486). By contrast Chang asserts that “factor accumulation does not happen as an abstract process ... capital is accumulated in concrete form ... and technological capabilities are accumulated through concrete production experiences” (Chang, 2009, pp. 490-491). These are diametrically opposing views of what is exogenous and endogenous, even as Chang acknowledges that a country cannot deviate too far from a production structure dictated by resources and technological capability. Such opposing world views derive from contrasting beliefs as to the nature of the world and the behaviour of decision makers. Chang’s case for infant industry protection (among other policy measures) seems to me to be a case of improving the odds as far as developing technological capability is concerned. He explicitly denies that the benefits and costs of such policies are amenable to an ex ante cost benefit study to see if they pass the “Mill-Bastable” test. The *raison d’être* behind this stance is that decision makers have “bounded rationality” and the world is characterised by “fundamental uncertainty” (p. 491). Obviously, optimisation does not make sense as a description of behaviour unless outcomes are in some sense knowable or, at the very least, probabilities can be attached to them. I cannot say whether or not neoclassical economists truly believe that this is a sufficient description of the world and of the cognitive capacities of decision makers or whether their commitment to optimisation is simply a conservative reflex action, in that this is all they know. It may even be possible to develop alternative mathematical ways of theorising about social reality. To the best of my knowledge, this is yet to happen in international trade theory. If it does happen, then nothing will remain of the original neoclassical paradigm and, if it were to happen, it would indeed qualify for the designation paradigm shift. On the other hand, there may not be an alternative mathematics that has the appealing tractable character of calculus and the alternative to the current mode of theorising may be to theorise in a non-mathematical way. One should not underestimate the resistance that there would be to such a development.

(xi) Orthodox trade theory is inadequate to the task of dealing with power in economic relations

Those development economists who theorised about trade and economic development did not do so mathematically. One plausible reason could have been their awareness of the constraining effect of mathematically expressed theory and its unsuitability as a mechanism of investigation into the challenges of economic development. Singer (1975, p. 378) spoke of economic development in terms of the power to develop new technology and alluded to the cumulative processes at work where such forces are concerned. This power he believed led to unequal bargaining relations between developed and developing countries with obvious consequences for the distribution of benefits from **all relations** between such countries (p. 379).

Neoclassical theory is not equipped to deal with power in economic relations. A party to an exchange is presumed to have done well if they earn more than their opportunity cost. Neoclassical theory designates this as economic rent, the implication being that one has earned more than was strictly necessary. But, opportunity cost is a static concept. What is of real interest in determining the consequences of trade and exchange are the determinants of opportunity cost. Those who do best from voluntary exchange are not necessarily those who earn economic rent, but those who have positioned themselves to have a high opportunity cost before engaging in exchange. Neoclassical theory does not equip us to address such a shifting of the opportunity cost goalposts.

(xii) Orthodox trade theory reflects the broader malaise of mainstream economic theory

Myrdal's critique of mainstream economics in the field of international trade and economic development was that it was not adequate to the facts. This he attributed to the predilections of mainstream neoclassical theory, namely equilibrium and the artificial separation of the social from the economic. For him, the social and economic interact in such a way that many economic processes, especially relations between less and more developed countries, tend

to be cumulative in nature. The idea of using shadow prices to put a true value on resources and economic activity would not have made sense to him, not just because perfectly competitive markets are a chimera, but because all prices are reflective of the underlying social and political reality. Rules, rights and the distribution of resources will impact on market prices, whether those markets are characterised by market power or its absence. That is why economic theory needs to be recast as social theory if it is to be useful as an aid to understanding economic processes, and such a remoulding is probably not amenable to mathematical formalism alone.

5.4 Has Economic Science exhibited Progress?

Progress implies better understanding of economic processes. Progress should, at a minimum, mean less unsuccessful policymaking. While contemporary economic reality may be undoubtedly more complex than previously, it is debatable that the obvious policy failures of recent decades are solely attributable to such complexity. Some blame must be attributed to economists and the abject failure of their methods of investigation. In the sphere of economic development, the least successful countries in recent decades have been those compelled to follow questionable practices imposed on them by so-called economically literate organisations such as the IMF and World Bank. Conversely, the faster growing economies have not trusted their economic fortunes to the unregulated dictates of the market, but have consciously directed resources and economic activity. Developed countries have been characterised by growing economic inequality in the last forty years, which is either a failure of policy or hidden malign design. Finally the current global economic crisis that has been caused by a global financial crisis is testament to economists' and regulators' worship at the feet of false economic models. Even the former chairman of the Federal Reserve, Alan Greenspan, was forced to admit that his previous world view on the efficient and self-correcting nature of markets was wrong. In his testimony before Congress on 23 October 2008, Greenspan acknowledged "I have found a flaw ... a flaw in the model that I perceived is the critical functioning structure that defines how the world works" (PBS NEWSHOUR, 2008).

5.5 Why has Economic Research been so Unsuccessful?

The policy failures are all the more perplexing in view of improved data sources and enhanced computing power. Gillian Tett in her acclaimed *Fools Gold* spoke of her Eureka moment, when attending a conference on credit derivatives during the halcyon days of early 2005. What she observed was that “finance was presented as an abstract mathematical game that took place in cyber space, and which could only be grasped by a tiny elite. Finance was not about grubby cash, but a string of mathematical equations” (Tett, 2009, p. xii). Moreover, using her anthropological hat, she observed the structural function of such conferences; that is to say, how they “reinforced the dominant ideology – or cognitive map – that united the group” (p. xii), which was that “it was perfectly valid to discuss money in abstract, mathematical, ultra-complex terms, without any reference to tangible human beings” (pp. xii-xiii). Tett’s observation of the behaviour of the mathematical architects of financial derivatives and their fascination with the elegance of the virtual worlds they were describing in their power-point presentations, are testament to Marshall’s fear of the consequences of the excessive use of mathematics and its impact on the minds of its users. Such a fascination might not have had such malign social consequences if there had been sufficient oversight, but that was lacking too. While economic self-interest might go some way to explaining the lack of oversight, one cannot discount the role played by insufficient understanding of how the models worked and their resemblance, or lack of them, to real economic processes.

This parable raises two issues about mathematical formalisation of economic and social processes. First, how appropriate is it to theorise in this manner when the material of such abstraction is human behaviour and economic and social systems? Second, the esoteric nature of the language makes it comprehensible only to the initiated and this leads to a lack of suitable social control. Only those trained in the methods of economics understand what it is that economists are doing and why they are doing it. In many instances, the critical faculties of economists have been dulled by virtue of their training, quite apart from the sociological costs that a dissenter could expect to pay. For Hutchison, “producer

sovereignty” reigns in academic economics (Hutchison, 1994, p. 287).

Mathematics is used both as an exclusionary device and to gain academic status (p. 286) - all of which is not innocuous but dangerous, given the extent to which such rigour conceals gross unrealism and vacuity.

The second way in which economic research engages in exclusionary practices is the way in which evidence is evaluated. Econometrics is the tool of choice of the applied economist. Econometrics is used to test indirectly the veracity of a theory and/or to make predictions. The challenges of translating theories into relevant testable, hypotheses are legion and have been well documented.⁵⁴

When econometrics was still in its infancy, Keynes (1939), in his review of Tinbergen’s attempt to test business cycle theories statistically, cited many of them. In particular, he cautioned that such a method was only valid if one had a “complete list” of significant causes (Keynes, 1939, p. 560), which he deemed unlikely, to the extent that many significant causes, particularly those of a political, social and psychological nature, are essentially un-measurable and therefore not included (p. 561). But Keynes stressed that his “prime facie objection” to the method that Tinbergen was pioneering lay in “the complete lack of any adequate degree of uniformity in the environment” (p. 567).

Keynes’s early warnings on the challenges of trying to quantify causal relationships had little impact on the evolution of economic practices, despite belated recognition of his prescience by both Patinkin (1976) and Hendry (1980).

What Keynes failed to foresee were the unintended consequences of this form of evaluating evidence, namely: the subordination of data to statistical technique and a disregard for other ways of testing, such as appeals to qualitative history.

The first shortcoming is a product of the social pressures within the economic profession that have put a premium on technical virtuosity. Leontief, in his

⁵⁴ See Hendry (1980, p. 396) who lists: omitted variable bias; unmeasurable variables; badly measured data; collinear variables; assuming linear functional forms; mis-specifying dynamic reactions and lag lengths; pre-filtering data; invalidly inferring causes from correlations; predicting inaccurately if parameters are non-constant; confusing statistical with economic significance; stochastic mis-specification; incorrect exogeneity assumptions; inadequate sample sizes; aggregation; lack of structural identification and an inability to refer back uniquely from observed empirical results to any given theory.

presidential address to the American Economic Association in 1970, was explicit in his condemnation of what passes for empirical research in economics. “Devising a new statistical procedure ... to squeeze out one more unknown parameter from a given set of data, is judged a greater scientific achievement than the successful search for additional information that would permit us to measure the magnitude of the same parameter in a less ingenious, but more reliable way” (Leontief, 1971, p. 3). He was also under no illusions as to why this was happening. “[It is all about] demonstrating prowess by building more and more complicated mathematical models and devising more and more sophisticated methods of empirical inference without ever engaging in empirical research” (p. 3). And his view of the consequences of all this intellectual effort is equally depressing. “In no other field of empirical inquiry has so massive and sophisticated a statistical machinery been used with such indifferent results” (p. 3). For Leontief, the predominant practices of economists had engendered complacency, which acted as a deterrent to “venturesome attempts to widen and to deepen the empirical foundations of economic analysis, particularly those attempts that would involve crossing the conventional lines separating ours from adjoining fields” (p. 5).

Mayer (1980) attributed the complacency of economists to the overly ambitious goal of ensuring that economics is a hard science. For him, this has resulted in the overselling of results to both policymakers and the public, and has induced a false sense of security, whereby the plausible is rejected in favour of what seems to be “proven” (Mayer, 1980, p. 176) - all of which would be to the good if truth wore the garb of equations and was born inside a computer. But the cost of this misplaced methodological security and attendant insensitivity to the complexity of social reality is that it leads to dogmatism when it comes to evidence and the neglect of other forms of casting light on this reality.

This dogmatism was evident in the reluctance of economists to accept that some of the fastest growing (East Asian) economies were, not just interventionist, but also protectionist for a time. If the evidence was not presented in the form of a cross-country regression, where the proxy for trade interference showed a positive and significant impact on economic growth, it was not seen as

sufficient proof of causal forces in action. Moreover, at a more profound level, the very act of performing a cross-country statistical regression in order to measure the determinants of economic growth, implies an ontological commitment to the view that the determinants of growth are everywhere the same. In other words, that there is only one singular path to an economic outcome. Practising economists may splutter with indignation, claiming that I am caricaturing what they do, and that moreover, they do make allowances for the uniqueness of countries in their analysis. While I will concede that their practices do allow for country singularity, I would add that they do so in a frighteningly reductionist and unenlightening way. Country singularity is accounted for by the insertion of a specific dummy variable. The coefficient attached to the country dummy is meant to capture everything that is unique in that country that may have had an impact on its economic performance; its history, culture, geography, topography or whatever particular attribute one wishes to attribute to a place and its people.

All of this is not meant to naysay the potentially very useful role that statistical analysis can play in understanding social reality. Social processes do display regularities, and an awareness of these regularities can be of use to policymakers, but only as one contingent form of evidence that needs to be supplemented with other ways of gleaning insights into social reality. Any method that claims a monopoly on rigour needs to be viewed as suspect.

5.6 What is to be done?

A necessary forerunner to any change in direction is a generalised acknowledgment of the failure of existing methods. A next necessary step is to be clear on what the objectives of economic research can or should be? This requires an honest admission of the challenges posed by the unique social material with which economists work. I would subscribe to the view expressed by Hutchison (1994, p. 292) of damage limitation, which I take to mean modesty of objectives. Social processes and their outcomes will never be as predictable as their natural equivalents, but that does not mean that economic and social research cannot be conducted to aid policy in pre-empting

catastrophic outcomes and improving the odds of good outcomes. I would add that modesty of objectives needs to be accompanied by pluralism in methods. The converse, whereby economists have avowedly aspired to the rigour of the natural sciences and exhibited an unknowing dogmatism in method has not served us well. Whether one works as a modeller, statistician, historian or case study analyst, we must stop turning away from economic reality as it is this reality that should condition methods of investigation.

Keynes said that a good economist is a vigilant observer who uses his/her observations to choose good models (see Hausman, 1994, p. 286). Leontief spoke of the need to stop fetishising technique and to strive for better data. My inclinations are closest to Caldwell, in his call for methodological pluralism since “there are many paths to knowledge, there are many forms of criticism, and the more that are heard the better” (Caldwell, 1994 [1982], p. 128). This may seem like methodological fence sitting, since it does not rule out (absolutely) theorising in a mathematical way or evaluating economic relationships statistically. It does however imply a major shift in emphasis. A mathematically developed theory may cast partial light on an issue under investigation, but the onus should be on the practitioner to show that this is indeed the case. I have even stronger reservations when it comes to the predominant empirical form of investigation, namely applied econometrics, partly because this is what the bulk of practising economists do and greater policy significance can attach to their research output. Furthermore, statistics dressed up as econometrics, carries with it the presumption that the practitioner knows what is causal and what is caused. But, my most serious reservation is a belief that the ever-expanding array of econometric techniques (facilitated by enhanced computing power) and the ease with which they can be mindlessly applied, does not incentivise the practitioner to attend to the data. Quantifying aspects of social reality (in the sense of attaching numbers to them) is not a simple or unambiguous process. Indeed, it can even be considered presumptuous. Nonetheless, it has its undoubted uses, socially and as an input into policy. But its usefulness depends on data awareness; that is to say, knowing what the data mean, knowing how they were collected, collated and aggregated. Only then, does it make sense to look for patterns or trends in such

sensitively measured social material. I would assert that simpler forms of pattern identification, such as pictorial representations or correlations, are less likely than fancier econometric techniques to distract the researcher from the data. They are also more likely to facilitate an open mind when it comes to understanding social reality. Such practices should serve to reinforce an awareness that patterns identified relate to time and place and that extrapolation from them to other times and places is not without risks. Such contingency can only be facilitative of admitting other forms of economic and social knowledge, leading to a healthier state of affairs than the status quo. Above all, it might encourage academic honesty in the sense of admitting, through our diverse practices, the contingent and evolving nature of economic knowledge.

The current economic crisis presents an opportunity for academic economics to change direction. Crises are good for casting a spotlight on what went wrong and forcing a return to methodological foundations. Addressing what went wrong, why it happened, what were the policy failures and what were the economic models facilitating such policy failures, is a start. It provides a space for alternative narratives (especially heterodox ones) of the current economic crisis and different perspectives on the functioning of capitalist economies. However, a crisis of the magnitude of the current one will invariably provoke a response from orthodox practitioners, and those concerned with the predilections of mainstream economics, should not be surprised if the orthodox reaction is one of damage limitation. As pointed out in the body of this thesis, the orthodoxy adopts a range of stratagems to deal with criticisms and protect what it is that it does. These can range from the extreme position of ignoring critiques and carrying on as before (unlikely in the current climate) to accepting the critique and claiming that mainstream practice is changing in an informed and constructive way. The Keynesian critique of macroeconomics in the 1930s proved too hard to ignore, yet its more radical message was neutered through its absorption into the mainstream via the neoclassical synthesis. Similarly today, there are economists such as Colander, Holt and Rosser (2010) who claim that orthodox economics is so eclectic that it is a travesty to label it neoclassical. Arguably, behavioural economics (which is the orthodox economist's answer to the claim that economic theorising is not adequate to the facts) could serve a

similar function currently as the neoclassical synthesis did in the post-war economic climate. That would explain its appeal to politicians; it facilitates tinkering around the edges of policy, nudging citizens (or society's consumers) to different (if not necessarily better) outcomes. As far as I know, it leaves unaddressed the important questions of production, distribution, class, conflict and power. In other words, I am not sure that this latest change in mainstream research represents anything more than a patch-up exercise. Indeed, it cannot be otherwise unless theorising is grounded in historical and social context.

Institutionally, some good may emerge from the current economic crisis if it reverses the narrowing in the academic curriculum that has characterised the last fifty years. Politically this may be easier to achieve in the present climate than has been the case for a considerable while, with such calls being made by respectable establishment figures like Robert Skidelsky, who would seek to include economic and political history, history of economic thought, political philosophy and sociology in the economics curriculum. One could add comparative economic thought and economic methodology to this list. The hurdles that would have to be overcome to accommodate such a shift in economic pedagogy are also political (not least because institutional financial support is politically determined) but also partly social. The skill set of the typical economist is very narrow. There is a basic lack of training in alternative epistemologies. Such a shift would require increased hiring of the small (but growing) number of economists with more pluralist and historically-oriented tendencies, including more heterodox economists. It would (inevitably) necessitate greater collaboration between economists and those in the broader social sciences. Whether such a change in the economics curriculum will occur is an open question. However, if it should, I would predict that the current disenchantment with economics among the student fraternity (as expressed in declining student numbers) would be arrested and probably even reversed. On such fragile foundations must we rest our hopes.

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