Declaration

Declaration

I hereby declare that this dissertation if accepted can be made available for use as part of a course, photocopy, interlibrary loan, and made available to external users such as companies, banks, regulators, etc.

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Oluwasegun Bewaji.

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I would also like to thank my supervisor Prof. Kent Matthews for his unfailing advice and support throughout this year.

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Dedication

This dissertation is dedicated to my family, (direct and indirect) and is written in memory of my grand parents and my aunt, Ms. E. Taiye Bewaji-Boarè.

Abstract

The key to the understanding of any word, term or concept is the explicit dissection into the word's, term's or concept's anatomical structures. It the realms of the social sciences, this implies micro-level analysis of the word, term or concept. Not a macro-level investigation and application of pre-existing theories based at that macro-level. Yet, it remains a wonder why economists and political theorists alike find themselves faced with an enigmatic tinderbox when it comes to the provision of a social enlightenment regarding the term "Globalisation". In fact, the current ethos remains so opaque that one is more likely to fit a camel through the eye of needle than be poised in confidence when expressing the exiting global political-economic status quo as a product of general dispositions towards globalisation.

This dissertation redresses this issue by conveying the true nature of globalisation in accordance with the Spontaneous Order Theory of the Scottish Enlightenment and Friedrich A. Hayek and The Exit Route Theory of Sheri M. Markose. Thereby globalisation is defined to be that institution brought about by the process of brazenfaced subversion of state regulatory structures by private agents in their bid to innovate around prohibitions of otherwise profitable activity. Understood as such, globalisation represents just one cluster of those non-pre-determinable innovations and the rules thereof that constitute the on-going process of regulatory arbitrage.

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Chapter 1
Introduction

The contemporary global economy is in a transitory state. A vast number of observers have noted that much of the predetermined familiarities in social interactions and structures defining the political-economy have become significantly eroded. In seeking an explanation of this phenomenon these observers have laid the blame purely on globalisation. Encompassing a multiplicity of political, economic and social changes, globalisation is believed to be the singularly most potent force restructuring the world order. "Today, cross-border flows—of undocumented workers, finance, knowledge and information—take a new proportion and transcend territorial states".(Chin and Mittelman(1997)). Globalisation has, thus, become the shibboleth of popular discourse on the state of the international economy. Nevertheless, in this hegemonic state in the popular deliberation, very few have truly conveyed the defining characteristics of the said topic. The term is used loosely to pigeonhole all and any difficulties faced by states in controlling their economies with the general characterisation in the literature being that this loss of control arises from the intensification of international linkages. These in turn have been deemed the consequence of technological advancement and market liberalisation. To the extent that this is true there has arisen a dichotomy of studies aiming to justify their respective claims.

In chapter two this dichotomy of thought on globalisation is considered and found to be plagued by inconsistencies or hiatus which leave the conclusions derived within the respective schools (Hyper-globalists and Globalisation Sceptics) highly objectionable. In fact it is the conviction of this paper that globalisation can only be explained by a complex

system of economic, social and power relations which extend well beyond the mere intensification of international linkages upon the advent of technological progress. Consequently, chapter three offers a theoretically based conceptualism of globalisation under the guise of Hayek's Spontaneous Order Theory and the Gödel-Markose Fundamental Incompleteness Framework.

As such it is contended that globalisation is that institution of social evolution consisting of those institutional innovations which by their nature are not the result of deliberate/constructive calculation but rather are the consequence of the need to escape the confines of non-end-neutral state regulatory institutions. Globalisation is about the need for profitable economic activity prohibited by state regulations to escape confinement imposed by these state regulations. It is an institution brought about by the continuing regulatory circumvention by private agents. In this respect, globalisation as an institution arises from the failure of those policies pertaining to the enforcement of geography (for example, monopoly control of money issue, trade and migration policies, etc) to meet the criteria for end-independence, thus forcing private agents to innovate around these legal rules by brazenfaced rule breaking. Consequently, there arises an undecidability with regards the legal status of such institutional innovation.

At this point it is important to notify the reader that the term *institution* in what follows assumes its political context. That is, it is used in this thesis to define those economic, social, political and power structures that are constituent parts of any given society. It is used to define the underpinning structures defining any given outcome of any given chain of actions in society.

Certain implications arise from this definition including the affirmation of regionalism as an attempt at curtailing the regulatory bifurcation, which epitomises globalisation.

Nevertheless, and perhaps, the most interesting of these implications is related to the ability of nation-states to effectively undertake restrictive policies independent of activity elsewhere. As shall be seen in chapter three this leads to questions regarding the current theoretical understanding of such time held fixities such as money and its opportunity cost.

In keeping with this regulatory circumvention framework of defining globalisation, chapters four and five pursue a vector autoregressive modelling structure in which globalisation is said to exist if international interest rates are found to be significant determinants of domestic economic activity.

In chapter four, the model as well as the data sets used are presented and justified. It then considers the structural stability of this model given the data. To this effect, preliminary tests are undertaken to determine the existence or non-existence of variable stationarity and system cointegration.

Chapter five presents and analysis the retrieved generalised impulse response functions in relation to the examination of domestic policy efficacy in terms of the impact of international rates on domestic real economic activity. This analysis is carried out over two sample spaces—1960 to 1979 and 1980 to 1994. International interest rates are represented by Eurocurrency deposits in London and the domestic variables given by output and prices in the Italian and Finnish economies. It is found that globalisation as described is in fact highly influential. The strength of the relationship between international rates and domestic variables is seen to have greatly increased in the latter sample space.

Chapter 2 The Tradition of Globalisation

The key to the understanding of any word, term or concept is the explicit dissection into the word's, term's or concept's anatomical structures. It the realms of the social sciences, this implies micro-level analysis of the word, term or concept. Not a macro-level investigation and application of pre-existing theories based at that macro-level. Yet, it remains a wonder why economists and political theorists alike find themselves faced with an enigmatic tinderbox when it comes to the provision of a social enlightenment regarding the term "Globalisation". In fact, the current ethos remains so opaque that one is more likely to fit a camel through the eye of needle than be poised in confidence when expressing the exiting global political-economic status quo as a product of general dispositions towards globalisation

2.1 Introduction.

The key to the understanding of any word, term or concept is the explicit dissection into the word's, term's or concept's anatomical structures. In the realms of the social sciences, this implies micro-level analysis of the word, term or concept. Not a macro-level investigation and application of pre-existing theories based at that macro-level. Yet, it remains a wonder why economists and political theorists alike find themselves faced with an enigmatic tinderbox when it comes to the provision of a social enlightenment regarding the term "Globalisation". In fact, the current ethos remains so opaque that one is more likely to fit a camel through the eye of needle than be poised in confidence when expressing the existing global political-economic status quo as a product of general dispositions towards globalisation.

As will become evident from the progression of this chapter, the current state of the political-economic thought on the said term is consequential upon the elapsing of numerous spouts of literature without regard to comprehensive theoretical definition of globalisation. In fact, whilst Globalisation has soared into the popular shibboleth of reckoning on the global political economy, very little by way of intricacy and cautious

methodology in definition has been afforded the term. Nor is there any reference to circumspect in its usage. Consequently, whilst Barry Jones(1997) advocates the need for a comprehensive definition and Iammarino and Michie(1998) distinguish between the regional and the global, the taxonomy therein is subdued by that same entrapment which beguiles the vast majority of antecedent literature.

In what follows, the contemporary basis and definition of globalisation is provided along with conclusions expressed by the two dominant schools of thought. The third section then offers a critical evaluation of the conclusions drawn by both schools indicating the fundamental flaws within their perceptions of globalisation. Finally the concluding section of this chapter summarises the undertakings of the chapter reiterating the fundamental requirements for a truly meaningful understanding of globalisation. This understanding or definition is then pursued in the ensuing chapter on "the spontaneous order of globalisation".

2.2 Globalisation and its Contemporary Understanding

As noted above, the modern discourse on the globalisation of economic activities has acquired a status of hegemony in the social sciences and public affairs. Typically, the arguments thereof are supported with references to an encapsulation of data relating to, the growth and activities of multinational and transnational corporations, and the expansion in both trade and foreign investment. Further included in this list of constituent aspects of globalisation are the new international specialisation and division of labour, enhanced volume and pace of cross-border capital mobility and globally intensified competition in consumer goods markets.

More specifically, the explicit undertones of the mainstream discourse on globalisation centres on three key issues. Firstly is the widespread belief in the inability of regulated

industries to enter global markets. From which, inferences are derived relating to deregulation crystallising a proclivity towards globalisation. A further issue relates to the supposed positive correlation between globalisation and markets' technical and allocative efficiency. Thereby, it is asserted that globalisation renders undesirable, unnecessary and infeasible all attempts at domestic economic governance and regulation. Finally and somewhat linked is the topic of globalisation of economic activity leading to increased competition and therefore efficiency.

These especially capture the wide and loose usage of the term "Globalisation" in the contemporary descriptive of increased flows of commodities, capital and people and the existence of new institutional structures through which, certain economic and political restrictions are eliminated. Nevertheless, prevalent at the centre of the transformations commonly associated with and held as an intrinsic part of globalisation is technology (Iammarino and Michie(1998)). Technological progress has been credited not only to "have opened up the world economy", but is also seen to leave national governments helpless in face of global corporate players (ibid. pp 335).

As such, globalisation has come to be conceived within the modern literature as that process or end state whereby, the liberalisation of markets and implementation of new technologies give rise to an impetus towards enhanced competition, integration and market efficiency. Thereupon, distinct national economies and strategies of national economic management are increasingly irrelevant...[and subservient to] uncontrollable 'market forces' and the influence of transnational corporations [and other principle agents] that owe allegiance to no nation-state and locate wherever in the globe market advantages dictates (Hirst and Thompson(1996) pp. 1). It is further affirmed that in such a global world, the constraints of geography on social and cultural arrangements recede and people become increasingly aware that they are receding (Walters(1995) pp. 3). From this, two distinct and

conflicting schools have evolved one of which adheres to the notion of crippled nation-states whilst the other vehemently fosters the placement of globalisation into the realms of mythology.

2.2.1 The Hyper-Globalisation School

The key proponents of the end of state authority perspective of globalisation are Levitt(1983), Ohmae(1993, 1995), Reich(1991) and Strange(1995). On the general decline of state power, it is contained within the said school that in some matters…authority is hollowing out [as] accelerating technological change…relaxes the authority of the state over enterprises based and directed from inside their territorial borders (Strange(1995) pp.59). That is, through globalisation there is a gradual and irresistible break down 'of economic insularity, nationalism and chauvinism' (Levitt(1983) pp. 101). Reich continues by equating globalisation to the loss of connection between the company, and its community even its country. Hence, ever increasing factor and informational mobility and the general character of business as abhorrent to national borders undermines the nation-state's control and cohesiveness.

The new hyper-mobility of capital and scale dissonance between the organisation of the political and economic are said to impose new pressures upon the state and its constituent parts. In particular, capital movements are perceived as creating new organisational forms at scales beyond the scope of the state and nationally organised forums of community representation. In other words, the erosion of territorial spaces and relative labour immobility, places both the state and internal lobbyist such as labour unions in new disadvantageous bargaining positions with respect to capital. As evidence of the effects of globalisation the hyper-globalists direct one to labour market givebacks, intensified competition for new investment between central and local levels of the state, the

retrenchment of the welfare state and the depletion in trade union membership and political sidelining of other democratic institutions.

For example, Holstein (1990) has noted the existing compromise of states' legislative and taxation powers by transnational corporations. Owens (1993) further notes that the burgeon mobility of tax bases on income and wealth tend to have grave implications for domestic tax systems. Effectively heightened mobility is alleged to increase competition between nation-states for these tax bases thereby inflating the difficulty in determining and collecting taxes on activity undertaken outside the domestic geography. For further elucidation, one is pointed to Ruding (1993) which considers the deterministic influence of taxation in the location activities of multinational corporations (MNCs)[1]. Taxation was shown to be the determining factor for 42% of the participating firms and in 72% of cases tax was a relevant factor. Similar occurrences are shown to exist in both the labour market and personal sector with reference to grugére cheese phenomena—tax niches in carefully delineated activities in countries with normal tax systems—in France, Russia, Hong Kong, Singapore and Indonesia.

Inclusive in this catchall of globalisation is the emergence of "Region-States". That is, those spatial entities arising from improved transportation and communications technology and accelerated international division of labour and specialisation of work processes. They are the result of either a displacement of production to peripheries within both developing and developed countries (for example the American Sun Belt); or the emergence of new industrial and economic based spaces or "*geographies*" with global reach. These include Tijuana, Hong Kong, Southern China, Silicon Valley, Orange Country, Baden-Württemberg, Third Italy and the Growth Triangle of Singapore. In fact, by definition,

such states arise because the demands of the global economy shape their contours (Ohmae(1995) pp. 122).

The argument here is that global concentration or specialisation within certain existing national-borders amounts to a means through which convergence into a new geography is derived by spill-over effects. Happy economic experiences in Bangkok [for instance,] have prompted investors to explore options in other parts of Thailand (ibid. pp. 123). Further, contended, is the falling of these economic zones within national borders as "*an accident of history*". To this effect, nation-states are perceived by some observers as antediluvian entities devoid of meaning in the deliberation of economic activity and increasingly becoming powerful engines of wealth destruction. From this neo-liberalist standpoint, globalisation is held to open up new vistas of individual liberty and opportunity. Thus the authorities are petitioned to enhance the supposedly new global climate of competition through series of privatisation and deregulation.

An alternative and more dominant interpretation of the above conceptualism hinges on adverse implications for democracy of those spouts of transformations attributed to globalisation[2]. Accordingly, viewed as cultivating tendencies towards the displacement of congruence between the political, economic and cultural, globalisation is documented as posing fatal strains on the efficacy of democracy. The breakdown of the Keynesian welfare system and the control of domestic interest rates thereby required has been traced to globalisation and the associated interdependence between states.

The OECD (1988) further contends that 'external constraints', in particular exchange rate pressures, have led to macroeconomic policy crisis and in some cases complete policy

[1] Such location activities relate to decisions on geographical bases for such things manufacturing, head-office, co-ordination and distribution centres, financial holding companies, captive insurance and off-shore banking.

U-turns. Examples of common reference include the 1976 British application to the International Monetary Fund (IMF) as a result of crippling speculative pressures for a Sterling devaluation. German interest rates have also been justified as constrained by fears of exchange and credit market becoming destabilised.

2.2.2 Globalisation Sceptics

Whilst the aforementioned cluster remains the dominant ethos on globalisation, neo-communitarianism continues to emerge. Gordon (1988) and Hirst and Thompson (1992 and 1996) for instance spearhead the advancement of an affront to the advocates of globalisation. For these sceptics, globalisation is simply a myth that exaggerates the degree of our helplessness in the face of contemporary economic forces (Hisrt and Thompson (1996) pp. 6). Moreover, the international economy, by the standards of traditional neo-classical and Marxian models of competition, has witnessed *declining* rather than *increasing* mobility of productive capital." (Gordon (1988) pp. 63). To this effect, the globalisation sceptics maintain that the important relationships within the contemporary international economy remain those between the more developed economies. Indeed these economies are perceived to have increased in their relative importance in terms of their share of world trade and investment. Evidence is provided that 80% of world trade was conducted between the OECD economies whilst 75% of foreign direct investment (FDI) was accounted for by the Group of Five (G5) main economies. "The LDCs, and even the NICs, still constitute a very small part of the international economy, however regrettable or disappointing that may be". (Hirst and Thompson 1992 pp.366)

Further, we are pointed to an adumbration of the decline in First World imports from non-oil-exporting Third World economies. Withal, a string of empirical studies

[2] The term democracy is used to capture those equality based structures underpinning the nation-state

consistently find, with the exception of highly homogenous commodities such as gold—large and persistent deviations from the law of one price for a wide range of traded goods. Attributed to adjustment costs and trading frictions, these deviations are held to underpin, the prevalence of the nation-state. Likewise, Bordo and Jonung(1994) show that for eleven of the OECD countries, the level of convergence was not significantly greater than in the period between 1881 and 1914 and had in fact declined between 1959 and 1990. This is further supported by the conclusions of Oxelheim(1990), who found evidence of declining total financial integration–defined as complete integration of interest rates and prices in both financial and goods markets.

In furtherance, rather than being a force of globalisation, the growth of foreign direct investment (FDI) is seen no more than the mere transformation of international interdependence and flows from dependence on trade. That is, FDI is merely displacing trade as a source of integration and is simply a consequence of less vehement protectionism in the area of international investment. States should therefore be able to curtail FDI with the creation of regional blocks or other restrictive practices. In conjunction, sceptics have bespoken that international businesses are still largely confined to their home territory in terms of their overall business activity. That is, they remain heavily "nationally embedded" and continue to be MNCs "entrenched in specific national markets and with local suppliers and dealers" rather than TNCs. Thus, these companies remain subject to state regulatory powers.

In fact, neo-communitarians and other sceptics of globalisation insist that the literature on the decline of the state are excessively dogmatic and based on wilful neglect of thesis particularised on the fundamental static of national institutions as unique capacious and legitimate policy making entities. (Low (1997) pp. 243). The stakeholder society is

such as unemployment allowances, minimum wages, and the standard of working conditions

correspondingly held to be mooted as an essential ingredient in much wider strategies through which problems of the community can be resolved[3]. To which the economic development of Germany and Japan are identified as proof of efficacy. Consequently, whilst the global economy as described by hyper-globalists will tend to be frat with antipodal impulses to the state's initial intentions, Barry Jones (1997) offers an optimistic approach to the role of communitarian and stakeholder policies whereby it is the ability of the firm to adapt to policy that determines its survival.

An additional vindication of this position (viz. the retained importance and potency of state governance) is provided by Helleiner (1994) and Martin (1994) who argue that the mediation and initiation of the monetary principle retreat from that underpinning the Bretton Woods System was undertaken by governments. This is qualified with suggestions pertinent to a reformulation of the Keynesain welfare state principle. Moreover, at the extreme, Hirst and Thompson (1996) continually drawing reference to the European Union, argue that the creation of effective supranational and other regulatory institutions encroach upon the globalisation process. Consequently, such redefinition's of governance emasculate the requirement of democratisation (see pp 142 and particularly chapter 8).

The sceptics also affirm that placed in a longer-term historical perspective, changes witnessed within the international economy are insignificant. For example, the increase in capital mobility as argued by the hyperglobalists to be evidence of globalisation is canvassed as not being without historical precedent. Evidence provided to this effect alludes to current levels of capital mobility not being significantly different from those of the period before the Great Depression. Notermans (1997) also maintains that international

[3] The Stakeholder society emphasises the principle that a firm's activities have potential effects on numerous groups ranging from the shareholder to the community and environment.

financial penetration of the United Kingdom and other economies was greater between 1905 and 1914 than between 1982 and 1986.

2.3 Misconceptions within the Mainstream

Whilst both sides of the globalisation debate provide a significant contribution in the development of an understanding of globalisation and its impact on the state, their analysis is subject to an inherent oversimplification in definition. Both similarly conceptualise the said topic as the (semi-) perfect integration of international markets, with sceptics contending to test the validity of the assertions of the hyper-globalists. However, based at the macrolevel this definition is analytically limited. Globalisation, as will be shown in the next chapter, is not an end-state therefore any macrolevel conceptualisation will be thoroughly inadequate. As Perraton *et al.*(1997) notes, globalisation is a multifaceted process with a multiplicity of causes and equilibria unlikely to be consistent with any single implied end-point.. 'In particular, the conception of global markets is often conflated with perfect markets, so that, when international markets do not operate as textbook perfect markets, this is erroneously taken as evidence against globalisation' (Perraton *et al.*(1997) pp. 258). In fact, whilst Perraton et al do not provide a rigorous theoretical understanding of the intrinsic processes, they are correct in their approach, which highlights the intrinsic complexities of globalisation. Correctly, they estimate globalisation to be a process based in history engendering shifts in the spatial reach of networks and systems of social relations to transcontinental (or interregional) patterns of human organisation, activity and the exercise of social power (ibid.). As a multidimensional phenomenon globalisation is not only applicable to but also determined by the interactions between the different forums of social action, ranging from the economic to the military.

Moreover, the current breed of literature tends to seek an understanding of globalisation by simply reading off evidence they provide relating to the extent and intensity of global processes. By so focussing on the quantitative there is a general tendency to ignore the qualitative. This is especially evident in the writings of the globalisation sceptics. In fact, any empirical study of globalisation is necessarily frat with difficulty and the results thereof must be interpreted with caution. Nevertheless, the aforementioned schools of thought offer a pigeonhole of tables, diagrams and items of similar ilk claiming the existence or non-existence of globalisation delineated in terms of convergence. It is this obfuscation of globalisation with perfect markets that provides one with sufficient evidence as to the requirement of more unimpeachable definition and interpretation of any empirical perlustration undertaken hereunder.

Globalisation in no way necessarily implies convergence or homogeneity across markets and territorial borders. In fact globalisation thrives on the differences between nation-states. Essentially the theoretical standard of Mundell-Fleming models must be rejected at the outset if one is truly to understand globalisation. To this effect, experience has illustrated the unsustainability of fixed exchange rates in face of financial globalisation. Further, monetary policy independence has been substantially limited. To consider globalisation solely in terms of convergence is erroneous and degenerates it into internationalisation. Typically, the level of integration involved in any aspect of globalisation is determined at the micro-level. That is, the nature of interaction between its multiplicity of dimensions. As such, globalisation must be considered in terms of necessary modifications to existing theory. Accordingly, both the hyper-globalists and sceptics in their misrepresentations of globalisation erroneously over-emphasise the relevance of naive and misleading applications of theory and indicators thereof.

Globalisation also does not lead to the castration of the state in terms of its powers and relevance. Networks of economic interaction have always been at conflict with the territorial networks of power enforced by the state[4]. Thus, states have always been affected by external constraints and claims to pure hegemonic/sovereign national power have always been objectionable. In this respect, the close correlation between national savings and investment rates, globalisation sceptics claim to be evidence of policy independence, serve to prove little. Such correlation as the experiences of the 1980s have shown are dependent on current account positions and can even arise in face of perfect capital mobility if savings and investments are determined by inter-mutual factors. Moreover, whilst national financial systems can still be controlled through policy effects on domestic industry and households, speculative activity driven by interest rate spreads across countries implies that base rates are determined on global markets. The ability of larger firms to operate on global capital markets further implies that domestic control and general policy independence is substantially limited.

Also worth noting is the nature of both economic interactions and national sovereignty. That is, by realisation of economic interaction as guided by decentralised processes and national sovereignty as centralised by definition, the need for any concept of globalisation to accommodate the mutual or reciprocal actions or influences between decentralised and centralised control. Conspicuously, this is ignored in the mainstream, whereby hyper-globalists reject all notions of centralised control whilst globalisation sceptics reject the relevance of decentralised processes. In so doing, both become demeaned and of limited analytical context. In fact, further inspection highlights the requirement of a micro-level as opposed to macro-level considerations of the said topic. As is evident from Hirst and Thompson(1996), without, this theoretical specification (the

[4] This conflict can be seen in an understanding of the nature of FDI activities of the MNCs

interaction between decentralised and centralised processes) globalisation sceptics continually revert to redefinition's of the state over larger spatial parameters. This is, of course, seemingly a contradiction when noted that their suppositions are based on the notion of globalisation being grounded in mythology. In an alternative chain of words, having in the first instance rejected the existence of those forces that lead to the creation of supranational institutions of centralised control, it seems strange that their theory would then contend the requirements of such institutions. This contradiction stems from their confusing the residence/territorial principle applicable to activities or uninational companies with the ownership principle associated to those of multinational and transnational corporations. In fact the need to consider the possible divergence between the boundaries of the state and of institutions of governance is due to the fact that the activities of MNCs/TNCs have already brought about a divorce between the territorial sphere of operations and interests of MNCS/TNCs and those of the nation-state and other players within it (Ietto-Gillies(1997) pp.79).

2.4 Conclusion

This chapter, has aimed to highlight the mainstream political-economic dichotomy on globalisation. It was shown that with elapsing of time and numerous spouts of literature, there has been no attempt at provide a true catechisation of the catchall, "globalisation". Whilst globalisation has soared into the popular shibboleth, of reckoning on the global political economy, the endemic methodology in definition and the conclusions thereof were seen to be insufficient and erroneous. These problems of definition have been seen to emanate from the general space of micro level considerations disregarded in the mainstream. The core conclusion from this survey is therefore that a more appropriate view on globalisation is required: this is the subject of the ensuing chapter

Chapter 3
The Spontaneous Order of Globalisation

> *It is not from the benevolence of the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love . . . it is his own advantage, indeed, and not that of society, which he has in view. But the study of his own advantage naturally, or rather necessarily, leads him to prefer that employment which is most advantageous to society...he intends only his own gain, and he is in this,...led by an invisible hand to promote an end which was no part of his intention*. (Smith (1776) Book I and IV)

3.1 Introduction

Though the theory of spontaneous order has a long tradition in the history of social thought it has been eclipsed in the modern orthodoxy of the social sciences. In particular, its current state of demise has been to the advancement of Constructive Rationalism (see Hayek (1973) pp. 8-11) the physical science based orthodoxy which associates the benefits of civilisation with conscious direction towards preconceived ends. That such a methodology has been inextricably engraved into the minds of those within the political economic discipline at the expense of spontaneous order theory, though unfortunate, is not surprising. At the socio-theoretic level, neither Humean rational scepticism, Kantian formalism nor Cartesian rationalism provided at the least a weakly adequate exposition of the theory they alluded to. Barry (1982) and Ullmann-Margalit (1978) further obfuscate the theoretical argument by their suggestions that spontaneous orders "appear to be a product of some omniscient designing mind" (Barry 1982 pp. 8). Moreover, whilst the astounding 1945 article by Friedrich A. Hayek "The Use of Knowledge in Society" aroused the slumbering attentions of leading contemporary economists, to assume the successful accomplishment of the revival in spontaneous order theory is in the word of Sheri M. Markose "hopelessly optimistic". In fact, it is perhaps correct to state that given the

extensive list of insightful writings since her seminal thesis on "End-independent Legal Rules and the Political Economy of the Expanding Market Societies of Europe" Sheri Markose remains the only natural successor to Hayek.

It is in this context that the present chapter aims at extending the spontaneous order theory pioneered by Hayek—who stressed the importance of spontaneous processes and the impossibility of predicting the future growth of social order—to the highly topical area of globalisation. In so doing, a theoretical exposition of globalisation is provided along the lines of the Gödelian Metamathematical logic underpinning the political economic thought of Markose (1998a,b,c, and 1999a,b). Section 2 elaborates on the aforementioned order of spontaneous processes and in particular, with respect to the selection of a system of legal rules and control. Thereby, providing the basis for the theoretical definition expressed in section 3 of globalisation as the transformation of rationalistic and purposive non-end-neutral rules constituting the State to non-rationalistic, non-purposive end-independent norms relating to Kantian Jurisprudence via a process of institutional rule breaking behaviour. That is, globalisation is an institution consisting of outcomes from the rule breaking behaviour of autonomous agents which renders ineffective non-end-neutral State policies. Section 4 considers some of the far reaching definitional and policy implications of these results; thus providing the basis for the econometric analysis in the latter chapters.

3.2 The Order of Spontaneous Processes

The theory of spontaneous order has been applied to various aspects of social thought and in particular, market mechanisms. The mere over view of the seemingly oxymoronic term "spontaneous order", is indicative of an intrinsic complexity. A complexity further manifest upon ones consideration of the term referring to those systemic outcomes which, though emerging without the input of any external forces appear upon successful

completion, to be guided by a regular proper arrangement or method. The theory of spontaneous order further, examines structures of events, orders and regularities in social patterns given the explicit assumption that these patterns and regularities are neither the corollary of the rational design of humans[5] nor can they be attributed to purely natural phenomena such as the weather (Barry(1982) pp. 8).

To this effect, Sugden (1989) argues that order in human affairs can arise spontaneously in the form of conventions or self-perpetuating and replicating patterns of behaviour. Moreover, all notions of such self-enforcing rules arising from any process of collective choice or abstract rational analysis undertaken in the orthodoxy of game theoretic models must be dispelled. In any case, it is worth quoting Sugden at length to illustrate the undertones of spontaneous order.

> "…. Conventions are not the product of our reason. Nor are these patterns of behaviour necessarily efficient. They have evolved because they are more successful at replicating themselves than other patterns. If they can be said to have any purpose, or function, it is simply replication …They do not serve any overarching social purpose; thus they cannot in general be justified in terms of any system of morality that sees society as having an overall objective or welfare function. The conventions we follow may, however, have moral force for us. But if they do, that is because our moral beliefs are the products of the same process of evolution. (pp. 97)

A number of issues concerning the self-enforceability of rules associated with spontaneous processes become apparent from closer inspection of the above quotation. These will be considered in some detail and are pertinent to:

[5] It is important to note whilst it is not possible to state that "rationality" is the basis of all human action in society, this is not grounds to automatically ascribe a notion of "irrationality" to the theory of spontaneous orders. Moreover, the distinguishing of spontaneous orders from irrationality is imperative as we are cautioned by David Hume that the role of tradition and past experience provide a framework within which social order can be created.

- The importance of decentralised control
- The non-rationalistic/constructivist nature of socially beneficial outcomes. These are simply unanticipated consequences
- The selection of a system of self-enforcing rules

3.2.1 Decentralised Control

Founded on the Scottish Enlightenment and Kant (1965), Hayek's conceptualisation of decentralised control is characterised by the autonomy of the individual decision-maker and is achieved through the evolution of an end-independent system of legal rules. The end-independence of legal rules, it should be noted, refers to the universality and provision of a means of limitation or adjustment to the "great and manifold consequences that can be drawn from the law" (Kant (1965) pp. 25-34). That is, as well as being open ended and universally applicable, individuals within the system should be free to challenge the legal rules constituting that system. Thus, such rules must be in conformity with what is referred to as *the natural law of spontaneous order*. That is, those regularities in the social world brought about by men generating and adopting those rules appropriate to their circumstances (Barry(1982) pp.10). Hence the existence of a moderately Darwinian evolutionary nature to the system of rules which illuminates their "non-incentive based self-enforceability"(Sugden(1989)). The system of legal rules must be completely decentralised.

For Hayek, the essentialism of the decentralisation of control arises from the fact that the world is of a form consisting of autonomous individuals "whose inner recesses are inaccessible to the external observer". Consequently in Hayek, unlike the Marschak(1959) guided mainstream epistemology—in particular the super-consistency theories of rational expectations—socio-economic agents retain their individualism. The corollary to this is that is the optimal level of decentralisation determining the extent to which individuals are

given autonomy to make decisions on the basis of their private information cannot be subject to rational calculation. For if so, systemic stability can only be sustained by prohibition (see Athans(1963) and Markose(1991)). In other words, the deletion of localised decision making by the centre. Thus there is a conflict between constructive rationalism and the autonomy of agents. Notwithstanding, the sphere of localised cognition is substantially superior to that at the centre[6]. Thereby rendering misguided the rationalist understanding of liberty wherein, knowledge is determined by elements of predictability and controllability[7]. It is particularly worth noting that this aspect of constructivism in rationalist rhetoric is in conflict with the processes that determines the level of decentralisation and informational constraints commonly associated with the price mechanism.

3.2.2 The State of Human Rationalism and The Unintended Consequences of Action

Hayek (1973, 1976, 1979) further argue that the decentralised decision making of spontaneous order theory is vindicated by an even more fundamental problem with regards to the human condition stretching beyond the issues of informational constraints. As such, having been the first to articulate the invisible hand theories of the Scottish Enlightenment and the Kantian agenda, Hayek goes on to postulate that an understanding of the legal system guiding the actions of autonomous agents can only be attained by considering such a system as being a complex phenomenon beyond the scope of human rationale.

[6] Hayek (1937) offers the conjecture that the rationale for decentralised systems lies in two truisms and singularly intractable informational constraints in society. Firstly, information in society is found in a dispersed form subject to time and place matrices and perceived by individuals in subjective fashion. Secondly, the centralisation of information by mere communication alone is impossible.

[7] Rustem and Velupillai (1990) and Lewis (1987) have shown that it is impossible for the state to know what individuals will do within the neoclassical framework. Lewis (1987) also shows that though the Walrasian framework indicates the existence of a general equilibrium under certain conditions, it cannot constructively determine what that equlirium will be.

The formalisation of complex systems and the undecidability thereof is provided within the mathematical logic endemic within Gödel (1931), which essentially states that no system can explain itself and a system of increasing complexity is required to explain the principles of a lesser system [Gödel (1967, p. 617)]. Hayek (1952, 1967) carries this pronouncement into cognitive psychology arguing that the formal rules of cognition and inferential processes of the human brain most abide by Gödel's Undecidability Theorem. That is, the human brain is incapable of self-explanation. Moreover, due to the absolute limits constraining the brain's inferential processes, individuals confronted with complex phenomena are dependent on inarticulate systems of formal rules of inference and problem solving. Significantly, Hayek perceives such rules as only possibly arising from a process of trial and error. Hence, these rules that aid the human handling of complex systems are not the design of an "omniscient" human brain. Furthermore, to govern societies by coercive and purposive legal rules serves only to proliferate these fundamental limitations of the human brain at the social scale. Thus, it is impossible for rationalistic and utilitarian programs of control to ascertain results pertaining to civil society.

Therein lies an indisputable affirmation of arguments expressed by Hume (1737) that, a priori moral and legal norms which are required for the servicing of social order are "not conclusions of our [pure and unaided] reason". Hence, we become subservient to the lamentations of Bernard Mandeville's "*The Fabble of the Bees*" that civil society is the unintended consequence of actions ascribed to individuals pursuing some ulterior objectives (see also Merton(1936) and Kane (1977)). Coercive rules of control in society which, do not satisfy the premises of a non-deterministic nature or end-independence will therefore result in degenerate simple outcomes in society (Markose (1991) pp.584).

3.2.3 The Selection of End-independent Rules

Simon (1981), Sugden (1989) and Markose (1991) have suggested that the operations underlying the adoption of end-independent legal rules, are appropriate to those of problem solving within complex systems. In particular, the climacteric formal structures regarding the optimal course of action are not guided by explicit computations of the mainstream involving optimisations based on preconceived consequences. Rather, solutions to complex systems are based on elimination processes whereby, sequences of operation are eliminated on the premise of inconsistency with some definitive test criteria. Thus, any surviving legal rules, which posses self-enforcing properties as those of the market, would have been negatively selected. This is expressed powerfully in the statement that "in a market economy, there is an acceptable level of decentralisation up until the time the next person challenges the system for the non-universal nature of a legal rule "(ibid. pp.586)

3.3 Defining Globalisation

An essential key to an understanding of the processes at work in the definition of globalisation offered here derives from the assimilation of the Gödel (1931) framework of meta-mathematical analysis. This system of logic is pertinent to structures possessing self-referential mappings such that the said system can incorporate more comprehensive representations of itself. Moreover, such systems are conducive to an identification of the spontaneous order of the antecedent section.

The theoretical groundings of the recursive mathematics of Gödel can be found in famous diagonalisation method of Cantor (1874). In this system, it is proven that for any set M with elements m$\in$ M, the set of all the sets N which can be put into 1-1 correspondence with M is less than the set of all the subsets (power sets) of M. Which is to say, an uncountable number of set theoretic functions cannot be computed. Thereby, the set

$$\bar{K}_x = \{x|\ x \notin W_x, \phi_x(x) \text{ does not halt all } x \in N\} \quad (1)$$

$$\text{and } K_x = W_x = \text{Dom. } \phi_x = \{n|\ \phi_x(n) \text{ halts}\} \quad (2)$$

where $\phi_x(x)$ is the duplicating or self-referential representation of a Turing machine with code x and input x. The underlying proposition in (1) is that the set $\bar{K}_x$ contains the codes of sets that do not contain their own codes. That is, it represents those sets of alternate dimensions whose existence circumvents the apparent paradoxes in any given formalised system of sufficient complexity. It is the mad man Yossarian in Joseph Heller's 20th century Major-Major paradigm[8]. $\bar{K}_x$, in the context of Hayek's controversial claim regarding the human brain, is outside the domain of those outcomes which it can predict. Essentially, $\bar{K}_x$ characterises, the spontaneous order premise of the undecidablity of outcomes of human action in society, viz. the fundamental incompleteness result of Gödel. That is, there are certain outcomes which, whilst being valid objects within any given system cannot be preconceived from within that system by any effective procedure.

Consequently, any rational construct of social organisation is essentially limited. Policy-makers are therefore incapable of predetermining the outcome of any given policy rule since there exists an uncountable number of enumerable outcomes from social processes. Historical claims to state sovereignty are therefore precarious. State regulatory institutions, for all their good intentions, can never be certain that any carefully aforethought policy will give rise to their desired objectives.

[8] In this parradox, Major-Major imposes the rule that secures the outcome that noboy sees him when he is in as all visitors are required to preannounce their arrival at hisd office. In this context all who are awere of this rule abide by it and stay away execpt the mad man Yossarian who ambushes the Major by not playing by what is predictable by the rule (see Markose (1999b) pp. 4).

3.3.1 The Policy Game.

Globalisation according to the Gödel-Markose framework of alternate dimensions (exit routes) can only be truly understood by drawing reference to game theoretic mechanisms. This allows one to capture the interaction between the decentralised and centralised processes refereed to above.

To illustrate, consider the sequential move game specified between the government (G) and private actors (P)[9] over the infinitely countable set of actions and policy rules (A_j) such that $a_{ij} \in A_j$ for $j \in \{P, G\}$. Furthermore, there exists a set C which refers to the universal set of configurations c_n of private sector actions given the formalised regulatory/ legal rule a_g and the state/ archival variable $s \in S$. Therefore,

$$\phi_{\sigma(a_G, a_G)}(c_n) = q,\ q \in E_\sigma(a_G) \qquad (3)$$

is the desired outcome of the coercive authority in achieving its policy objective. It is worth noting that q is a vector of state/ archival variables determining the stage of play outcomes in the game and is a member of $E_\sigma(a_G)$. Note also that at this *"base-point"*, equilibrium holds only if p is rule abiding.

Both players are further assumed to have a strategy space B^j, containing all possible strategies derived from their respective strategy functions $\beta_j(\hat{\beta}_j, \hat{\beta}_i, Z(a_j), q)$. Where, $\hat{\beta}_j \in B^i$ is j's beliefs of future strategies pursued by $i \in \{G, P\}$ and $Z(a_j)$ are the Gödel numbers of the of the total computable best response functions f_j, $j = \{P, G\}$ defined over A_j. These optimal response functions f_j, further belongs to one of three classes:

[9] P refers to the collective representation of the I private agents in society each of which possessing an objective function denoted by p_i.

$$f_j = \begin{cases} 1 \text{ (Identity Function)} & \text{- Rule Abiding} \\ f_j^{+} \text{ with } g.n\ z_j^{+} & \text{- Rule Bending} \\ f_j^{\neg} \text{ with } g.n\ z_j^{\neg} & \text{- Rule Breaking/Liar.where } z_j \in F = \{ m \mid f_j = \phi_m, \phi_m \end{cases} \quad (4a)$$

is total computable}. (4b)

Under the Markose construct, the total computability of these response functions produces the notion of constructivism in action rules from which is obtained finitely codifiable descriptions of institutional procedures defined for all mutually exclusive states of the world (Markose (1999b) pp.8).

In marked contrast to rational choice models where the optimisation calculus in choices of best response requires the restriction of choice to certain action sets, set F in the Gödel-Markose approach implies the existence of an inexhaustible number of ways in which 'new' institutions can be constructed from extant action sets A_P, A_G. (ibid.). Consequently, an element of F will always exist such that if applied will constitute an improvement on the local optima. Also, where the choice of such an implementable action rule transcends the static sets of rational choice theory, the player is said to have used a surprise (unpredictable) strategy. What is more, there exists, no efficacious manner to systematically identify the utilised response function.

An important condition for the ascertaining of a Nash equilibrium in this model is that there exists a consistent alignment of mutual beliefs in strategy space (CAB) such that $\hat{\beta}_i = \beta^*_j = a^*_j$. That is, i's, beliefs of j's optimal choice of strategy must be such that it is confirmed by j's choice of strategy.

3.3.2 Globalisation

Of these classes of response functions, globalisation as defined here is concerned with the latter (viz. $f_j^{\neg}$ Liar/ rule breaking). In fact, whilst the employment of f_j^{+} involves the altering of G's desired outcomes, it does not controvert that policy objective. Moreover, Markose (1999a) has shown that Nash equilibrium outcomes from this class of strategy are computable. This in mind, globalisation can be seen as involving the systematic transformation of the structure system 's to ensure that the output sets $\{E^{\neg}_{\sigma}(a_P), E_{\sigma}(a_G)\}$ are disjoint. Hence being defined by the structure,

$$\phi_{f_P^{\neg}{}_{\sigma}(a_G, a_G)}(c^{\neg}_n) = q^{\neg} \notin E_{\sigma}(a_G) \leftrightarrow \phi_{\sigma(a_G, a_G)}(c_n) = q,\ q \in E_{\sigma}(a_G) \qquad (5)$$

Which says that assuming some rule "a_G" to be optimal for G for some $\hat{\beta}_G$, P can systematically subvert the implied equilibrium on the RHS by employing the response $f_j^{\neg}$. Hence, the processes determining β^*_P (P's optimal strategy) and $\hat{\beta}_G$ are not ancillaries. The rule a_G can not be optimal for both P and G.

Moreover, where, mutual knowledge exists that P is rule breaking; the Gödelian non-computability result is obtained whereby.

$$\phi_{f_P^{\neg}{}_{\sigma}(\beta^{\neg}_P, \beta^{\neg}_P)} = \phi_{\sigma(\beta^{\neg}_P, \beta^{\neg}_P)} \qquad (6)$$

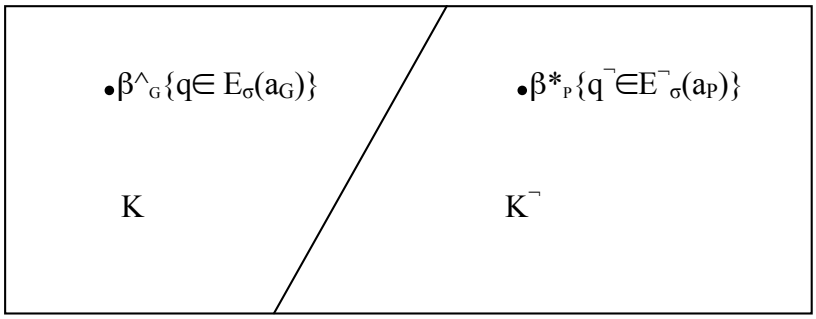
is unpredictable from within the system.

Markose(1998a, b) have shown that the assumption that (6) is computable leads to a logical contradiction in (5). Again we return to the result in (1) that there exist a class of outcomes, $E^{\neg}_{\sigma}(a_P)$, and institutions, $c^{\neg}_n$, which supersede the constructive rationality of the human brain.

Ergo, contrary to the popular conceptualisations highlighted in chapter 2, globalisation relates to the need for numerous economic activities to move outside the regulatory

structures of the state—for example monopoly issue of money, trade restrictions and immigration policies—by way of institutional rule breaking. Diagrammatically, globalisation is that subset of institutional innovations $q^{\neg} \in E^{\neg}_{\sigma}(a_P)$ in $K^{\neg}$ (see (1)) the set of non-computable fixed points and complement set to K in (2).

Figure 3. 1 Globalisation and the Incompleteness of P's Strategy Set B^P



Thus understood, globalisation as a constituent part of the generic institution of regulatory arbitrage arises from the need to "innovate around prohibited types of profitable transactions or around newly imposed or newly to become effective restriction" (Miller (1986)). It is that institution/set consisting of those institutional innovations which by their nature are not the result of deliberate/constructive calculation but rather are the consequence of the need to escape the confines of state regulation. The natural corollary to this is that the state and its constituent regulatory institutions are systematically forced over time into using or at least mimicking end-neutral rules to which the private sector will rule abide or bend.

Globalisation further, in contrast to the notions of the schools discussed in the previous chapter has nothing to do with the intensifications of international linkages between states nor does it relate to market efficiency or convergence. The mere fact that these things may or may not arise is of little substance. They are simply the unintended consequences of the process of institutional rule breaking that epitomises globalisation. As such it serves little purpose to produce pulchritudinous tables and diagrams as do the

contemporary observers and claim the existence or non-existence of globalisation. In fact convergence only extends to the systemic enforceability of regulations and not as seen in the mainstream on wealth. Any convergence in the latter is purely coincidental.

Moreover, were one to impose the cynicism of Rousseau's origination of the conceptualisation of words, it would perhaps be correct to claim that the term *globalisation* has little substance than the aesthetic (see Rousseau (1762) pp. 90). It is nothing more than a term coined in human communion to capture the apparent erosion of the jurisdictional independence of nation-states resulting from innovations which are unpredictable from within the system but are valid entities of that system. Alternatively expressed, those innovations which constitute globalisation are simply reflections of the "*Ik bün all hier"* (here I am already) phenomena described by Schanze(1995). These innovations are dragons awoken from their slumber by the imposition of regulations (see Miller(1986)). They start off on a small scale, so minute, that they go unnoticed (Podolski(1994)). Thereupon, since many of the constituent innovations of globalisation exist within the system in one form or another the main threat to the authorities are not the innovations themselves but their rate of diffusion—which is the result of pressures leading to *regulatory bifurcation*.

Furthermore, to state that globalisation is a consequence of cost reductions from technological progress and liberalisation as generalised in the constraint induced approach of Silber(1975, 1983) and Horim and Silber(1977) is an over simplification of the underlying issues. New technology is not designed in abstract of desires, as such statements would imply, but rather a response to these requirements. The invention of the wheel was a result of necessity combined with a trial and error process not rational calculation. The caveman simply needed an effective means by which to carry the hairy mammoth to the cave. Thus, technological advancements are primarily the result of a need

to innovate or improve on existing innovations, not the determinants of these innovations. Nevertheless, this is not a corollary to the statement that innovations do not arise from a new application of existing technology.

3.4 Implications

What is evident is that there are far reaching implications from the institution commonly referred to as globalisation. At the centre of these are the implications for our understanding of the spouts of international co-operation and regionalism (and at the extreme tendencies towards federalism); and the operations of the monetary policy transmission mechanism.

3.4.1 Regionalism

Very rarely had the dialectics of globalisation been discoursed in the literature until Chin and Mittelman(1997). As does this paper, the authors relay globalisation as not simply being about a series of intensification in the dynamics of capitalism (i.e. competition and accumulation) but also fundamentally about interactions—changes in different spheres of social activity, the ways that they compress time and space, and their varied impact on strata in zones of the world economy. In this sense, globalisation may be construed as a partial, incomplete and contradictory process—an uneasy correlation of economic forces, power relations and social structures (Chin and Mittelman(1997)).

Kane(1977) who separates the political and economic perspectives of the matter of regulatory bifurcation draws similar parallels. By drawing a clear distinction between the objectives of politicians and the contrasting aims of the regulates, Kane highlights the existence of a regulatory dialectic “an uneasy correlation of economic forces, power relations and social structures”. A process whereby regulations are imposed, circumvented

and re-imposed with the dissatisfied economic agents continually behaving "like angry baseball players appealing an umpires call to some higher authority" (Kane(1977) pp.62). Whilst Shanze(1995), in illustrating the dynamism of counteraction to regulation, pleas with the judiciary to look favourably upon the hedgehogs—the institutional innovators undertaking regulatory bifurcation—Kane affirms the harsh reality that where proponents of control hold substantial political clout, "bureaucrats steadily extend the reach and complexity of the control network".(ibid. pp 63). A consequence of the legislatures perception of programs' success "as a test of their sincerity and authority" (ibid.).

This suggests the legislature's position may be consequential on mutual understandings of submerged networks which, do not have as their ultimate or immediate objectives resistance (Polanyi(1944)). That is, though rationalised by the legislature as open acquiesce to some stated or unstated ideological construct—Scott(1990)'s infra-political public transcripts—the affront to the constituent innovations of globalisation may not be the ultimate aim of the submerged groups. Indeed, such legislative posturing over-looks "hidden transcripts" which question the definition of codes, nomination of reality…[offering] by their own existence other ways of defining the meaning of individual and collective action (Melucci(1985) pp. 812).

A dialectic is therefore set forth whereby globalisation, which itself arises in counteraction to non-end-neutral state controls, is countered by state level restrictions. At the extreme, this resistance to globalisation entails closer linkages between states–i.e. regionalism. The parallel growth of FDI and free trade areas for example must be read as state level attempts at curtailing the impact of the former by the integration and extension of policy jurisdiction at the supranational level. In fact there is no greater vindication of this than the European Union. The Kane dialectics emanates proudly when one considers the debacle surrounding the collapse of the European Monetary System (EMS) in the early

1990s and the swift move to the stronger currency integration defining the Economic and Monetary Union (EMU). Regionalism thus, denotes not simply a rise in activity between geographically contiguous countries, but also an intensification of international activity between them which results in economic activity becoming increasingly organised at the regional level but also in becoming or remaining geographically limited, so that this activity is only marginally affected by activity elsewhere (Perraton *et al*.(1997) pp. 258).

3.4.2 Efficacy of Monetary Policy.

Another key implication of the above analysis relates to the efficiency of the monetary transmission mechanism, which describes the channels through which monetary policy shocks impact the policy target, viz. price inflation. In recent years, economic theory has been entrenched in the notion of long run price levels being exclusively determined by the actions of the monetary authority. As monopoly issuer of the "ultimate means of payment," monetary authorities are argued as being able to determine the nominal value of transactions and hence, the price level, in an economy simply by altering interest rates at which this means of payment is provided.

Bernanke and Gertler(1995), Bernanke(1993), Taylor and Obstfeld(1995) have argued that the domestic monetary policy instrument ensures price stability through the unique role played by banks. Asymmetries of information between borrowers and lenders, it is argued ensures the specialness of banks in the monetary system.

Under this nexus banks are asserted to posses a privileged position in the economy in their ability to accommodate certain groups of borrowers. As such, monetary policy directed at reducing bank deposits will be transmitted to borrowers through the response of equity prices. For the firm, a monetary shock that depresses the price of equity implies managers have less equity stake in their firms. This was argued to result in an escalating

level of moral hazard and adverse selection thus forcing a credit crunch and increased finance premium. For the households, the affect of a reduction in equity prices is an erosion of income from financial assets and thus heightening the likelihood of financial distress thereby creating reductions in expenditure on consumer durables and housing. In both cases (i.e. firms and households) the result is a decline in output and thus prices.

Clearly, this nexus is rendered degenerate if households and small firms can obtain credit from some other source. Closer inspection shows that the main assertion of earlier sections that institutional rule breaking occurs where regulatory restrictions prohibit certain profitable economic activity holds here. For evidence of this one need only look at the emergence of the "*Incubator*", which, refers to business development groups providing the environment and resources to initiate and accelerate business growth. Alternatively, the emergence and workings of Eurocurrency markets was the result of domestic regulation of activity in the national currency at the territorial sphere (Regulation Q).

Essentially, these institutions imply that contractionary policies will lead to a transfer of both firm and household deposits to banks. Borrowers will also enter these markets since loans are readily available. Moreover, small firms and households do not need to be directly involved within these markets since it is possible for them to obtain credit through firms large (e.g. banks, incubator, mutual funds etc) enough to operate in such markets.

Other innovations include financial engineering whereby it is possible to create a fictitious firm, which is liquidated at a later date for purposes of credit availability—special purpose entities or financial holding companies. Other forms of cash management—the deliberate development of liquid assets with the aim of maximising return on the financial portfolio—are the products of interest rate increases in the 1970s. Cash management systems also allow firms to by-pass the intermediation of banks by enabling remote inter-

company lending through debt capital markets. As Podilski(1995) notes, these and similar innovations are testimony to the changing relationships between banks and companies, which are rarely investigated in traditional economic research.

Notwithstanding, even where such innovations—which can only be described to arise from institutional rule breaking—are not common place, we have seen from the Gödel-Markose framework expressed herein that they nonetheless, remain valid entities within the system. The impact of international/ implicit interest rates on domestic activity can therefore not be dismissed as in the mainstream. From this it can also be noted that where other prices enter into the determination of domestic economic activity, the monetary authorities can not have sole control of the ultimate means of payment. That is, there will tend to exist a competition in means of payment.

In effect, our definition of money must depart from the monetarist's usefulness approach(i.e. controllability) and focus on the abstract. In particular towards accepting an application of uncertainty games to the Clower(1967) model of money as those commodities that can be readily exchanged for the majority of others. Under this approach domestic currency is only regarded as money as a result of the states social standing. Thus, its commodities become readily exchangeable and therefore can afford, with the passing of time, to issue and exchange promissory notes (claims on its endownmet of commodities) as opposed to the commodities themselves.

We would also need to consider the interactions between those readily exchangeable commodities and some of the less exchangeable one. This is especially important in the case of Eurocurrency deposits, which can be drawn upon to offset to some extent the burdens of contractory policies. Monetary policy is thus not the sole preserve of the authorities and must be kept in check with what is required by the private sector and hence

activity elsewhere. In chapters 4 and 5 this claim will be explored using the normal impulse response explanatory approaches of the discourse on the monetary transmission mechanism.

It is important to not that this discourse on the exist route theory of globalisation and its implications for monetary policy does not in any way means or form deny that monetary authorities can not undertake policies. However, the key issue is that if these policies encroach on the private sector's undertaking of otherwise profitable activity, there will arise a systematic subversion of the non-end independent policy actions of the state. Private agents will abide by rules until they are forced into adopting the Liar strategy by restrictive state policies.

3.5 Conclusion

Haven expressed the theoretical back ground of the discussion, in the above analysis, it is purported that globalisation should be considered as a subset of a universal set of institutional innovations which encroach on nation-states' ability to effectively enforce their boarder lines; *the end of geography*. In this respect, the institution of globalisation has been shown to arise, through a process of institutional rule breaking, from the failure of those policies pertaining to the enforcement of geography (in terms of policy jurisdiction) to meet the criteria for end-independence. The natural corollary is that states no longer hold full sway over their regulatory frameworks and other aspects of territorial jurisprudence in the sense that geographical locations, in terms of effective policy implementation, no longer matter or at least much less than hitherto.

Two implications of this analysis are then considered. From which it was shown that the upsurge of regionalism can and should only be perceived as an attempt by the state to control or restrict the pursuit of these innovations that constitute globalisation. However, as

suggested herein, this only leads to a proliferation of regulatory circumvention. This chapter has also illustrated the implications of globalisation as regulatory circumventing or bifurcation behaviour on the effective operation of the monetary transmission mechanism of monetary policy. It was thereby argued that institutional innovations have or are making international interest rates a more prolific factor in the determination of domestic economic activity.

Chapter 4
The Model And Preliminary Data Analysis

4.1 Introduction

In chapter 3, it was seen that the underlying spontaneous order theory of globalisation bears claim to a system of decentralised control whereby private agents continually seek to circumvent non-end-neutral state policies. In this manner, it was argued that at the core of economic perseity, are non-predeterminable institutional innovations that act as channels of policy/regulatory circumvention. Specifically, it was argued that upon the advent of such innovations the scope of domestic policy and regulatory structures have been significantly limited or is becoming so. It is this subversion of jurisdictional control that is refereed to as the "*end of geography"* and "*globalisation"* the institutional processes (regulatory arbitrage) by which this end of geography comes into being.

This chapter attempts an estimation of a test of this claim to reduction in policy scope—with particular attention to monetary policy—by means of a structural vector autoregressive (VAR) model. The main objective is to illustrate an increased impact of internationally determined economic time series on domestic economic variables over the period from the 1960s to 1990s. Section 2 describes and justifies the adoption of the utilised model and following from this section 3 provides a brief presentation of the data. In sections 4 the issue of stationarity in time-series analysis is considered whilst section 5 estimates the model and considers its stability using a test of co-intergration. Finally, section 6 offers a summary of the findings of the chapter.

4.2 The Model

As noted in the antecedent chapter, the monetary transmission mechanism in a system of globalisation will concerned with the endogenous behaviour of intermediate and final variables in response to exogenous international impulses. However, there is an inherent identification problem in that the typical operation of independent processes of action occur through a system of reaction functions thereby implying some degree of endogeneity. For Sims(1992), this identification problem is at the core of persisting uncertainty as regards the nature of any monetary transmission mechanism.

The identification procedure utilised here finds its basis in the orthodoxy of studies into the monetary transmission mechanism such as Bernanke and Blinder(1992) to Dale and Haldane(1993 and 1995). The employed methodology is the standard VAR model; a linear dynamic system of the form:

$$Bx_t = \Gamma_0+\Gamma_1(L)x_t + \varepsilon_t \qquad (1)$$

where, x_t is an n x 1 vector matrix of economic variables, B is an n x n matrix of impact multipliers or coefficients, Γ_0 is an n x 1 vector of intercept terms, ε_t is an n x 1 vector of structural innovations and $\Gamma_1(L)$ is a pth order matrix of structural polynomials in the lag operator (L). In order to ascertain any economic meaning in the impulse responses of the variables within the VAR it is necessary to recover the structural innovations from the residuals in the said variables. To this effect we impose restrictions—theoretically these are defined as $((n^2 - n)/2)$—on the system such that the selection of the individual members of the B matrix and its associated structural shocks remain independent. This allows for economic systems to be modelled in a multiplicity of manners. As such, the extensively criticised Choleski or lower triangular decomposition is validated. (see Ender(1995))

In tests of the robustness of the Sims(1980) VAR model Todd(1990) found no decisively conclusive evidence to suggest the rejection of the Choleski decomposition. The main objective of Todd(1990) was to verify the objections of Sims(1986) that modifications to the lower triangular VAR made by critics such as Spencer(1989) were in fact non-arbitrary[10]. Consequently, claims pertaining to the non-robustness of the Sims VAR are not entirely unobjectionable. Todd in fact concludes that researchers should always attempt to test the robustness of their model where time and financial resources allow.

It is from this standpoint the analysis herein follows the lower triangular form VAR of Sims(1980). An explicit assumption within the model used here is that there are no contemporaneous feedback engraved upon the international variables by domestic economic activity. This assumption is drawn by noting that, the relatively high frequency of the data should ensure the weak exorgeneity of the international variable[11].

The validity of the lower triangular VAR approach is further advanced by the fact that the primary concern of this paper is the response of domestic economic activity to shocks in international variables. Thus the only ordering that is of relevance is the placing of international variables at the top of the triangle where we know that the forecast errors are equal to the structural innovations. Given this, responses to one-time innovations in international variables are then defined by the ordering-invariant generalised impulse response function of Koop *et al.*(1996) given by;

$$GI_x(n, \varepsilon_t, \Omega_{t-1}) = E[x_t+n \mid \varepsilon_t, \Omega_{t-1}] - E[x_{t+n} \mid \Omega_{t-1}] \qquad (2)$$

[10] Non-arbitry implies the choice of variables and orderings thereof fail to ensure no strong economic or statistical arguments can be found of either model (the original Sims VAR and the modified VARs) being clearly superior or conceptually different from the other.

[11] This relatively high data frequency also helps to some degree in eliminating possible problems of temporal aggregation.

where E[|] is the conditional mathematical expectation taken with respect to the defined VAR; and Ω_{t-1} refers to the history of the process at time t-1

4.3 The Data Set[12]

In the previous chapter the argument may be recalled that conventional wisdom suggests that at the core of the efficacy of monetary economics is the idea that banks posses a privileged position in the economy in their ability to accommodate certain groups of borrowers. Consequently, monetary policy directed at reducing bank deposits, it is argued, will be transmitted to borrowers.

At the centre of this transmission mechanism is the response of equity prices. For the firm, a monetary shock, which depresses the price of equity, implies managers have less equity stake in their firms. This was argued to result in an escalating level of moral hazard and adverse selection thus forcing a credit crunch. For the households, the effect of a reduction in equity prices is an erosion of income from financial assets and thus heightening the likelihood of financial distress. Hence, creating reductions in expenditure on consumer durables and housing. In both cases (i.e. firms and households) the orthodoxy implies a decline in price and output growth.

Contrary to this, the central premise of this discussion is that the aforementioned nexus of economic activity will, in a model of exit routes, become more dependant on, or related to international interest rates. Moreover, the uneven correlation of economic, social political and power structure leading to prolong processes of litigation between the state and the regulatory arbitrager can be seen to create dispositions towards regionalism and at the extreme, federalism. The 1992 ERM crisis for example has been shown by

[12] All data is obtained from Datastream and have been put into log form as denoted by the "L" before the respective codes used.

Markose(1998b) to fall under the underpinning model of regulatory arbitrage. Thus the "rush to union" amongst the EU member(or prospective member) states bears testimony to this claim, viz. that globalisation results in the increased political dive towards the regionalisation of economic activity.

The Italian experience on the aftermath of the ERM crisis was typified by a dogged commitment to the trinity of the ERM, EMU and European federalism. In fact, it was asserted at the time that "ERM membership is the most available signal of Italy's Eorupean Commitment … it remains the best insurance against political collapse and hyperinflationary suicide"[13]. Further vindication of the claim of regulatory arbitrage being the affect of regionalism is offered by the Finnish experience. Here, contractionary policies following the collapse of trade links with the former Soviet union and the November 1991 announcement to maintain parity with the ECU eventually resulted in speculator attacks which threatened the banking system. Nevertheless, as with Italy, commitment towards EMU membership was heightened on the aftermath of the crisis.

With the intention of elaborating on the underlying claims of this thesis, the collected data set consists of 414 monthly observations from 15/06/60 to 15/11/94 for the Italian (I) and Finish (F) prices (P)—the change in the consumer price index for the basket of all goods—and output measured by industrial production (Y). The international interest rate is defined by the interest rates on three month US Dollar deposits in London (L3M)[14]. The use of Eurodallar interest rates has its basis in the mere fact that they are the most commonly referred to innovations of regulatory bifurcation. Moreover, data on Euro-Lira and Markka deposits are limited.

[13] See 'Italy's Fight for Credibility', *Financial Times*, 12 Nov. 1992, pp20.

[14] At this juncture it is worth noting that additional variables could be incorporated into the VAR such as exchange rates, retail sales. However, since the objective of the paper is to highlight a growing

4.4 Preliminary Data Issues and Model Estimation and Identification

4.4.1 Stationarity: The Appropriate Unit Root Tests

General consensus in the applied econometric orthodoxy is that a fundamental problem in analysis is the inability to obtain an ensemble—a multiplicity of time series data of the same process over the same time period. Only one set of time-series data realisations can be observed over any given period of time. As a result, models incorporating such series are at risk of specification errors and thus spurious interpretations. In fact for such problems to be eliminated, the series must be sufficiently approximated by long-term averages derived from a single set of realisations. In other words, the series most be stationary. Specifically, random disturbances to the series must have only temporary effects and, over time, the effects of the shocks must dissipate and the series revert to its long-run mean level. Thus, long-term forecasts will converge to the unconditional mean of the series.

Consider the series x_t, generated by the stochastic process

$$x_t = \phi_1 x_{t-1} + \phi_2 x_{t-2} + \ldots + \phi_p x_{t-p} + u_t + \varphi_1 u_t + \ldots + \varphi_p u_{t-q} \quad (3)$$

which simplifies into the first order autoregressive AR(1) process:

$$x_t = \phi_0 + \phi x_{t-1} + u_t \quad (4)$$

importance of interantational rates in the determination of domestic economic activity, at this point an extensively detailed analysis is not essential.

with the homogeneous solution

$$x_t = \phi_0/(1 - \phi_1) + \sum_{i=0}^{\infty} \phi_1 u_{t-i} + A(\phi_1)^t \quad (5)$$

where ut is a white noise disturbance and ϕ_1 is the characteristic root of x and A() an arbitrary constant.

Moreover, $0 < |\phi_1| < 1$ implies x_t has an unconditional mean of zero and exhibits a disposition towards fluctuating around zero. That is, either the series started infinitely far in the past or must always be in equilibrium. In which case, the series is stationary (i.e. $\Delta x \sim I(0)$). On the other hand, $\phi_1 = 1$ indicates the presence of a unit root (i.e. it is non-stationary) and does not have an unconditional mean and tends to infinity over time. in this latter case the standard OLS estimator of ϕ will be biased irrespective of sample size. Hence, resulting in the erroneous acceptance of non-stationarity where indeed the series is stationary.

Alternative tests have been devised to determine the existence of unit roots, the most widely used of which are the Dickey-Fuller (DF), Augmented Dickey-Fuller (ADF) tests of Dickey and Fuller(1981) and the Phillips-Perron (PP) nonparametric tests of Phillips and Perron(1988). Where these tests suggested the presence of unit roots—specifically the non-rejection of the null hypothesis—was customary for researchers to obtain stationarity by taking differences. Moreover, where these differences did not eliminate the problem of unit roots it was assumed the series followed a deterministic trend only removable by regressing the series against trend term.

It has nevertheless become conventional wisdom that differencing does not readily eliminate the problems of non-stationary time series data nor is the identification of non-stationarity as concrete as previously thought. For instance, Perron(1989) in challenging

the claims of Nelson and Plosser(1982) that most macroeconomic data are unit root processes shows that the conclusions of the standard tests most be viewed cautiously. In particular, Perron proved that where structural breaks are persistent, the various DF and PP tests are biased towards the non-rejection of a unit root even if the series is stationary before and after the structural break. This is because as the estimated value of ϕ tends towards unity the aforementioned processes tend towards a random walk plus drift and mimic linear trends. Thus ϕ is biased towards unity. This problem is all the more aggravated where these structural breaks are not clearly visible from diagrammatic representations of the series. To illustrate consider figures 4.1 and 4.3.

Figure 4.1 Structural Breaks In The Interest Rate on 3-month US Dollar Deposits in London (L3M).

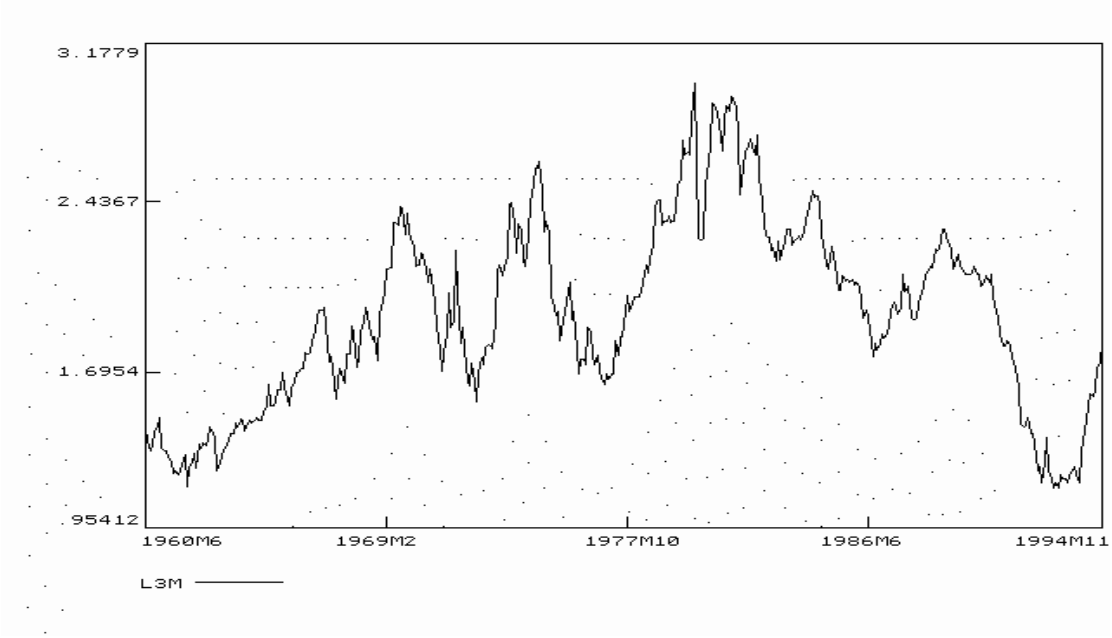


Figure 4.2 Structural Breaks in Italian (LIY) and Finish (LFY) Output

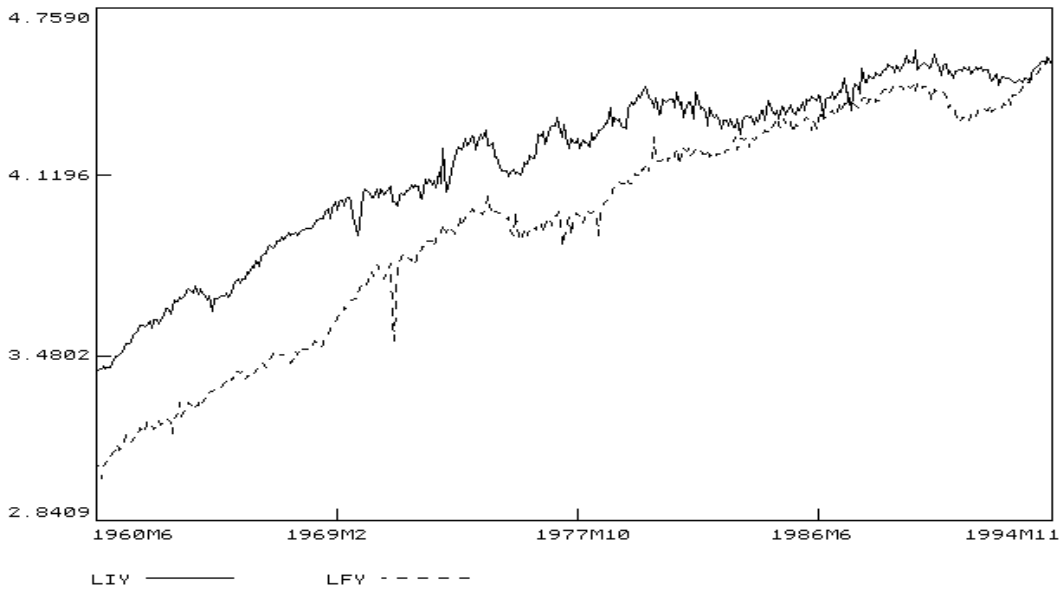
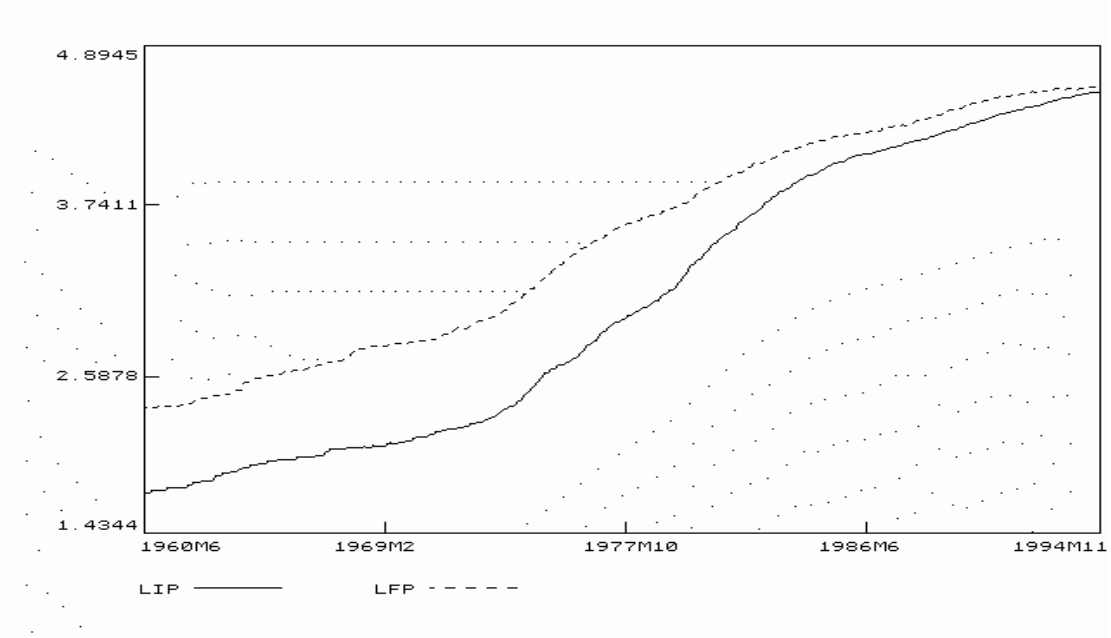


Figure 4.3 Structural Breaks in Italian (LIP) and Finish (LFP) Prices



In the former, we see that for the most part the mean of interest rates paid on 3-month US Dollar deposits in London changes at different sections of the observations. In figure 4.2 however, structural changes are not as vividly obvious. Yet, on closer inspection we see that the slope of the trend in the data appears to have changed. None of these changes would be accounted for in the standard tests for unit roots and the conclusions thereof may thus be spurious. To this effect, Perron in providing a means of testing for unit roots in face of structural breaks concluded that most macroeconomic time series were indeed (trend) stationary processes afflicted by structural breaks.

Furthermore, Monte Carlo simulations have shown that the various unit root tests are necessarily of low power—the probability of rejecting a false null hypothesis of a unit root. They do not have the power to distinguish between unit root and near unit root processes. Thus they too often tend to indicate that a series is not stationary when in fact it is. They are also incapable of determining whether a series is trend stationary or drifting processes. This is because trend stationary processes can be arbitrarily well approximated by unit root processes. Moreover, these tests are unable to determine the nature of deterministic variables. Typically of the form

$$\Delta x_t = \alpha + \gamma t + \beta x_{t-1} + \sum_{i=2}^{p} \theta_i \Delta x_{t-i} + \in_t \qquad (6)$$

and testing the null that $\beta = 0$, unit root tests are subject to problems in that additional estimated parameters reduce degrees of freedom and the power of the tests. Thus couple with the test statistics depending on the independent variables incorporated into the model, unless we are ostensibly certain of the data-generating process, the power of the test may decay to zero. Unit root (stationarity) tests may therefore lead to an adherence to falsities in model estimation.

4.4.2 Stationarity and Structural Form

With these considerations in mind the satationarity tests undertaken here follows that prescribed by Perron(1989) who argued that the vast majority of macroeconomic data are subject to generation processes of the following form:

$$x_t = \alpha_0 + \mu_1 D_L + \mu_2 D_P + \alpha_2 t + \alpha_1 x_{t-i} + \sum_{i=0}^{k} \beta_i \Delta x_{t-i} + \epsilon_t \quad (7)$$

$$x_t = \alpha_0 + \mu_3 D_T + \alpha_2 t + \alpha_1 x_{t-i} + \sum_{i=0}^{k} \beta_i \Delta x_{t-i} + \epsilon_t \quad (8)$$

$$x_t = \alpha_0 + \mu_1 D_L + \mu_2 D_P + \mu_3 D_T + \alpha_2 t + \alpha_1 x_{t-i} + \sum_{i=0}^{k} \beta_i \Delta x_{t-i} + \epsilon_t \quad (9)$$

where, D_L is the level dummy variable such that $D_L = 1$ for all $t > T_B$ and zero otherwise given that T_B refers to the time of the structural break. D_P is the pulse dummy variable whereby, $D_{P.} = 1$ if $t = T_B+1$ and zero otherwise. D_T is an indication of drift and defined as $t - T_B$ if t> and zero elsewhere. Note that (7) refers to the case where there is a one-time change in the mean of a unit root process; (8) refers to the case of a change in the trend function of the data generating process and (9) is a combination of (7) and (8). Under the null hypothesis of a unit root. Under the null, $\alpha_1 = 1$, $\alpha_0 \neq 0$,$\alpha_2 = 0$ $\mu_1 = 0$ (except in (8)), $\mu_2 \neq 0$ and $\mu_3 = 0$.

These tests are applied to the various variables based on figures 4.1 and 4.3 having divided the data set into two groups defined by the periods 1960 to 1979 and 1980 to 1994. The key structural breaks assumed in these tests are; the collapse of the Bretton Woods System in February of 1973; the oil price decline of the early 1980s (only applicable for Italian output), and the 1992 ERM crisis. For the respective sub-samples of data the "*break fraction*" (λ) are approximated to 0.6 and 0.9; implying that 60% and 90% of the observations occurred before the structural break. Also truncation lags (k) are selected on

the basis of AIC and SBC on the ADF tests on the first difference of the variables. Note also that tests are carried out at the 10% level.

For the sample drawn between 1960 and 1979 it was found that the null $\alpha_1 = 1$ {0.58500(-2.2632)} for L3M under model (7) could not be rejected[15]. Model (8) used for the other variables. It was found that both LIY and LFY where stationary with α_1 coefficients of {-.17618(4.2253)} and {-.24632(6.9667)} respectively. There was some ambiguity regarding the μ_3{-.4543E-3(2.5240)} coefficient for LIY for which the null can be accepted at both the 5% and 10% levels. We accept the null for both sets of prices (LIP, LFP) with α_1 coefficients of {-.019532(.86890)} and {-.017878(1.2991)}.

Results obtained for the 1980-94 sample space tends to be ambiguous in applying model (7) to L3M an α_1 coefficient of {-.064590(2.3007)} was obtained. However, the null of $\mu_2 \neq 0$ and $\mu_1 = 0$ can be rejected since μ_2{-.090415(3.9293)} and μ_1{.083281(4.3590)} are statistically significant at the 5% level. Model (8) the null is rejected for LIP with α_1{-.079503(4.6315)} and μ_3{-.5001E-3(3.5460)}. LFP on the other hand, was found to be ambiguous given α_1{-.035117(3.4915)} rejects the null at the 10% level and μ_3{-.2246E-3(3.1759)} accepts the null at the 10% level.

This in mind, whilst its customary to use the fist differences of the variables to eliminate non-stationarity, it is important to test for model stability as indicated by cointegration between the variables.

[15] Note that the values in (.) refer to the modulus of the t-statistics on the varriable

4.5 Model Estimation and Stability

4.5.1 Model Estimation.

As a precursor to the model stability test the estimation of the unrestricted VAR incorporating the log of 3 month US Dollar deposits in London and both Italian and Finnish output and prices must be estimated[16]. One must also incorporate structural shocks which may affect the relationships between the variables. For the sample period between the 1960 and 1979 these structural changes are captured by the dummy variables DT, which, captures the slow down in the growth rates of output and increase in that of prices following the collapse of Bretton Woods and the conjoined oil crisis; the collapse of the Bretton Woods System is captured by the DP. An additional dummy (BW) is incorporated to account for the cross variable relationships during the Bretton Woods era.

For the 1980-94 sample space, structural changes are accounted for by the dummy variables, DERM, DT1 and DT83 which depict the 1992 ERM crisis, the change in output growth following the crisis and upon the collapse of oil prices in the early 1980s. these were found to be statistically significant at the 2.9% level or better under the log-likelihood ratio test of deterministic and exogenous variables in the VAR. An examination of the transmission of shocks in each of the variables to the others by the utilisation of the Granger non-causality test, indicates that any transmission of shocks in the model tends to be cross-variable as opposed to being from any one variable to all the others. For the sample space across 1960-79 the null of non-causality was rejected in most variables at the 3% level. Across the period 1980-94 the evidence of non-causality was much stronger with rejection at levels less than 1%.

[16] The estimated VARs are of orders 1 and 7 respectively for the two sample spaces. These orders are determined according to the Akaike information criterion—defined by Tln(residual sum of squares) + 2n

4.5.2 Model Stability: The Cointegrating VAR

Given the problems of unit root tests for stationarity, Sims(1980) has recommended that even in face of uncertainty in the determination of stationarity in the variables, attention should be turned to the stability of the model. In VAR analysis, it is argued, stationarity is not essential in determining the relationships between variables–which is the core purpose of these models. The pre-eminent argument against differencing to obtain stationary outcomes is that it leads to a loss of information regarding co-movements in the data. Moreover, adding low frequency variables (to capture linear trends) with no clear economic interpretation leads to uncertainty in the estimation of long-run effects. Accordingly, it is affirmed that as long as there exists some linear combination of the non-stationary variables within the VAR that is stationary—the non-stationary variables in the VAR are cointergrated—differencing and de-trending are unnecessary. Thus, for any given x_t vector containing n variables all of which are integrated of order I(d)—i.e. required to be differenced d times to yield a stationary process—cointegration implies the existence of a linear combination $z_t = \alpha x_t$ of its constituent variables such that z_t is I(d-b) for d=b and where α is the non-zero cointergrating vector.

Of the key methodologies generally used to test for co-integration namely, the two stage residual based ADF method of Engle and Granger(1987); Johansen's full information maximum likelihood (FIML), the following model estimation utilises the latter. This is particularly because the former imposes restrictions whereby one is required to take one variable as dependent and regress the others on it. This is particularly undesirable since the test for cointegration should be invariant to the choice of the variable selected for

where n is the number of parameters estimated and T is the number of usable observations—following a test for serial correlation in the equations defining the data generation process of each of the variables.

normalisation: a problem, which would be compounded in the multiple variable case considered here.

This in mind the procedure adhered to here is the ML vector error correction model of the form;

$$\Delta Y = \phi_n a'_{0y} + t_n a_{1y} - Z_{-1} \prod_y - \Delta Z_p \Gamma'_y + W\Psi_y + E \qquad (10)$$

where $\Delta Y = (\Delta y_1, \Delta y_2, \ldots, \Delta y_n)'$; $E = (\in 1, \in 2, \ldots, \in n)'$; $\phi_n = (1,1,\ldots,1)'$;
$t_n = (1, 2, \ldots, n)'$; $\Gamma_y = (\Gamma_{1y}, \Gamma_{2y}, \ldots, \Gamma_{p-1,y})$; $\Delta Z_p = (Z_{-1}, Z_{-2}, \ldots, Z_{1-p})$;
$Z_{-i} = (\Delta z_{1-i}, \Delta z_{2-i}, \ldots, \Delta z_{n-i})$, $i = 1, 2, \ldots, p-1$

and having the log-likelihood function:

$$\ell n(\varphi; r) = (-nmy/2)\log 2\pi - (n/2)|\textstyle\sum_y| - (1/2)\mathrm{Tr}(\sum^{-1}_y E'E) \qquad (11)$$

where φ is the vector of unknown parameters of the model and r the assumed rank of $\prod_y$.

For the period 1960-79 both the Maximal Eigenvalue (31.4808 > 31(95%)) and the Trace of the Stochastic Matrix (65.2676 > 58.93(95%)) suggests the existence of two cointergrating vectors (r=2). From, the error correction (ecm) terms obtained for the variables during this period, it was discerned that there was little evidence of cointegation in models where L3M wass used as the dependant variable. Both ecms coefficients obtained {-.043151(.615)} and {.12735(.139)}are found to be statistically insignificant at both the 5% and 10% levels. However, in at least of the recovered ecms for models in which the real variables are considered dependant, there was evidence of cointegration. This would suggest that given the data set from the period between 1960 and 1979, there was no long-run relationship between the variables in terms of the Italian and Finnish output and prices determining the values of L3M. This could be consequential of the limited use of Eurodollars at the time.

In the second sample space, the Maximal Eigenvalue {25.3721 > 24.35(95%)} and the Trace of the Stochastic Matrix {45.9491 > 39.33 (95%)} suggests the existence of two

cointegrating vectors (r=3). In this the second of the sample spaces considered, it is worth noting that L3M was found to have an ecm of {–0.28909(.000)} which is statistically significant at the 1% level when considered the dependant variable, suggesting a change in the long-run relationship between the variables over the period from 1960 to 1994. Ecms of all other variables as in the previous sample space are also found to be statistically significant the 10% level or better. Tables 4.1 and 4.2 below show the selected ecms for the respective variables.

Table 4.1 Selected Error Correction Terms For Variables (1960-1979)

Variables	ecm Coefficient	p-value
L3M	ecm2(-1) .043151	.139
LIY	ecm2(-1) -.012981	.000
LIP	ecm1(-1) .013137	.044
LFY	ecm2(-1) -.031450	.000
LFP	ecm1(-1) -.0073610	.024

Table 4.2 Selected Error Correction Terms For Variables (1980-1994)

Variables	ecm Coefficient	p-value
L3M	ecm3(-1) -0.28909	.000
LIY	ecm2(-1) -.059305	.014
LIP	ecm2(-1) .014813	.000
LFY	ecm2(-1) -.060187	.002
LFP	ecm1(-1) -.0001613	.024

From these results, it is concluded that the model suggested in section 2 above is stable regardless of the ambiguity in determining stationarity in the data generating processes for each of the variables. It is therefore possible to estimate the persistence profiles of Italian and Finnish output to shocks in the interest rates on US Dollar deposits in London, which will be the subject of the proceeding chapter.

It should be noted that this conclusion presumes that the Eurodollar interest rate is not considered as a dependant variable within the model. This is further justified by the direction of causality described in both chapter three and section one above in defining the monetary transmission mechanism.

4.6 Conclusion

In this chapter the aim has been to present a model for the estimation of the argument relayed in chapter 3 that given the underlying spontaneous order theory of globalisation implies deterioration in the scope of domestic policy and regulatory independence. The chapter estimates this claim to reduction in policy independence by means of a structural

vector autoregressive (VAR) model incorporating a means of illustrating an increased impact of internationally determined economic time series on domestic economic variables over the periods from the 1960-79 and 1980-94. A brief presentation of the data was provided. Following from which, the discussion proceeded to consider the stability of the model (the central issues of stationarity and co-integration in time-series analysis) and the nature of relationships between the variables and nature of exogenous/ deterministic variables to be incorporated. It was concluded from these that the estimated model, as far as is possible, can be considered as empirically valid.

Chapter 5
Empirical Results: Analysing the Impulse Responses of Domestic Economic Activity to International Monetary Shocks

5.1 Introduction

The main assertion of the previous chapter saw that a simple model of globalisation as an escape from regulation could be presented with the aid of a stylised VAR incorporating international interest rates and real variable gauges of domestic economic activity. The compendious explanation for this as expressed in chapter 3 is that the indication of an increasing significance of international interest rates in determining domestic economic activity serves as an indication of the wide-spread employment of those institutional innovations that constitute globalisation. Consequently, a system of generalised impulse responses are derived from the VAR over the two sample periods between 1960 and 1994.

In the current chapter, these derived impulse responses are excogitated with the view of determining how domestic activity responds to shocks in external interest rates (the Eurodollar rate) and whether these responses are more persistent in the second sample of observations (viz., the period 1980-1994) than in the 1960s and 1970s when euro-currency markets were relatively new. These issues are dealt with respectively in the second and third sections of the chapter. In section 4 the findings are considered in terms of the spontaneous order theory of globalisation expressed in chapter 3. Finally section 5 summarises the findings of the discussion.

5.2 Defining International Monetary Transmission

Figures 5.1 and 5.2 plot the generalised impulse responses of each of the five variables (interest rates on 3 month US Dollar deposits in London (L3M), and Italian and Finnish outputs and prices (LIY, LIP, LFY, LFP)) across both sample periods with respect to a one standard error shock equivalent to a 1% point rise in the return on 3 month US Dollar deposits in London. It should be noted that the ordering of the variables in the VAR is as depicted by the arrangement in the figures. Observe also that except in the case of interest rates, which are delineated as percentage point dynamism relative to base, the log form of the variables implies their interpretation as cumulative growth rates relative to base.

As is consistent with international economic theory, the shock to interest rates associated with money denominated in foreign currency (US Dollar) will tend to result in an increase in domestic output. That is, by pivoting the rate of currency exchange in favour of the domestic economy (Italy and Finland), autochthonous output becomes more attractive due to the relative price decrease. Though not depicted, we can also conclude that domestic share prices should rise.

It is also evident from the figures that the transmission of the Eurodollar interest rate on prices is only felt after it the effect on domestic output has first been recognised. Nevertheless, this is not particularly clear for the 1960s-70s sample pace. In particular, following an initial decline, Finnish prices simply revert to its mean. The Italian experience is an increase following an initial decline. The initial fall in prices may be the consequence of the omission of other variables. However, the stated results are consistent with interest rate-price relationships evident in the standard literature on the monetary transmission mechanism. Dale and Haldane (1995) for instance note “that prices are set in accordance with some cost mark-up strategy”. Thus until demand is affected sufficiently to warrant

change, prices will lag behind output. Hence leading to a sequence suggestive of shocks to the rate of return on 3 month US Dollar deposits in London moving the Italian and Finnish economies up and down a short-run non-vertical Phillips curve.

This is of especial importance since, the underlying thesis of globalisation depends on autonomous private agents having access to some alternative dimension and that by definition—under the Gödel/Markose system—the employment of this alternative can not be predetermined let alone prevented. In the simple model expressed here this alternative is the Eurocurrency market and to meet a condition of globalisation must be of influence in determining domestic output and prices.

The association of globalisation with international convergence (internationalisation) is thus brought to light. Convergence, if any, is necessarily in terms of effects on domestic activity of changes elsewhere, not the tangible form of closing the gap between developed and developing countries or the relative equating of interest rates as under the Mundell-Fleming model. The focus on convergence and disregard of the exploitation of differences between different spatial or virtual regions has been shown in chapter 2 as being the mortiferous pitfall of the traditional discernment of globalisation. From the simple model expressed here, it should be of no surprise that regionalisation of economic activity between contiguous—in the spatial and ideological sense—states is an attempt at interlocking policies as to reduce the effects of activity elsewhere. The EMU for all its supposed advantages, is an attempt at eliminating the Liar/rule breaking strategies employed by currency speculators and other regulatory arbitrageurs which have been shown to have precipitated the ERM crisis of 1992.

Figure 5.1 Generalised Impulse Responses of Italian and Finnish Economic Activity to Shocks in Eurodollar Interest Rates (1960-1979)

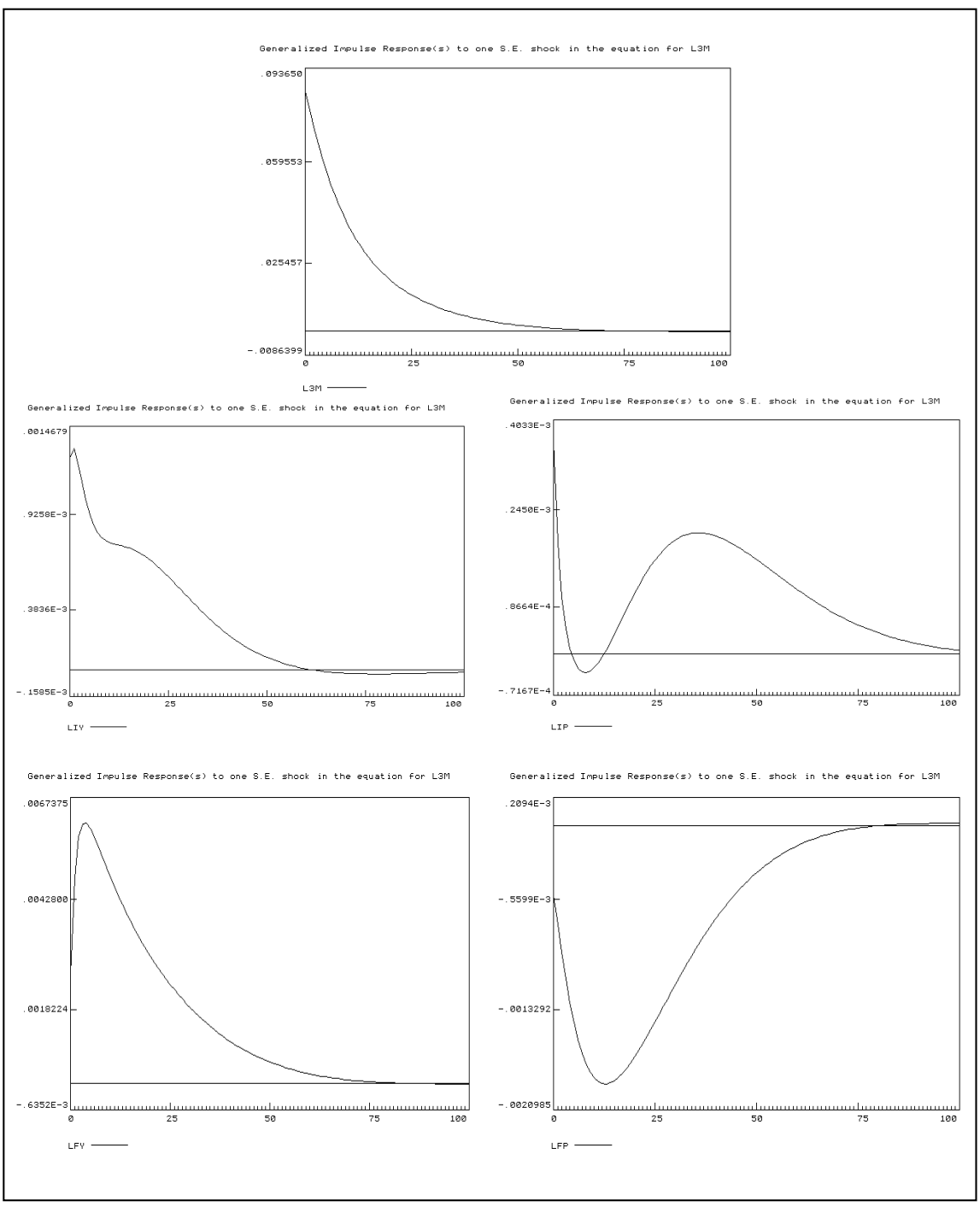
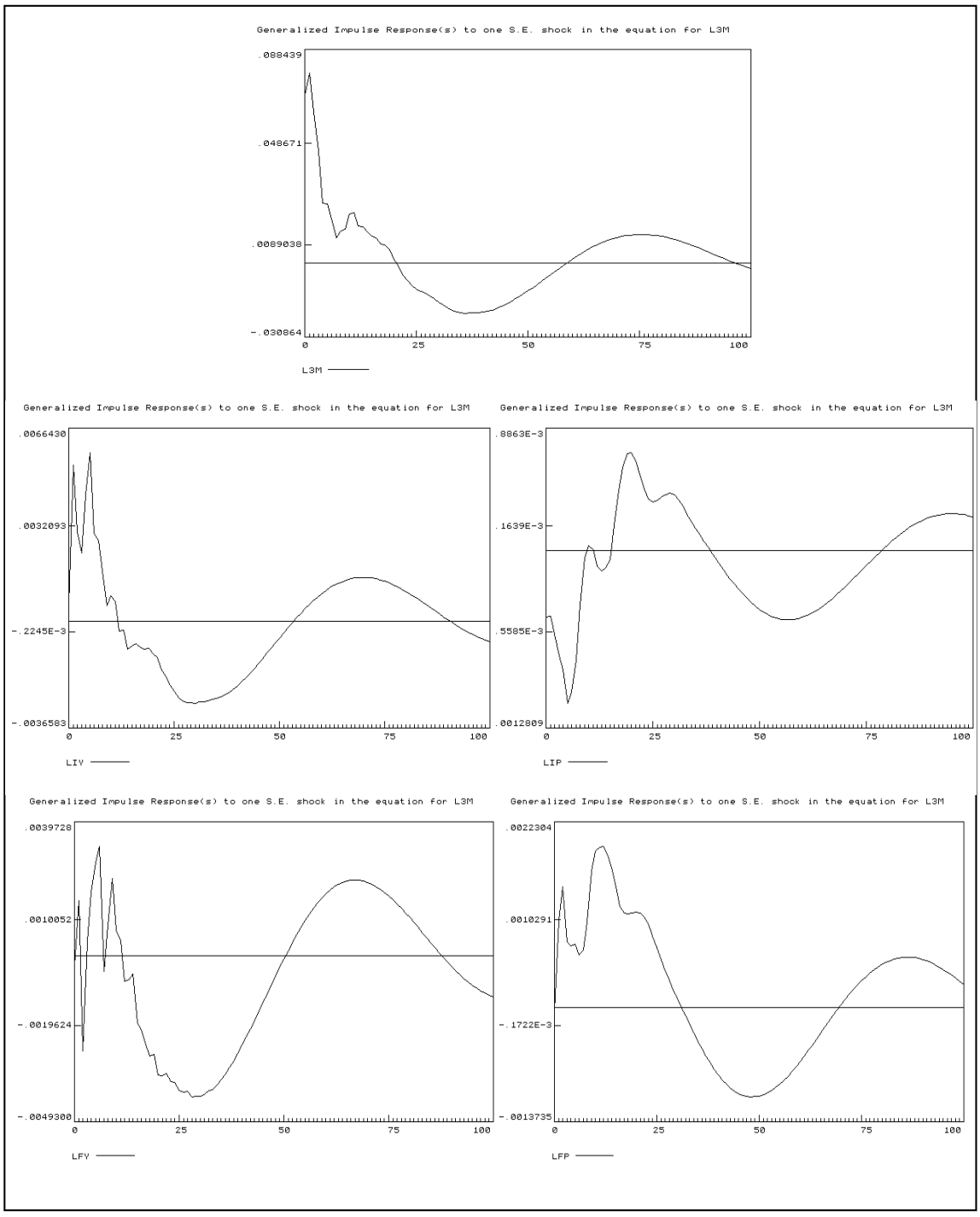


Figure 5.2 Generalised Impulse Responses of Italian and Finnish Economic Activity to Shocks in Eurodollar Interest Rates (1980-1994)



5.3 Period Comparison

Of central importance to the exposition of globalisation considered here is the claim that the scope of state policy/regulatory structures has been significantly compromised by the proliferation in employment of the Liar/rule breaking strategy. Accordingly, a simple but powerful indication of this erosion of centralised control structures of the state can be provided by an experiment. To illustrate, consider a comparison of the two sample spaces utilised within this discourse. The rejection of the proposition that globalisation is an institution of circumventive innovations is only possible if it can be proven, with the aid of the derived impulse responses, that Italian and Finnish price and output dynamics were less responsive to shocks in the Eurodollar rates in the latter of the two sample spaces. This in mind, consider the speed of the initial responses of prices and output to the shock in the Eurodollar interest rate. It is clear from figures 5.1 and 5.2 that these responses are much faster for the second sample space than in the case of the period between 1960 and 1979. The peak in responses in the former are typically instantaneous, occurring within the first ten months following the shock. This is compared to the 3 to over 25-month delays until the full responses of the shocks are felt for the period between 1960 and 1979.

Moreover, upon directing our attention to both the magnitude and persistence of the responses we discover that not only are the initial pulses in relation to the increase in interest rates on 3-month US Dollar deposits in London generally larger in the 1980s and 90s, the shock results in a cycle of oscillation around equilibrium for the respective variables. Likewise, these oscillations extend well beyond the 8-year horizon depicted in the figures. Shocks in international rates are thus more persistent in their effects on domestic activity in the 1980s and 1990s than in the earlier periods. In fact, responses to interest rate shocks between 1960 and 1979 fade out over a prolonged period of time. They do not tend to lead to cyclical fluctuations in economic activity.

5.4 The Observations and the Exit Route Theory of Globalisation

In the litigious world of spontaneous order processes, non-end-neutral rules will tend to be sustained only when individual liberty is encroached upon by the state. In fact in such a world, the existence of a given set of relationships will not be guaranteed. Simply because certain relationships are seen to hold or deemed necessary and important over long periods in history (for example central banks and our definition of money) does not imply they are indurate. The substance of any given set of relationships, according to the Gödel-Markose framework used here, depends on their ability to remain unscathed in face of litigation—of which globalisation is just one institution—and in absence of punitive incentive structures.

In context of the current deliberation the purchase (lending) and sale (borrowing) of Eurodollars ensures, that where monetary policy is pursued with the aim of influencing credit availability, it is possible for private agents to frustrate the policy objective of the authorities as is stipulated by equation (5) in chapter 3. With the proliferation of such deposit alternatives in the 1980s and 1990s it is of no surprise that we find evidence of greater persistence in responses of output and prices to shocks in interest rates on 3-month US Dollar deposits in London. Consequently, the undertaking of econometric analysis based on some set of preconceived economic models of past relationships is necessarily objectionable. If one ignores the spontaneous order, and thus intrinsic complexities, underpinning the considered system, definitions and inferences drawn wherefrom will be sedate misrepresentations. As noted in chapter 2 this is the problem with the mainstream conceptualism of globalisation.

For instance, the mere fact that shocks in Eurodollar interest rates can lead to cycles in local economic activity, as demonstrated here, is perhaps cause for concern. Whilst, not

being grounds for the imposition of controls—we have seen these only aggravate things—it serves as a substratum by which one can claim a need for theoretical reconfiguration within the mainstream. It may be of little substance to measure money in terms of the numerous forms of deposits and other assets or their counterparts denominated in local currency and then estimate their impacts on economic activity as do Bernanke(1988), Bacthelor(1995), Chrystal and Macdonald(1991), Astley and Haldane(1995) and Matthews and Ioannidis(1995). The systemic undertones where alternate dimensions/exit routes are included are, bluntly put, far more complex. Regulation induced proliferation of deposit substitutes and of schemes for paying implicit interest creates a need to define statistical counterparts to concepts of money and its opportunity costs in an [altogether more theoretical and] evolutionary manner (Kane(1983) pp.97).

On the theoretical level, it is also possible to question theories of central bank credibility and the role of the conservative central banker. The ability of the private agents to enter into alternate non-calculable dimensions implies that even the actions of the conservative central banker are likely to be subverted regardless of his/her credibility. Thus, whilst, Mindford(1995) is correct to allude to policy outcomes being a result of the desires of private agents, these outcomes are not a result of the existence of a democratic process, they are the result of the liberty of the agent. In particular, as noted under the Kantian agenda whilst any rule/law may prohibit an action that law does not in any way constrain the individual's liberty.

This said, being extremely stylised and focused, the author does not contend that the econometric analysis undertaken herein is an indisputable or the most adequate test for globalisation as defined under the Gödel-Markose framework. Furthermore, the incompleteness theory by its nature questions the expression models of economic activity in terms of predictability and controllability. Consequently, econometric models and their

interpretations will generally be subject to question. Nevertheless, the above model is justified if only on the grounds that the current paper aims only to highlight the importance of a more extensive understanding of those structures that define the market system and more specifically globalisation. A more definitive exposition of the spontaneous order or Gödel-Markose framework of globalisation would extend to the vast facets of micro and macro economic theory including, for example, taxation, trade, welfare and development economics. However, this is beyond the scope of this paper.

Moreover, as Markose(1999b) notes, there remains a need to explain just why the universality of a system of rules coincides with its end neutrality. "Why are rules of the market of this kind and how do these spontaneously arise from strategic interactions" (Markose(1999b) pp.2). Again the solutions to these issues are well beyond the scope of this paper.

5.5 Conclusion.

This chapter has sought to provide an analysis of the results obtained from the impulse response functions derived from chapter four. In particular by considering the responses of Italian and Finnish output and price to shocks in the Eurodollar interest rate and comparing these responses over the periods 1960-79 and 1980-94, it has aimed to illustrate the definition of globalisation as the need for otherwise profitable economic activity to escape the confines of state regulation.

Upon the discovery that persistence effects were more prolific in the latter of the two sample spaces, it has been argued that there are grounds to consider the understanding of many economic concepts and in particular globalisation and money in the spontaneous order context of exit routes. Monetary policy in face of the exit route theory of globalisation is becoming more confined to the desires of the market system. Essentially,

whilst the exist route theory of globalisation and its implications for monetary policy does not deny the monetary authorities ability to undertake policies. It ensures that these policies must not encroach on the private sector's undertaking of otherwise profitable activity, otherwise there will arise a systematic subversion of these policy rules.

Conclusion

The term globalisation has become widely used in popular discourse on the state of the current international economic climate. Yet in enjoying such acclaim very few have actually given regard to its definition. In this paper, the author has sought to convey the defining characteristics of globalisation. Having surveyed the existing literature, it was contended that the only effective manner in which to understand globalisation involves the initial recollection of the spontaneous order of the market mechanism, which, was argued to be a complex phenomenon beyond the capacity of human design. Formally such non-computable systems were illustrated according to Gödel-Markose construct whereby it is possible to understand globalisation as an institution of self-enforcing/end-neutral rules based on the private sector regulatory bifurcation the results of which are beyond the scope of rational construction.

Referred to as the Exit Route Theory of Globalisation, the thesis illustrates that private agents, given their natural liberty, where prohibited from undertaking certain otherwise profitable activity innovate around these prohibitions by employing the Liar/rule braking strategy . Moreover, whilst seemly paradoxical that the outcomes of this rule braking, are not computable from within the system, they were shown to valid elements of the system.

This definition was consequently shown to have grave implications for our understanding of a vast number relationships. Regionalism for example, was seen to arise as a attempt by states to curtail the institutional rule breaking underpinning globalisation. Nevertheless, the most interesting results were shown to arise in our understanding of the efficacy of monetary policy. With the aid of a lower triangular VAR and generalised impulse response model, it was argued that the accessibility of private agent to alternate

dimensions beyond the scope of the state essentially implies that the undertaking of monetary policy must remain in line with the desires of the private sector and thus activity elsewhere. That is, the employment of exit routes by the private sector implies that states are forced in to using end-independent/end-neutral policies. The upshot of which is that our understanding of money, its counterparts and opportunity cost, must be altered. The monetarist notion of controllability and usefulness must be displaced and a more evolutionary approach embraced. The system of interactions which underpin the market system are much more complex and to define money and thus policy according to some econometric analysis on the monetarist standpoint results in degenerate outcomes that do not reflect the true nature of the market system.

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