A critique of post-Fordist accounts of industrial decentralisation and the politics of the Australian inter-firm networking debate

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A Critique of Post-Fordist Accounts of Industrial Decentralisation and the Politics of the Australian Inter-firm Networking Debate

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Abstract

Through the eighties post-Fordist theories have emerged as an influential account of capitalist restructuring. This thesis critically reviews the two predominant post-Fordist accounts of industrial organisation – the flexible specialisation thesis and Allen Scott's theory of the new industrial spaces. Drawing heavily on the Third Italy, Silicon Valley and other 'industrial spaces' or 'industrial districts', both these post-Fordist accounts argues that the era of flexible specialisation or flexible accumulation is fostering the creation of vertically disintegrated and localised industrial complexes. I develop a number of theoretical, political and empirical criticisms of these accounts. In place of these localist approaches to capitalist restructuring, I suggest that there is a need to examine industrial restructuring at the global, as well as the local level, and investigate the global–local nexus.

This thesis also investigates the Australian inter-firm networking debate. There has been a lot of interest in inter-firm collaboration and networking in Australian industry policy circles. Inter-firm networking is viewed as a means to improve the competitive position of Australian manufacturing industry. Three main theoretical approaches have shaped this debate in Australia – the flexible specialisation thesis, transaction-cost economics, and Michael Porter's work on clusters. The Third Italy model has also been an important influence. The flexible specialisation thesis and the Third Italy model have been particularly influential among sections of the trade union movement.

I argue that both the Third Italy model and the flexible specialisation thesis are poor guides for facilitating inter-firm networking in Australia. The flexible specialisation thesis is based on simplistic and questionable assumptions about changes in markets, production systems and technologies. In Australia, the Third Italy model has been presented in an overly optimistic fashion which gives little consideration of the exploitative features of small scale industrialisation. The dominant Australian
interpretation of the Third Italy model also fails to acknowledge the vital and unique historical and cultural factors which gave rise to the industrial districts in Italy.

The inter-firm networking agenda is also criticised on the grounds that the discourse of 'networking' which dominates Australian discussions depoliticises issues of industrial organisation. There are examples of where dependent sub-contracting is now being called networking. The over-conflated category of 'networking' obscures the dimensions of power and control in inter-firm linkages. I suggest a series of measures to sharpen the political focus of the debate to enable the differentiation of exploitative and other forms of networks.
# TABLE OF CONTENTS

## CHAPTER 1

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1-3</td>
</tr>
<tr>
<td>OUTLINE OF THE THESIS</td>
<td>3-9</td>
</tr>
<tr>
<td>TYPES OF INTER-FIRM COLLABORATION AND NETWORKS</td>
<td>9-14</td>
</tr>
<tr>
<td>AN OVERVIEW OF POST-FORDIST THEORIES</td>
<td>14-25</td>
</tr>
</tbody>
</table>

## CHAPTER 2

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION - OVERVIEW</td>
<td>26-29</td>
</tr>
<tr>
<td>THE FLEXIBLE SPECIALISATION THESIS AND INDUSTRIAL ORGANISATION - THE ARGUMENT</td>
<td>30-36</td>
</tr>
<tr>
<td>FLEXIBLE SPECIALISATION AS IDEAL-TYPE, EMPIRICAL PHENOMENON or NORMATIVE POLITICAL CLAIM?</td>
<td>36-41</td>
</tr>
<tr>
<td>FLEXIBLE SPECIALISATION AS AN IDEAL-TYPEA CRITIQUE</td>
<td>41-48</td>
</tr>
<tr>
<td>FLEXIBLE SPECIALISATION AS AN EMPIRICAL PHENOMENON- THE CRITIQUE</td>
<td>48-89</td>
</tr>
<tr>
<td>FLEXIBLE SPECIALISATION AS A NORMATIVE - POLITICAL CLAIM - A CRITIQUE</td>
<td>89-98</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>98-99</td>
</tr>
</tbody>
</table>

## CHAPTER 3

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>100-103</td>
</tr>
<tr>
<td>SCOTT, INDUSTRIAL ORGANISATION AND TRANSACTION-COST ECONOMICS</td>
<td>103-107</td>
</tr>
<tr>
<td>SCOTT'S FRAMEWORK OF INDUSTRIAL ORGANISATION</td>
<td>107-114</td>
</tr>
<tr>
<td>A CRITIQUE OF TRANSACTION-COST ECONOMICS</td>
<td>114-124</td>
</tr>
<tr>
<td>SCOTT'S THEORY OF INDUSTRIAL ORGANISATION AND THE NEW INDUSTRIAL SPACES</td>
<td>124-128</td>
</tr>
<tr>
<td>A CRITIQUE OF SCOTT'S NEW INDUSTRIAL SPACES</td>
<td>128-133</td>
</tr>
<tr>
<td>THE SCOTT-LOVERING DEBATE</td>
<td>134-136</td>
</tr>
</tbody>
</table>

## CHAPTER 4

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>137-142</td>
</tr>
<tr>
<td>A REVIEW OF THE RECENT AUSTRALIAN INTER-FIRM NETWORKING AND COLLABORATION LITERATURE</td>
<td>142-156</td>
</tr>
<tr>
<td>POLICIES AND PROGRAMMES OF THE MAIN INSTITUTIONAL ACTORS</td>
<td>156-164</td>
</tr>
<tr>
<td>THE AUSTRALIAN ECONOMIC AND POLITICAL CONTEXT</td>
<td>164-167</td>
</tr>
<tr>
<td>EXAMPLES OF INTER-FIRM COLLABORATION IN AUSTRALIA</td>
<td>167-169</td>
</tr>
<tr>
<td>INTER-FIRM NETWORKING, THE FLEXIBLE SPECIALISATION THESIS AND THE THIRD ITALY IN AUSTRALIA - A CRITIQUE</td>
<td>169-180</td>
</tr>
<tr>
<td>THE DISCOURSE OF 'NETWORKING' AND CONSENSUS POLITICS</td>
<td>180-196</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>196-200</td>
</tr>
</tbody>
</table>

## CHAPTER 5

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONCLUSION</td>
<td>201-209</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIBLIOGRAPHY</td>
<td>210-227</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

"The economic order of the Western world is undergoing in this generation a structural change no less basic and profound in character than...‘the Industrial Revolution’. We are passing... over a divide which separates the great era of growth and expansion of the nineteenth century from an era which no one can as yet characterise with clarity or precision."\(^1\) (Alvin Hansen, 1938)

Through the eighties post-Fordist theories have emerged as an influential account of capitalist restructuring, and have played a prominent role shaping the political strategies and policies of labour movements, social democratic political parties, and other Left-wing groups. An example of such influence has been the formation of industry policies to promote the development of inter-firm networks and industrial districts. Both in Australia and overseas, this industry policy debate over inter-firm linkages and industrial districts has been heavily shaped by post-Fordist ideas. This thesis critically reviews post-Fordist accounts of industrial organisation and also attempts to provide a political analysis of the networking and inter-firm collaboration debate and policy initiatives in Australia.

A useful starting point for this work is to briefly recall a seminar organised by the Australian Manufacturing Council entitled ‘Networking our way to Competitiveness – An Australian Perspective’\(^2\). The keynote address delivered by Mr Bruce Herman (President of the New York Garment Industry Development Corporation) was a spirited presentation of the flexible specialisation thesis, the predominant version of post-Fordist theory.\(^3\) Drawing heavily on the industrial success of Emilia–Romagna in Italy,

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\(^2\) The Australian Manufacturing Council, a peak tripartite industry policy body of the Department of Industry, Technology and Commerce (DITAC), held a series of seminars in each capital city of Australia to promote the concept of inter-firm networks. I attended the seminar on Monday 29th April 1991 at Sydney Turf Club, Rosehill.

\(^3\) There is substantial academic debate as to whether flexible specialisation should be considered a branch of post-Fordism. For example, Paul Hirst and Jonathan Zeitlin, argue that the two terms should be considered separately. (Hirst, P., and Zeitlin, J., "Flexible Specialization versus post–Fordism: theory, evidence and policy implications", Economy and Society, Vol. 20, No. 1, February 1991)
Herman argued that Marshallian industrial districts and inter-firm collaboration (networking) are an increasingly important element of competitive advantage and regional economic development. Herman's address went on to cite two examples of networks in New York in the furniture and garment industries, where through collaboration, firms in these mature industry sectors were achieving export success.4

While the content of Herman's paper was straightforward, the context was significant - Herman's paper presented a post-Fordist formula for industrial success to an influential and receptive group of Australian business, government and union leaders. The seminar provided a concrete manifestation of post-Fordist ideas in Australia, and their role in shaping the 'industry policy agenda'.5

Several distinct branches of post-Fordist thought investigate the changing nature of industrial organisation of capitalist production, most prominent are the flexible specialisation thesis developed primarily by Piore, Sabel, Hirst and Zeitlin, and Allen Scott's theory of the new industrial spaces. Both of these perspectives mark a significant change in thinking about industrial organisation. Through much of this century the dominant view has been that the modern corporation would continue to expand. This process of vertical integration was largely understood from the theoretical perspectives of Marx's laws of the concentration and centralisation of capital, Galbraith's techno-structure or some similar explanation.6 In direct opposition to this

disagree. A typology of post-Fordist theories is developed later in this chapter which stresses that post-Fordist theories is an umbrella category under which flexible specialisation and other theoretical approaches should be located.

4 Herman, B., "Competitive Advantage Through Collaboration", presented at the Networking Our Way to Competitiveness Seminar Series sponsored by the Australian Manufacturing Council, April 22 – May 3, 1991. Herman's analysis very closely parallels the work of Charles Sabel to the extent that his presentation commenced with an identification of five factors encouraging the reconsolidation of the region as an integrated unit of production. All five of these factors were taken directly from Sabel, C., "Flexible Specialisation and the Regions", in Hirst, P., and Zeitlin, J., Reversing Industrial Decline, Berg, Oxford, 1989

5 Chapter Four of this thesis will expand upon this theme, and provide evidence of the implementation of policies and programmes derived from this theoretical framework.

view, post-Fordist theories suggest that there is no inevitable logic to the trajectory of corporate giantism, and indeed it is suggested that there is evidence of some economic and technological processes promoting the vertical disintegration, decentralisation and the localisation of manufacturing activities (industrial districts). This challenge to the conventional wisdom has stimulated much academic and policy debate about current patterns of industrial restructuring. This thesis critically investigates these post-Fordist theories and explores their role in shaping the inter-firm networking industry policy agenda in Australia.

OUTLINE OF THE THESIS

This introductory chapter provides an overview of post-Fordist theories. Beyond the flexible specialisation thesis and Scott's theory of flexible accumulation, there are a variety of other post-Fordist theories including the French Regulation School, flexible accumulation, neo-Schumpeterian post-Fordism, the disorganised capitalism thesis and Cooke's theory of flexible integration. It is important to appreciate that there is not one post-Fordist theory. These various post-Fordist theories are analytically different and have quite different policy and political consequences. The flexible specialisation thesis and Scott's theory of the new industrial spaces are differentiated from other post-

7 It is not only in the realm of industrial organisation, industrial districts, and inter-firm networks that post-Fordist ideas have been politically influential. For example, in the United Kingdom, the New Times manifesto of the Communist Party of Great Britain was a strategy based explicitly on the belief that the era of post-Fordist capitalism created new political opportunities, and new sites of struggle and resistance.

"The old visions of the Left have literally been overtaken by history. The orthodox political perspective, which for so long shaped the outlook of the centre-Left-Keynesianism- lies interred in the grave of Fordism. Communism in its "actually-existing forms is undergoing, at the same time, its own crisis, searching for a new road, as both Gorbachev and Tiananmen Square testify." (Hall, S., and Jacques, M., New Times- The Changing Face of Politics in the 1990s, Lawrence and Wishart, London, 1989, p. 16)

Accordingly, the challenge for the political Left becomes to grasp the form of the new era and develop political strategies that create a progressive post-Fordism. In a similar vein, Alain Lipietz, a Regulation theorist, and one time Green candidate for the French Presidency, offers a political programme at least partially informed by post-Fordism. (For example see Lipietz, A., "An Alternative Design for the Twenty First Century". CEPREMAP Working Paper no. 8738, 1988, and Lipietz, A, Mirages and Miracles, Verso, London, 1987) In Australia the primary site of post-Fordist arguments has been in relation to the politics of award restructuring, and the politics of skills formation.
Fordist theories by their strong focus on industrial decentralisation and the localisation of firms.

This first chapter also develops a typology of inter-firm collaboration and networks to provide a 'map' to classify different forms of inter-firm linkages examined in this thesis. Recently across a number of academic disciplines a lot of effort has been made to investigate collaborative or network forms of industrial organisation. This research has identified a wide variety of collaborative forms of industrial organisation or networks, and the typology enables the classification of specific types of inter-firm linkages.

In Chapter Two, the flexible specialisation thesis account of changing patterns of industrial organisation is explored. It is demonstrated that the theory of flexible specialisation is constructed in three different forms: as an ideal type, an empirical phenomenon, and a normative political claim. The debate about flexible specialisation has been confused because these three forms of the flexible specialisation thesis have not been adequately distinguished. Chapter Two separates out these three 'different faces' of flexible specialisation and investigates each in some depth.

Chapter Two also engages in an substantial examination of the much cited industrial districts which are central to any argument about the flexible specialisation thesis. The Third Italy is drawn on most heavily by the flexible specialisation theorists and other post-Fordist theorists. The Third Italy refers to the collection of regions of North-East Italy that have supposedly achieved industrial renaissance through small specialised and interdependently linked firms producing complex manufactures. There has been an intense academic and policy debate which is yet to be resolved about this model of

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8 The terms inter-firm collaboration and networks are used interchangeably through the bulk of this thesis. There are however slight differences in the terminology which are examined in Chapter Four. 'Networks', 'enterprise networks' and 'inter-firm networks' are the predominant terms used in Australia.
small firm industrialisation.9 Some supporters view the Third Italy as a rebirth of artisanal production and the community, and as an escape from Taylorism and corporate giantism. Other critics disagree and suggest that far from providing liberation, the small firms of these industrial districts harbour pre-capitalist forms of exploitation.10 The chapter explores this debate and investigates the reality of the Third Italy, as well as the other frequently cited examples of Silicon Valley, and Japanese manufacturing industry. Examples of the decentralisation of transnational corporations are also examined.

In addition Chapter Two investigates the normative political dimension of the flexible specialisation thesis. In this guise flexible specialisation is presented as an attractive alternative to mass production which can be realised. Some supporters even argue that flexible specialisation provides the microeconomic foundation for new local forms of democracy. Others more modestly suggest that flexible specialisation provides a manufacturing strategy to arrest the processes of deindustrialisation of local manufacturing. Critics, by contrast, suggest that flexible specialisation is politically impotent at best, and at worst is a dangerous theory which celebrates exploitative pre-capitalist modes of production.

Chapter Three investigates Allen Scott's theory of the new industrial spaces. While drawing on many similar empirical examples, Scott's approach is quite different to the flexible specialisation thesis. Scott develops a theory of industrial organisation largely based on a synthesis of transaction-cost economics and a derivation of the French Regulation School. He argues that contemporary post-Fordist economic conditions are

9 There is some confusion about what constitutes a small manufacturing firm. The OECD does not have an established definition, and there is some variation between member states. In Australia, the Australian Bureau of Statistics defines a small manufacturing firm as having less than one hundred employees.

promoting patterns of vertical disintegration and the spatial agglomeration. The result is the formation of transaction rich agglomerations of industrial activity, such as the Third Italy, Silicon Valley, the Scientific City (Sophie Antipolis) of France. However unlike the flexible specialisation thesis, Scott does not necessarily view the industrial spaces as a model worthy of praise or replication, but rather the result of post-Fordist economic processes. This chapter provides an extensive conceptual critique of Scott’s framework, and suggests among other things that Scott fails to acknowledge the significance of non-market forces structuring organisations, and that he ultimately offers a very economistic account of the processes of capitalist restructuring.

Chapter Four reviews and analyses the Australian industry policy agenda in so far as it focuses on the facilitation of inter-firm networking and formation of industrial districts. A central focus is investigating the role of the flexible specialisation thesis in shaping the industry policy agenda. Recently in Australian industry policy circles there has been a lot of interest in the potential of inter-firm collaboration or networking for improving the competitive position of Australian manufacturing. While the Australian agricultural sector has a long history of collaboration through co-operatives, and franchising is rapidly growing in the service sector, collaboration or networking

11 It should be noted that there are two further related 'networking' industry policy agendas in Australia which are beyond the scope of this thesis. These agendas are concerned with building collaborative linkages between the public and private sectors in the areas of research and development (R&D) and government purchasing. In Australian science and technology policy circles there has been a growing interest in fostering linkages between public sector research institutions (universities, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australian Nuclear Science and Technology Organisation (ANSTO) and Defence Science and Technology Organisation (DSTO) and the private sector. The Commonwealth government has developed several schemes and programmes to achieve these goals including the National Teaching Company Scheme, Co-operative Research Centres, Australian Research Council Industry Postgraduate Scholarships, the Generic Industrial Research and Development (GIRD) scheme and the 150% tax concession. The aim of these schemes is to commercialise public sector research and improve research and development capability of the private sector.

The Commonwealth and State governments are also making efforts to develop collaborative linkages between the public and private sectors in the area of government procurement. The National Procurement Development Programme (NPDP) and the NSW Funding for Innovation, Research and State Technology (FIRST) scheme are examples of programmes to assist the innovation and commercialisation of products used within the public sector.

Both the R&D and the government procurement (public-private) linkages have been described as 'networking'. This thesis however is concerned with inter-firm linkages, not public-private sector linkages.
amongst manufacturing firms has been limited. However, inspired by overseas examples and a strong desire to improve the competitiveness of Australian manufacturing, some unions, employer associations, and government bodies have turned their attention to facilitating networking among Australian manufacturing firms.

Chapter Four also considers other theoretical perspectives which have been influential in shaping the inter-firm collaboration debate in Australia. It would be a mistake to think that this agenda was solely shaped by the flexible specialisation thesis. The two most prominent perspectives in this regard are Harvard Business School Professor Michael Porter's work on the significance of vertical collaboration and industry clusters, and transaction-cost economics. As has already been noted, transaction-cost economics provides one of the pillars for the work of Allen Scott, and therefore in developing a critique of his work a detailed description and critique of transaction cost economics is also provided. Also, given the current popularity of Porter's approach, a brief critique is provided in Chapter Four as part of the review of the Australian research and policy initiatives.

In Australia the flexible specialisation thesis and the Third Italy have played an important role in shaping the views of unions and tripartite government bodies toward inter-firm collaboration, networking and industrial districts. My concern is that the flexible specialisation thesis and the Third Italy are highly questionable guides for developing industry policies. Drawing on the wide-ranging critique developed in Chapter Two, I develop a series of criticisms of the adoption of the flexible specialisation thesis and the Third Italy model in Australia. One principal concern is that a critical perspective of the small firm Third Italy model has been lacking from the Australian inter-firm networking agenda. The marginalisation of such criticisms is

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12 This strong interest in inter-firm networking is detailed in Chapter Four where the policies and programmes of the main institutional actors are outlined.

13 The less attractive features of the Third Italy have been identified by some Australian academics.
particularly dangerous when the Third Italy is presented as a formula for industrial success.

Chapter Four also attempts to unpack the discourse of 'networking' which has dominated the industry policy agenda. It is argued that a major weakness of this discourse is that it is insensitive to asymmetries of power and control, and this has contributed to depoliticising the issues of inter-firm linkages and industrial organisation. This failure to recognise the dimensions of power and control obscures the existence of, and potential for, greater exploitation of some workers. It also inhibits the development of successful industry policies. Understanding the political economy of industrial organisation and inter-firm relationships is a crucial element in formulating effective policies for industry development.

I argue that the flexible specialisation thesis and post-Fordist theories, more generally, have contributed to this process of depoliticisation. This however does not necessarily lead to the conclusion that inter-firm networking should be rejected. Given that the networking policy agenda is here, there is an opportunity to give the inter-firm networking debate a stronger political focus. In Chapter Four I address this issue and develop a set of criteria to distinguish different sort of inter-firm networks.

This analysis is extended to consider the influence of post-Fordist ideas in shaping the Australian award restructuring process. It is suggested that here too, post-Fordist ideas have depoliticised industrial restructuring, and have contributed to a 'derailing' of the original trade union vision of award restructuring – the post-Fordist focus on enterprise flexibility has (perhaps) unwittingly legitimated the Business Council of Australia’s agenda for enterprise bargaining and enterprise unionism.\(^\text{14}\) In two areas of Australian

For example, see Stilwell, F., "Regional Economic Policy and Local Enterprise", Journal of Australian Political Economy, No. 25, 1989, pp. 84–85. Yet such work either has not focussed on the issue of inter-firm collaboration, or has been marginal to the mainstream policy debate in Australia.
industry policy, inter-firm networking and award restructuring, from a progressive point of view, the political limitations of strategies informed by post-Fordist theories are very much evident.

The thesis concludes with some possible theoretical directions to overcome the limitations that were identified in chapters Two and Three. It is suggested that it is possible to by-pass many of the problems of the flexible specialisation thesis and Scott's theory of the new industrial spaces, by developing a theoretical framework based on the work of Phil Cooke, Alain Lipietz, Ash Amin and Kevin Robins. These theories offer an account of capitalist restructuring which is more sophisticated than the 'new international division of labour thesis' (NIDL), while not being preoccupied with local, small firms economic development like both the flexible specialisation thesis, and the recent work of Allen Scott.

TYPES OF INTER-FIRM COLLABORATION AND NETWORKS

Before embarking on the main critique of the flexible specialisation thesis and Scott's account of the new industrial spaces, a typology of inter-firm collaboration is required to appreciate the diversity of network forms of industrial organisation. This typology provides a 'map' to locate the contents of this thesis within the broader field of study of


16 On the question of terminology there are some differences between the Australian industry policy and post-Fordist discourses. In Australia, 'enterprise networking' or 'inter-firm networking' have emerged as the accepted terms to describe all forms of inter-firm collaboration which are neither market nor hierarchy. While these terms occur through the broader post-Fordist literature, terms such as 'industrial districts' and 'industrial spaces' are more common. Both the post-Fordist theories, and the Australian networking debate share a focus on linkages between small and medium sized manufacturing firms. However in Australia the term networking is used reflecting the spatial dispersal of Australian industry and the absence of any significant clusters or industrial districts. Also, as has already been noted, 'networking' is a more acceptable category because it depoliticises inter-firm relations, and therefore the discourse of 'networks' is well suited to consensus politics of tripartite forums.
The issue of collaborative or network forms of industrial organisation has received considerable attention outside post-Fordist literature. A recurring theme through recent industrial economics, economic geography, industrial sociology, innovation theory and management literature has been that capitalist industrial organisation is undergoing fundamental change. The neo-classical vision of a capitalist economy as atomised firms (production functions) in a sea of market relations is increasingly at odds with this research trajectory. The intellectual focus has now shifted to explore the different types of external linkages and relationships between firms and organisations and consider these linkages as a firm's external assets or as intangible infrastructure. A major part of this current research, (and for that matter current capitalist strategy) has been to explore (and in the case of the latter, exploit) quasi-market/quasi-hierarchy or network organisational forms. The following list of terms derived from recent literature provides some insight into the intellectual and linguistic effort to explore such inter-firm relationships.

Milieu, fileries, industrial districts, semi-hierarchy, co-making and spot-networking, industrial complexes, industrial spaces, production chains, linkages, clusters, networks, strategic alliances, joint ventures, user-producer links, quasi-vertical integration, sub-contracting, consortia, inter-firm collaboration, trade associations, informal horizontal networks, non-equity co-operative agreements

In order to make sense of these different terms and better understand the current research it is useful to develop a typology of forms of inter-firm collaboration or networks.

17 For example this new found interest in inter-firm linkages is evident in two prominent studies. A major focus of both the OECD Technology / Economy Programme and MIT study The Machine that Changed the World has been on new forms of industrial organisation. Organisation for Economic Co-operation and Development, (OECD), Technology / Economy Programme, Draft SG/TEP, 17 September 1991, and Womack, J., Jones, D., and Roos, D., The Machine That Changed The World, Macmillian, New York, 1990
The variety of forms of inter-firm collaboration may be categorised primarily on the basis of either structure or function. I have found a useful categorisation on the basis of structure, identifies eight variables or factors which distinguish different types of inter-firm collaboration or networks. These eight variables are outlined below.

1. **Number of firms involved:** Inter-firm collaboration can involve two or more firms. Industrial districts or consortia typically involve more firms than a strategic alliances or joint ventures which may only involve two parties.

2. **Localisation of the firms:** Inter-firm collaboration can occur through local interaction or transnationally. Industrial districts and clusters are based on geographical proximity, while strategic alliances are often international. (The focus of this thesis is primarily on localisations of industry.)

3. **Size of the firms involved:** Industrial districts are characterised by small and medium sized firms while other forms of collaboration and alliances involve large transnational corporations. High technology R&D consortia often involve large corporations. The primary interest of the flexible specialisation thesis and Scott's theory of the new industrial spaces is on small and medium sized firms.

4. **Vertical or horizontal collaboration:** 'User-producer' linkages and filieri are an example of vertical collaboration which might occur across industry boundaries. Horizontal collaboration on the other hand occurs between firms engaged in the same activity (intra-industry) (eg. trade associations)

5. **Core or ring structure:** Collaboration can occur between ring firms where there is no systematic lead firm. This is the all ring structure which characterises Marshallian industrial districts. A core-ring structures arises when there is a lead firm in the core co-ordinating ring of linked firms. This core-ring structure characterises the dependent sub-contracting in some industries where only the lead firm sells products on the open market. The dependent firms supply only the lead firm.

6. **Level of formality of collaboration:** Collaboration between firms can either be regulated through legally binding contracts or via more informal cultural mechanisms. Industrial districts are an example of regulation through trust and informal co-operation, while joint ventures and strategic alliances are more often regulated through formal contracts and agreements. Post-Fordist theories are primarily concerned with informal co-operation.

7. **The degree and mix of collaboration and competition:** Firms can either collaborate in one area or many. Industrial districts or flexible manufacturing networks involve collaboration in a variety of activities, while joint purchasing and marketing agreements only involve collaboration in one area. It is also possible for firms involved in horizontal collaboration to engage in direction competition with one another as well. This degree and mix of collaboration and competition is a further variable which characterises specific organisational forms.

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8. **Institutional or cultural environment**: The final variable which categorises particular types of inter-firm collaboration concerns the environment within which the participating firms are located.\(^{19}\)

This taxonomy provides a useful means to characterise the main types of inter-firm collaboration that are detailed in the literature. For example, trade associations are one type of inter-firm collaboration. Trade associations can be characterised by a substantial number of firms in the same industry engaged in horizontal collaboration in the areas of training, research, services and lobbying. These associations are generally formal in structure being legally incorporated bodies, and their establishment is generally conditional on a business culture which can engage in both co-operation as well as competition.

An additional basis for classifying inter-firm linkages is on a functional basis i.e. on the basis of the general benefits of collaboration. Inter-firm collaboration can have a variety of aims and economic benefits. Listed below are some of the advantages of inter-firm collaboration or networks over market based exchange and internalisation (hierarchy).

* **Improvements in economies of scale in production, marketing, R&D and other areas of the provision of information or services.** For example, consortia are a mechanism for generating external economies of scale in areas such as R&D and marketing. Trade associations also aim to generate economies of scale in the provision of information and services for their members. In a small economy like Australia with predominantly small manufacturing firms, the aim of improving (external) economies of scale is very influential.

* **Generation of economies of specialisation.** For example, industrial districts as a dense web of inter-firm linkages enable a detailed social division of labour and thereby improved specialisation.

* **Reduction of uncertainty of transactions.** Networks reduce uncertainty compared with market based exchange while remaining more flexible and adaptable than internalising activities within a firm. For example, in the

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automobile industry, collaborative linkages are being developed between assemblers and suppliers. These linkages ensure quality, and reliability and certainty of supply over the traditional adversarial relationship between assemblers and component suppliers. e.g. Just-in-Time systems

* Improving the flow and speed of information and ideas between firms. Technical know-how and tacit knowledge are not readily transferred via market exchange, and collaborative arrangements can facilitate the exchange of information. The processes of incremental innovation are greatly assisted by vertical 'user-producer' links.

* Gaining access to technology and expertise that is not available via simple market exchange.

* Spreading risks among the participating firms and organisations. This function is particularly relevant for collaborative R&D.

* Networking can enable greater exploitation of labour through sub-contracting to firms with lower wages, longer working hours and poorer working conditions. In this guise networking may seek to by-pass unionised plants and sub-contracting to work small firms with more paternal modes of control. These exploitative features of sub-contracting are well-known.

An alternative and simpler typology of inter-firm collaboration which combines elements of both structure and function is offered by the Australian Manufacturing Council (AMC). Numerous AMC publications suggest that there are two types of networks; production networks and information/service networks. Production networks are based on vertical user-producer linkages, and derive economies of specialisation from the firms in the networks.20 A good example of a production network would be the emerging structure of the automobile industry and the tighter linkages between automobile assemblers and component suppliers. Information/service networks involve firms which share common technologies, customer or markets. These networks provide economies of scale in the provision of information and services to all members of the network.

From the preceding comments it is clear that inter-firm or enterprise networks can perform a variety of different functions and can have quite different structures.

However using the overarching category of 'networking' to describe all forms of inter-firm collaboration, is unhelpful for analysing or understanding specific of inter-firm organisational structures. Yet in Australia, networking has become the dominant discourse and, as shall be demonstrated in Chapter Four presents the Australian debate with particular problems.

Using this typology it is possible to classify the types of inter-firm collaboration which are central to the flexible specialisation thesis and Scott's theory of the industrial spaces. The industrial districts and industrial spaces investigated by these post-Fordist theories are highly localised, involve many small firms in vertical and horizontal collaboration. There is generally no systematic lead firm, and the collaboration is informal and is derived from the local culture. These forms of inter-firm collaboration primarily assist small firms to generate economies of specialisation through each firm specialising in one part of the production process, and external economies of scale through shared marketing and technical intelligence. The inter-firm linkages also improve the process of innovation and speed and flow of information.

AN OVERVIEW OF POST-FORDIST THEORIES

A final task before embarking on a critique of the flexible specialisation thesis and Scott's theory of the new industrial spaces is to provide a brief of overview post-Fordist theories. One of the central points of confusion in post-Fordist debates has been that different branches of post-Fordist theories are rarely recognised and considered separately. The theories have been treated as a single entity without due regard to the significant differences between the various branches.21 The overview commences with a sketch of changes in the global political economy which post-Fordist theories attempt to understand.

21 For example see Mathews, J., Tools of Change. Pluto, Sydney, 1988
Evidence abounds suggesting that capitalist economies are going through a process of fundamental restructuring in response to a crisis originating in the early seventies. Experimentation in new flexible forms of work organisation, wage relations, spatial and industrial organisation, and the increasing use of microelectronics based technologies have all characterised recent capitalist production. The internationalisation of markets and the changes in national strategies of economic management have also been prominent features of capitalist restructuring, with many nations shifting toward deregulation and privatisation. The shape of global geopolitics is also going through a process of rapid and significant change. The end of the cold war, political upheaval in Eastern Europe, the unification of Western Europe, the decline of Keynesian-welfare strategies, and the increasing political and economic significance of the Asia-Pacific region all point to a process of fundamental change. At a cultural level changes of equal significance are taking place. The globalisation and interpenetration of cultural forms is leading to contradictory and paradoxical effects of increased cultural homogeneity between nations, and increased cultural diversity within nations.

While there is widespread agreement that capitalism is undergoing fundamental changes, there is a great deal of confusion as to how these changes can be understood and theorised. Theories of post-Fordism have emerged as one prominent account of these changes. Put very simply post-Fordist theories share the view that Fordism was a stage of capitalism where mass production was aligned with mass consumption in part through government strategies of Keynesian demand management. However, according to the theories, for a variety of reasons (detailed later) there has been a crisis of Fordism and of mass production. The emerging system of production and/or capital accumulation is entering a post-Fordist phase which is dramatically different to its predecessor, and is characterised by new forms of flexibility of capital and labour. There have been a number of different theoretical perspectives which share this starting point but have developed quite independently. This has led to considerable confusion in the post-Fordist debate because the differences between these theoretical perspectives
The typology detailed below suggests that there are essentially six main post-Fordist theories which are:

* The flexible specialisation thesis,
* The French Regulation School
* Neo-Schumpeterian post-Fordism,
* The theory of flexible integration
* The disorganised capitalism thesis
* The theory of flexible accumulation

The following explanation of this typology is far from exhaustive, and serves only to outline and differentiate the various post-Fordist theoretical perspectives. Some of the categories are dealt with very briefly because they are either explored in more detail in the main body of the thesis or are outside the scope of this thesis. 22

**The Flexible Specialisation Thesis**

One highly influential and much debated account of industrial restructuring is offered by Michael Piore and Charles Sabel. Their seminal work, *The Second Industrial Divide—Possibilities for Prosperity* presents a challenging explanation of the current crisis of advanced capitalist economies and proposes some (much contested) directions for renewed national prosperity. 23 This text is the recognised origin of the flexible specialisation thesis.

The analytic entry point for the flexible specialisation thesis is industrial production.

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The thesis suggests that the dominant system of production throughout the bulk of the twentieth century has been mass production, but this system of production has been in crisis since the mid-seventies. It is argued that this crisis of industrial production could be resolved with the emergence of a system of production which is the mirror image of mass production: flexible specialisation.

"Flexible specialisation is a strategy of permanent innovation: accommodating ceaseless change, rather than an effort to control it. This strategy is based on flexible-multi-use equipment; skilled workers; and the creation, through politics, of an industrial community that restricts the forms of competition to those favouring innovation"24

The flexible specialisation thesis has emerged as an influential vision of alternative ways of organising production and work. The thesis has been used to support post-Taylorist work organisation based on multi-skilling and increased worker autonomy, and also to promote new forms of industrial organisation based on inter-firm collaboration and industrial districts.

The flexible specialisation thesis has been very influential shaping is the Australian conception of post-Fordism. 25 Chapter Two provides a more detailed description and critique of the flexible specialisation thesis with particular attention to the theory's treatment of emerging forms of industrial organisation.

The French Regulation School

24 Ibid., p. 17
The Regulation approach has its origins in structuralist Marxism. Yet since the publication of the seminal text, Aglietta's *A Theory of Capitalist Regulation*, the Regulation approach has developed in a number of different directions. Bob Jessop even now writes of seven Regulation approaches, not all of which are concerned with (post-) Fordism! It is therefore impossible in the short space here to provide an accurate or complete sketch of the diversity of work of the Regulationists. However, it is possible to offer a shorthand summary of the Parisian or French Regulation School which is the most prominent branch of Regulationist work located within the umbrella of post-Fordist theories.

The French Regulation School offers a critique of Marx's catastrophic theory of capitalism. Capitalism has not collapsed, but it is prone to crisis. The theoretical concern of the French Regulationists is to understand how capitalist crisis occurs and how it is regulated. The approach centres on the fundamental concepts of the regime of accumulation and the mode of regulation.

A regime of accumulation is a relatively stable period where there is match or alignment of the conditions of production (production organisation, capital formation and types of capital, relationship between capitalist and non-capitalist mode of production) and the conditions of consumption (income shares between wages, profits and taxes, and the composition of demand) at the international level. At the national

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level there are distinct patterns or modes of growth associated with the international regime of accumulation.30

There are two basic forms of the regime of accumulation—intensive and extensive accumulation. Extensive accumulation refers to accumulation based on the spreading of capitalist relations and activities into new areas. Intensive accumulation on the other hand refers to a pattern of accumulation based on the reorganisation of existing areas of capitalist relations. The French Regulation School identifies four regimes of accumulation over the last two hundred years of capitalism. The first regime of accumulation through the eighteenth century was based on extensive accumulation centred on Britain. The next regime was a period of intensive accumulation without mass consumption through the nineteenth century in America. The third major regime of accumulation was a period of intensive accumulation centred on OECD nations with mass consumption (Fordism), and the fourth major regime of accumulation is emerging, but its form and content are yet to be determined.31 Many Regulationists are hesitant to refer to this emerging regime of accumulation as post-Fordism. or if they do, post-Fordism means something vague and unspecified and a number of different options are given.

The central component of the French Regulationist framework is the mode of regulation. The mode of regulation refers to the ensemble of institutions, norms, and practices which secure the conditions for the regime of accumulation. The problem here is that the term 'regulate' suggests functionalism, and that through government action the regime of accumulation is stabilised. This is not the case, however. The difficulty arises due to translations from French to English. Unlike the neo-Schumpeterian post-Fordism (outlined below), the mode of regulation is given autonomy, and cannot be 'read off' from a particular regime of accumulation.

30 Jessop, B., "Regulation theories in retrospect and prospect", Economy and Society, Volume 19, Number 2, May 1990, p. 156
Within the French Regulationist framework the mode of regulation is understood and interpreted within a national context, and can evolve a variety of forms depending on historical conditions. This recognition of national specificity enables the French Regulationists to avoid problems of universality which plague the flexible specialisation thesis. This is what Hirsch refers to as the hegemonial structure.\textsuperscript{32}

Unlike other theorists of the 'transition' between stages of capitalism, most Regulationists are more cautious in prescribing the features of the emerging regime of accumulation. While this is an important difference between the Regulationists, and other theorists of post–Fordism, it is my judgement that this is not sufficient to exclude them from the post–Fordist umbrella. The object of study, the crisis of Fordism or breakdown in the system of mass production, is common to all these perspectives.

Another significant feature of the work of several Regulationists is that reflecting their Marxist history, they emphasise the primacy of class struggle in shaping the dynamics and crises of regimes of accumulation and modes of regulation. The primacy of class struggle is not common to the other theories of post–Fordism. However it has been pointed out that not all the work by the Regulationists adopts this stance. There has been some criticism that more recent Regulationist work has stressed the structural cohesion of the regime of accumulation and neglected the role of agency.\textsuperscript{33} This is a continuing debate within the Regulation School, and within social theory more generally.

\textit{Flexible Accumulation}


It is also possible to identify a sub- or derivative category of the French Regulation School – the flexible accumulation theory. This theoretical approach refers to the work by the economic geographers, specifically Scott, Storper, Harvey, Swyngedouw, and Moulaert. It can be considered a sub-branch of the French Regulation School because while it is largely derived from the French Regulation School, it has some particular features of its own. Firstly, the theory is more adventurous and less open-ended in describing features of the new flexible regime of accumulation. Secondly, the flexible accumulation approach focuses heavily on the spatial dimension of capitalist restructuring. The theory suggests that localisation and vertical disintegration are two key features of the regime of flexible accumulation giving rise to the new industrial spaces, such as the Third Italy, Silicon Valley, and Route 128. This category is outlined in more detail in Chapter Three.

**Flexible Integration**

Flexible integration is a further branch of post-Fordist theory. This concept differs from flexible specialisation in that it stresses the forms of integration between all firms and organisations, large and small.

"The stress on integration in connection with an apparently growing flexibility in the workplace and the labour market is warranted because it draws attention to the crucial organizational question at the heart of the more grandly titled 'regime of flexible accumulation'."


35 This is considered by Jessop as a North American current of Regulation theory developed by radical geographers and urban sociologists. Jessop, B., "Regulation theories in retrospect and prospect", Economy and Society, Vol. 19, No. 2, May 1990, p. 159


37 Cooke, P., "Flexible integration, scope economies and strategic alliances: social and spatial
The well-known industrial organisation strategy of Benneton, the clothing manufacturer, is viewed by Cooke as a near complete articulation of the principle of flexible integration. This perspective offers some useful insights into current patterns of capitalist restructuring, and overcomes the localism and 'small is beautiful' philosophy often associated with the flexible specialisation thesis. The concept of flexible integration is dealt with in more detail in Chapter Five of this thesis. The idea of flexible integration is not often considered a separate post-Fordist theory, yet its emphasis on industrial organisation is sufficient to warrant a separate category for the purpose of this thesis.

**Neo-Schumpeterian Post-Fordism**

This version of post-Fordism outlined by Freeman, Perez, Roobeek and other writers associated with the Sussex Science Policy Research Unit (SPRU) derives from Joseph Schumpeter's theory of technological innovation and Kondratiév's work on long waves of economic growth. Within this framework Fordism and post-Fordism are understood as "techno-economic paradigms" driven by generic or core technologies. The fourth Kondratiev wave (Fordism) was based on mass production technologies and the emerging Kondratiev wave is fuelled by information technology and microelectronics. Accordingly, the socio-institutional framework is seen to evolve and change under pressure to assimilate or match the emerging techno-economic paradigm.

"(T)he upswing of a Kondratiev long wave begins when a harmonic complementarity has been achieved through adequate social and institutional innovations, between the techno-economic paradigm...and the socio-institutional climate."
The neo-Schumpeterian perspective is unique among post-Fordist theories because of its preoccupation with technological hardware and its associated technological determinism.40

"The history of capitalism remains one where 'new' techno-economic forces always initiate the changes while the 'old' socio-institutional frameworks always react. They influence, facilitate or retard, but never fundamentally form, the technology-induced changes. The socio-institutional is clearly perceived as sub-ordinate to the techno-economic."41

These are serious criticisms which are difficult for Freeman and Perez to deny. Yet this neo-Schumpeterian perspective has provided the basis of some fruitful research projects. Researchers at SPRU and elsewhere have subsequently developed the concept of the 'national system of innovation.' The national system of innovation' broadly refers to the institutions and practices which support and structure innovation. This framework has been usefully applied to studying the different systems of innovation in several nations.42 The framework of the national system of innovation has also been prominent

Social Systems", Futures, Vol. 15, No. 4, October 1983, p. 363
40 A related problem with the neo-Schumpeterian approach is its use of the concept of 'technological paradigms'. Technology, unlike science, is more embedded in market relations. A technology (technical knowledge, hardware, software etc.) is not as readily discarded as a theory of science. As technologies are more embedded in market relations, and are shaped by engineers, industrialists, and workers (capital and labour), the so-called technology community is far more heterogeneous and entrenched in the social relations of capitalism than Kuhn's scientific community. These differences suggest that it is problematic transposing a theory developed about the construction of scientific knowledge to the development of technological systems.

On some occasions, a technological paradigm is understood as hardware, on others it is a set of concepts shared by some ill-defined disciplinary matrix. The only thing these interpretations share is some legitimacy bestowed by Kuhn. An additional objection to the use of the term 'technological paradigm' is that the notion of Kuhnian paradigms has lost favour amongst philosophers and historians of science. The emergence of post-Kuhnian thought challenges many of the assumptions of scientific and technological paradigms, but many technology theorists have not reassessed their ideas of technological paradigms. For a useful article which seeks to distinguish features of science and technology see, Clark, N., "Similarities and Differences between Scientific and Technological Paradigms", Futures, February 1987
41 Nielsen, K., "Towards a flexible future- Theories and politics", p. 20 in Jessop, B, The Politics of Flexibility
in recent work by the OECD. The perspective however, can be criticised on the grounds that it depoliticises industry policy and economic development questions.

_Disorganised Capitalism_

This category of post-Fordist theory derives its origins from Lash and Urry's _The End of Organized Capitalism_. Lash and Urry claim that 'organised capitalism' (Fordism) is being replaced by disorganised capitalism (post-Fordism). The disorganised capitalism is characterised by manufacturing based on the principles of flexible specialisation, the end of neo-corporatism, the decline of the welfare state, and the emergence of post-modern cultures. The New Times manifesto of the Communist Party of Great Britain shares a similar interpretation of the changing nature of capitalism, but the disorganised capitalism thesis is more rigourously theorised and is less programmatic.

The disorganised capitalism thesis is a distinct branch of post-Fordist theory because of its emphasis on post-modern cultural and political forms, and arguments about the break between finance and manufacturing capital. It is also characterised by its scant attention to both changing production strategies, and emerging forms of industrial organisation. As Hirst and Zeitlin observe:

"Lash and Urry's thesis of disorganized capitalism tends to prioritize national, macro-economic...... minimising the importance of regional and inter-firm patterns of regulation and co-operation."

The typology of post-Fordist theories offered above shares much in common with

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43 OECD Technology / Economy Programme Draft Background Report SG/TEP/1 1990
those developed by Paul Hirst and Jonathan Zeitlin, and Mark Elam.

With the overview complete and a clear idea of the different post-Fordist perspectives it now possible to embark on a critique of the two prominent post-Fordist theories of emerging patterns of industrial organisation, namely the flexible specialisation thesis and Allen Scott's theory of the new industrial spaces.


I disagree with this typology for two main reasons. Firstly, the flexible specialisation thesis shares with these other approaches the notion of the crisis of mass production or Fordism, but Hirst and Zeitlin's typology ignores this fundamental similarity. Secondly, Hirst and Zeitlin class the New Times manifesto as a distinct type of post-Fordist theory. This is incorrect. The New Times manifesto does not resemble a theoretical position, but instead is more accurately described as a popular rendition of a post-Fordist political project. The New Times manifesto is a political strategy that conceptualises the current stage of capitalism as post-Fordist, and draws eclectically on different theoretical approaches including flexible specialisation, the French Regulation School and the disorganised capitalism thesis.

Mark Elam offers an alternative, but similar classification of post-Fordist approaches. He identifies three theoretical strands of post-Fordist theory, which are neo-Marxist (the French Regulation School and the work of Michael Burawoy), flexible specialisation and neo-Schumpeterian post-Fordism. (Elam, M., *op. cit.*, p. 11) While Elam correctly classifies the theory of flexible specialisation as a post-Fordist approach, his typology is also limited in several ways. Firstly, Elam is mistaken in including the work of Michael Burawoy and the Regulation School under the same category of neo-Marxism. The tradition and perspective of Burawoy's work is very different to the French Regulation School. Burawoy's work has focussed on exclusively on the politics of production, and the regulation of labour process. However for the Regulationists, the crisis of Fordism is a systemic crisis of capital accumulation, and is not confined to questions of the capitalist labour processes. Furthermore, several strands of the French Regulation School are prone to a functionalism not evident in Burawoy's work. Secondly, Elam's typology fails to recognise several other post-Fordist perspectives, such as the work of Lash and Urry, Scott, Harvey, Cooke, and several others who have been identified above.
CHAPTER 2

A CRITIQUE OF THE FLEXIBLE SPECIALISATION THESIS AND ITS ACCOUNT OF INDUSTRIAL DECENTRALISATION

"Intellectuals are creatures of fashion...."¹

INTRODUCTION - OVERVIEW

As noted in the introduction to this thesis, the flexible specialisation thesis has emerged as both an influential theoretical account of capitalist restructuring, and an important force shaping industry policies in many advanced capitalist economies. This chapter develops a wide ranging critique of the flexible specialisation thesis and its account of emerging forms of industrial organisation. The aim of the critique is to demonstrate the intellectual, empirical and political limitations of the flexible specialisation thesis. The critique is also developed to provide the foundation for a critical evaluation of the influence of the flexible specialisation thesis and the Third Italy model on the Australian inter-firm networking policy agenda (This is undertaken in Chapter Four.) A thorough understanding the flexible specialisation thesis and the Third Italy model is essential for understanding the direction of the inter-firm networking debate in Australia. Due to the length of this critique of the flexible specialisation thesis a brief overview of the chapter is provided, outlining the main lines of criticism.

The chapter commences with a sketch of the flexible specialisation thesis as developed by Michael Piore and Charles Sabel. The focus of this sketch is on the forms of industrial organisation that can emerge under the paradigms of flexible specialisation and mass production. Following this sketch, it is argued that the flexible specialisation

¹ Walker, R., "What's left to do", Antipode, 21, 1990, p. 156
thesis has suffered a good deal of confusion because it has been plagued by a lack of theoretical clarity as to what flexible specialisation actually is! It is demonstrated that in different works and contexts the concept of flexible specialisation is constructed as an ideal type, as a normative political claim and as an empirical phenomenon. The difficulty is that these three notions of the flexible specialisation, that is, ideal type, normative political claim, and empirical phenomenon, are rarely differentiated and considered separately, and this has led to intellectual and political confusion. This chapter attempts to overcome these difficulties, and to develop a thorough and far ranging critique of the flexible specialisation thesis and its account of industrial organisation. Each of these constructions of flexible specialisation is dealt with separately.

The notion of flexible specialisation as an ideal type is developed most explicitly by Paul Hirst and Jonathan Zeitlin. A major criticism of their work is that the construction of flexible specialisation as an ideal type reduces production systems and history, unacceptably, to the binary opposites; mass production and flexible specialisation. These categories are inadequate for comprehending the variety of emerging production strategies. Moreover it is argued that the diffusion of flexible production techniques is in fact eroding any existing structural barriers between flexible specialisation and mass production (if such a barrier did ever exist). Other criticisms of flexible specialisation as an ideal type are that the concept of flexibility is all embracing, and ill-defined, and that the ideal type is teleological. There are further problems of defending a theory as ideal type when elsewhere flexible specialisation is considered as an empirical phenomenon.

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3 This is not to suggest that these versions of flexible specialisation are not mutually exclusive. It is quite feasible and justifiable that flexible specialisation could be simultaneously presented as an ideal type and a normative-political claim (as Hirst and Zeitlin do) or an empirical phenomenon and a normative political claim. What is unacceptable however, is failing to differentiate the three notions of flexible specialisation and sliding between them. This point is taken up later in this chapter.
Following this critique of flexible specialisation as an ideal type, flexible specialisation as an empirical phenomenon is explored. This constitutes the major part of the chapter. The idea of flexible specialisation as an empirical phenomenon or "reality" is most evident in the work of industry policy makers and some academics. This view suggests that flexible specialisation is a "reality", and is embodied in the industrial districts of the Third Italy, Baden-Wurttemburg in Germany, Silicon Valley, Sakaki in Japan and in decentralised transnational corporations. Three broad criticisms of this conceptualisation of the flexible specialisation are developed. Firstly, it is argued that if the flexible specialisation thesis can be said to capture empirical reality it is imperative that it can be distinguished from mass production, and that the forms of industrial organisation associated with flexible specialisation can be distinguished from the vertical integration which characterises mass production. But unfortunately, the flexible specialisation thesis presents no 'criteria of dominance' or 'yardstick' to differentiate flexible specialisation and mass production.

Secondly, the flexible specialisation account of empirical reality is criticised because the flexible specialisation thesis is based on a misreading of the current economic and technological environment. It is demonstrated that the claims of market saturation and uncertainty, product differentiation, and flexible technologies which underpin the flexible specialisation thesis are simplistic and highly selective.

Thirdly, and most importantly, an empirical critique of the much vaunted industrial districts and examples of decentralised transnational corporations is developed. While the Third Italy and other industrial districts are cited extensively by the flexible specialisation theorists (and other post-Fordist theorists) as an empirical manifestation of flexible specialisation, their interpretations of these industrial districts are disputed. Several critics offer radically different interpretations of these industrial districts which share little in common with the proponents of the flexible specialisation thesis. For example, the literature critical of the Third Italy model suggests that the
competitive advantage of the Italian industrial districts is not always based on permanent innovation nor on skilled labour, as the flexible specialisation thesis suggests. Instead, some research points to super-exploitation of labour, an extensive black economy and the sub-ordination of small firms as permanent features of certain industries and regions within the Third Italy. Other critics point to evidence which is suggesting that the industrial districts of the Third Italy are a transitional phenomenon already passing.

The final section of the chapter considers flexible specialisation as a normative political claim. The issue here is not so much whether or not flexible specialisation exists, but that flexible specialisation could exist as the dominant system of production, and more importantly, it is desirable for flexible specialisation to exist. The normative political claim presents flexible specialisation as a goal that could be achieved through political action. The construction of flexible specialisation in this form is done largely for political purposes in order to demonstrate the political and social attractiveness of flexible specialisation over mass production. By contrast several critics claim that flexible specialisation is politically impotent, and is a poor substitute for more traditional socialist or social democratic strategies.

With this overview of the chapter aside it is now possible to provide a sketch of the flexible specialisation thesis as described by Piore and Charles in The Second Industrial Divide. This summary is presented in some length for two reasons. Firstly, Piore and Sabel's work is central to the evolution of the flexible specialisation thesis. Secondly, given that the flexible specialisation thesis is sometimes presented by its critics in a simplistic and crude way, this summary seeks to offer a fair and accurate picture of the theory.
THE FLEXIBLE SPECIALISATION THESIS AND INDUSTRIAL ORGANISATION – THE ARGUMENT

As was briefly described in the previous chapter, the flexible specialisation thesis is a meta-theory of industrial production centred on two competing paradigms; flexible specialisation and mass production. According to the theory, industrial history can be divided on the basis of the dominance of one or other of these two paradigms of production.

During the nineteenth century flexible specialisation or craft production was the prevailing system of production. Alfred Marshall coined the term 'industrial districts' to describe the organisation of this system of production. Interdependent small firms with a strong inter-firm division of labour where small firms specialised in one or two stages of the manufacturing process. These industrial districts, localities specialising in one or at the most two manufacturing sectors, produced a constantly changing wide range of products for regional and foreign markets. These industrial districts developed and used flexible technologies, such as the Jacquard loom which enabled shorter production runs and a more diverse product range. The districts were also characterised by institutions and local cultures that regulated and balanced cooperation against competition among the firms, so as to encourage permanent innovation.

Frequently cited examples of these industrial districts are:

"Silks in Lyon: ribbons, hardware and specialty steels in Solingen, Remscheid and Sheffield; calicoes in Alsace; woolens in Roubaix; cottons in Pawtucket, Rhode Island; textiles in Philadelphia—"  

This nineteenth century system of flexible specialisation was ultimately undermined

6 Ibid., p. 29
by mass production. The theory of flexible specialisation however, suggests the victory of mass production was not due to some inherent economic or technical efficiency of mass production. Instead, it is argued that mass production emerged because some industrial districts deliberately adopted strategies of mass production or lost their innovative character for a variety of other reasons. In other cases state sponsored modernisation programmes supported mass producers over industrial districts, further consolidating mass production. Flexible specialisation and industrial districts lost the battle of ideas and were no longer the dominant vision of efficient and viable production.

The result of this 'first industrial divide' between flexible specialisation and mass production was that through the twentieth century mass production has been the dominant paradigm of production. The manufacturing industries of advanced capitalist nations have been based on the production of standardised goods on dedicated machines by un- and semi-skilled workers for mass markets. Piore and Sabel also argue that national institutions and political strategies, such as Keynesian demand management strategies, evolved with the system of mass production to produce a relatively stable system aligning mass production and mass consumption.

Users of both consumer and capital goods are not passive recipients who consume undifferentiated products, but rather they customise and alter goods to meet their specific needs. For example, consumers modify their clothes and cars to differentiate them from standardised products. These processes of customisation require skills and creativity. However, the possible emergence of flexible specialisation as described by Piore and Sabel, could dramatically alter this role for users or consumers. According to the theory, in the era of flexible specialisation, differentiated and customised products are sold and therefore there could possibly be less of a role for consumer or user intervention in shaping the products they use. Based on this it could be argued that the emergence of flexible specialisation might deskill consumers, (through a loss of customisation skills), even if some workers (producers) become more skilled.

This argument would suggest that we could understand flexible specialisation, or more generally post-
The industrial organisation of mass production was based on vertical and horizontal integration as a means of stabilising production. The archetypal example of this form of industrial organisation was Henry Ford's Rouge River plant. Ford employed 35,000 workers at Rouge River almost completely integrating automobile production, with coal and iron entering one end and cars rolling off the assembly line at the other end. Any role for small firms within the system of mass production was reduced to a component producer or sub-contractor totally dependent on mass production corporations, and technically inferior.

However, according to Piore and Sabel, the paradigm of mass production is in crisis, and has been so since the early seventies. The saturation, fragmentation and uncertainty of mass markets has led to a crisis of underconsumption which the application of national Keynesian strategies have been unable to reverse. This structural crisis was also facilitated by two events, the oil crisis of 1973 and 1979, and the breakdown in the Bretton-Woods system, both of which contributed to greater economic uncertainty. The result of this crisis is that many nations face a 'second industrial divide', and (if we believe Piore and Sabel) a further choice as to which production paradigm should be selected for the future. The choice is between a consolidated version of mass production based on multinational Keynesianism and further internationalisation of production, or the rise of the re-emergence of flexible specialisation.

Fordism as the extension of capitalist production into areas previously within the home and domestic sphere: customisation and differentiation of products increasingly becomes part of the market. The social division of labour is deepened, and the processes of consumption and production are further separated. Within the French Regulation School framework this is a feature of a regime of extensive accumulation. This is only offered as a hypothesis, but it does highlight that the impact of flexible specialisation and mass production on consumers (users) is left completely unexplored by the flexible specialisation thesis. 11 Walker, R., "The Geographical Organization of Production-Systems", Environment and Planning D: Society and Space, Vol. 6, 1988, p. 386
13 Ibid., pp. 251-52 This idea of choice between prosperity through flexible specialisation or re-establishing international Keynesianism is criticised by several commentators. They argue that there is no such choice because the preconditions for establishing international Keynesianism do not exist.
Piore and Sabel argue that several corporations have attempted a number of strategies to overcome the current crisis of mass production, through in some way extending the logic of mass production. Strategies of conglomeration, international sourcing of production, such as the much vaunted world car, and the cultivation of new mass markets for consumer durables have all been strategies pursued by corporate mass producers. None have been very successful. Instead, Piore and Sabel suggest that the consolidation of mass production requires efforts by national governments to forge a system of international Keynesianism. Such a system would need to integrate developed economies, stabilise the economic environment, and assist in the expansion of the productive capacity of the less developed countries. The pending formation of an integrated European market could be seen as an example of one institutional step towards such a system of multinational Keynesianism.

The alternative path to renewed prosperity rests with the re-emergence of flexible specialisation. Unlike mass production, flexible specialisation does not depend on macro—regulation by governments to assist in the stabilisation and expansion of mass markets. Sabel offers a definition of flexible specialisation which stresses this point. More than just being the inverse of mass production (the manufacture of specialised goods by means of general purpose machines and skilled labour), flexible specialisation is also;

(Williams, K., et. al., "The End of Mass Production", op. cit.) However I would suggest that the unification of the European market begins to undermine this argument, and indicates that there is some, albeit extremely limited, choice. The European Commission's Cecchini Report demonstrated the unexploited economies of scale which will be realised for European industry from 1992. (Willenbockel, D., "Unexploited economies of scale in European Industry and the Economic Consequences of "1992": Fact and fiction of the Cecchini Report", Discussion Paper, Wissenschaftzentrum Berlin fur Sozialforschung, December 1989)

Also the recent disintegration and liberalisation of Eastern Europe presents new opportunities for this strategy of multinational Keynesianism, although at the time when The Second Industrial Divide was written, Piore and Sabel could hardly have envisaged these developments.

15 Ibid., pp. 253-254.
"a system in which firms know that they do not know what they will have to produce, and further they must count on the collaboration of workers and subcontractors in the meeting the market's eventual demand." 16

Rather than relying on a system of macro-economic regulation to remove or reduce economic uncertainty, flexible specialisation is a production strategy that assumes the presence of uncertainty. Firms are able to enter and leave markets rapidly and the few sunken costs in specific products or processes. Piore and Sabel outline several technological preconditions for the re-emergence of flexible specialisation. Central to their arguments is the view that computer technology are more flexible (reprogrammable) and therefore enable small batches of production and greater economies of scope. Computer technology is a technological precondition for the re-emergence of flexible specialisation.

"The computer is thus a machine that meets Marx's definition of an artisan's tool; it is an instrument that responds to and extends the productive capacities of the user." 17

The theory suggests that if flexible specialisation is going to emerge it can evolve from two different starting points. Either mass production corporations can devolve functions and flatten their hierarchies, produce customised products and become more responsive to shift markets, 18 or alternatively, collections of small and medium firms can develop complex economic and social linkages similar to the nineteenth century industrial districts.

From either of these two different starting points, Piore and Sabel argue that flexible specialisation can re-emerge in four specific organisational forms; regional conglomerations of small inter-dependent enterprises such as the specialised industrial districts of North East Italy, federated groups of loosely allied enterprises linked by personnel and financial agreements (eg. the Japanese zaibatsu), network related

16 Sabel, C., "Flexible Specialisation and the Re-emergence of Regional Economies", op. cit., p. 53
18 Ibid., p. 282
Enterprises (solar firms), and internally decentralised factories (workshop factories). The latter two, solar firms and workshop factories, are forms of inter-firm networks with extensive linkages of collaborators, not subordinates. These four manifestations of flexible specialisation share similar a pattern of microeconomic regulation that shapes the forms of competition between firms. Each represents a blend of competition and co-operation between firms which promotes permanent innovation, not competition based on wage cuts or eroding working conditions. Local institutions regulate wages and working conditions to ensure that competition is based on innovation and quality, not on reducing wages.

The rationale underpinning the evolution of these small firm industrial districts is that flexible specialisation is based on culture of collaboration which is embedded in a community. Each firm is dependent on surrounding firms therefore placing further pressure on agglomeration and localisation.

"The more specialised each firm became, the more it depended on the success of products complementing its own. Firms became more interested in exchanging information with related producers. They also began to further the well-being of the industry as a whole by supporting broad institutions—vocational schools, research institutions, and marketing agencies. The industry is not simply the sum of autonomous production units, but rather a set of institutions that made the survival of individual companies possible."21

More recently Sabel has extended this argument to specifically consider the emergence of flexible specialisation through the restructuring and decentralisation of mass production corporations in more detail. He argues that the corporate Taylorism which separated conception and execution between corporate headquarters and peripheral branch plants lacks the flexibility that is required to respond to local and ever changing economic conditions. The path open to flexible specialisation for transnational corporations, which had previously adhered to mass production, is to

19 Ibid., p. 265
20 Ibid., pp. 268-272
decentralise corporate functions from the headquarters to peripheral production units, and to give these units more autonomy which leads to a blurring of hierarchy. Within the framework of the flexible specialisation thesis, this pattern of re-organisation converges with flexible specialisation achieved through small firm industrial districts. The emerging decentralised units are linked to local firms in regional complexes—industrial districts. Charles Sabel describes this as the double convergence: transnational corporations are coming to resemble industrial districts and small firms are becoming more integrated in industrial districts.

"The activities of the giant corporations would more closely resemble and actually blend into the activity of the industrial districts. An engine plant which participates in the design of the engine and depends on highly specialised local suppliers to produce it is both part of a multinational car firm and an independent industrial district." 

This is the core of the flexible specialisation thesis. It suggests many national economies are at a precipice, a second industrial divide. The choice is either to extend the principles of mass production, or forge to the re-emergence of flexible specialisation. The Second Industrial Divide and subsequent work suggests that by Piore and Sabel support the re-emergence of flexible specialisation as the industrial path for the twenty first century, and they outline industry policies to foster its creation.

FLEXIBLE SPECIALISATION AS IDEAL-TYPE, EMPIRICAL PHENOMENON OR NORMATIVE POLITICAL CLAIM?

Beyond this general sketch of the forms of industrial organisation associated with

22 It is argued that this process of industrial restructuring is parallel to the process of labour process reorganisation, which also involves a shift of responsibility and autonomy from supervisors (headquarters) to workers (peripheral units) through multiskilling, quality circles and the like.

23 Sabel, C., "Flexible Specialisation and the Re-emergence of Regional Economies", op. cit., p. 40

24 There is some argument that the preconditions for re-establishing a virtuous cycle of capital accumulation based mass production are essentially unrealisable, and therefore the notion that there is a choice between mass production and flexible specialisation is a facade. (Williams, K., Cutler, J., Williams, J., and Haslam, C., "The End of Mass Production- A Review of the Second Industrial Divide", Economy and Society. Vol. 16, No. 3, August 1987)
flexible specialisation and mass production, the flexible specialisation thesis suffers a great deal of confusion. Through the writings of Piore, Sabel, Hirst, Zeitlin and others, the concept of flexible specialisation takes on three different modes. In different settings, flexible specialisation is constructed as an ideal-type, as a normative political claim and an as empirical phenomenon. In the bulk of the flexible specialisation literature these three different notions of flexible specialisation are rarely differentiated and clarified. (One exception is a recent article by Hirst and Zeitlin.) Even much of the critical literature is beset with the same problems in failing to differentiate these various notions of flexible specialisation. Many critics of the flexible specialisation thesis, for example, have focused on flexible specialisation solely as an empirical phenomenon without considering it as an ideal type or normative political claim. Such critics have attacked the thesis through providing a list of counter-examples to prove that flexible specialisation is not an empirical reality. While these criticisms are often correct, the counter-examples do not provide a refutation of flexible specialisation in its other guises. Flexible specialisation has been a moving target, and this has not been properly comprehended by most of its critics. In an effort to overcome this confusion and provide a more thorough critique, I intend to briefly describe these three forms of the flexible specialisation thesis (ideal-type, empirical phenomenon, and normative political claim). These descriptions will be followed by a detailed critique of each of these notions of flexible specialisation as they apply to issues of industrial organisation.

As has already been noted, the view of the flexible specialisation thesis as an ideal-type is most clearly articulated in the recent work of Hirst and Zeitlin. They argue

25 Nielsen, K., "Towards a flexible future - theories and politics" in Jessop, B., (ed), The Politics of Flexibility, 1991, p. 14 and Gordon, R., "Markets, Hierarchies, and Alliances: Beyond the Flexible Specialization Debate", Group de Recherche Européen sur les Milieux Innovateurs (GREMI), Paris unpublished, March 1988, p. 2 Both Nielsen and Gordon ask whether flexible specialisation is an empirical phenomenon, an ideal type or a normative claim. However neither of them recognises that flexible specialisation is constructed in each of these forms in different contexts by different authors.

26 Hirst, P, and Zeitlin, J, "Flexible Specialization versus post-Fordism: theory, evidence and policy implications", op. cit., p. 4

27 Ibid.
"(c)ontary to what many critics have supposed, for example, mass production and flexible specialisation are ideal–typical models rather than empirical generalizations or descriptive hypotheses about individual firms, sectors, or national economies."

"The ideal–type is not to be taken as an empirical generalisation, and, therefore it should not be treated as if it consisted of a proposition that the majority of firms in a given national economy would conform to its features."  

For Hirst and Zeitlin, flexible specialisation as an ideal type can be used in a "normative–empirical" mode or serve as a heuristic for understanding manufacturing strategies. Flexible specialisation in the normative–empirical mode, (essentially what I describe as normative political) is the mode in which flexible specialisation is viewed as a political alternative to mass production. Flexible specialisation can also serve as a heuristic and draw attention to a number of distinct types of production, and inter–firm relations, and can serve to generate numerous hypotheses about the organisation of production. Hirst and Zeitlin argue that flexible specialisation can serve as heuristic irrespective of whether the model is widely spread. One difference between the approach I develop and that of Hirst and Zeitlin is that they consider flexible specialisation in normative–empirical and heuristic modes as a subset of the ideal–type whereas I deal with these categories separately, the ideal–type being considered as a heuristic.

The implications of constructing flexible specialisation in this manner are profound. Hirst and Zeitlin have sought to redefine the concept of flexible specialisation in a more complex way, making it relatively immune from empirical critique, because within their framework any empirical investigation tests whether industrial practices are moving in the direction of flexible specialisation, not whether flexible specialisation is a viable theory. The theory's success is measured by its value as a

28 Ibid., p. 6
29 Ibid., p. 26
heuristic, not as an empirical reality. However, as will be demonstrated later, even this restricted conceptualisation of flexible specialisation as an ideal type with numerous caveats is still questionable.

The view of flexible specialisation as an empirical phenomenon emerges in Piore and Sabel's description of the Third Italy, and in many of the subsequent studies of industrial districts. This view is also implicit in the work of policy-makers who draw heavily on the icons of flexible specialisation; Benneton, the Third Italy, Baden-Württemberg in Germany and Sakaki in Japan. In all these cases it is argued that flexible specialisation actually exists. The construction of flexible specialisation as a set of empirical claims is the most crude (and in many ways the most influential) use of flexible specialisation.

A more sophisticated way of constructing flexible specialisation is as a normative political claim. In this mode, flexible specialisation is seen to present a politically attractive alternative to mass production. The issue is not whether flexible specialisation already exists, but that this system of production could be developed through political action, and that flexible specialisation would be a favourable alternative to mass production. This approach is evident in the work of Piore and Sabel, where they argue that the production strategy of flexible specialisation presents American industry with a possible path to prosperity.

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"If flexible specialization strategies are possible, if their conditions are not too difficult to satisfy, and certain of their policy consequences and social outcomes are attractive from a certain normative standpoint then the role of evidence here is to serve as a support for advocacy and a means of generalizing the process of learning from certain national, regional or enterprises experience... All the advocate of flexible specialization as a normative approach has to do is to show that such strategies are possible and that they can expand beyond given cases, even if in a hybrid form."  

The Third Italy has served as an important exemplar in establishing flexible specialization as an influential normative political claim. While the empirical accounts of these Italian industrial districts do not always tell a story of human emancipation (as shall be demonstrated later), there still remains a political enthusiasm amongst sections of the political Left for this system of industrial organisation. In light of this enthusiasm and attention, I investigate in detail the social and economic conditions of the Third Italy in order to assess the validity of the claims that industrial districts based on the principles of flexible specialization are a worthwhile political goal.

The notion of flexible specialization in this normative political form is manifest in two different political projects: yeoman democracy or associational socialism, and labour reformism. The ideas of yeoman democracy and associational socialism are broadly similar and are both based on the view that flexible specialization and industrial districts provide the microeconomic foundation for a system of co-operative production and for new forms of political representation. Yet associational socialism is more radical and aims at building a form of non-statist socialism based on institutions and groups located in civil society. However, for the purposes of this thesis, they are similar enough to be classified together. The other broad political strategy that has utilised flexible specialization as a normative political claim is labour

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reformism. The labour reformist perspective views flexible specialisation, inter-firm collaboration and industrial districts as an industrial strategy which might prevent the further erosion of the local manufacturing base. Unlike yeoman democracy or associational socialism, the claims of labour reformism are less localist, and there is less consideration of the possible new forms of democracy that flexible specialisation might foster.

Before embarking on the detailed critiques of flexible specialisation, it should be stressed that these different conceptions of flexible specialisation are not mutually exclusive. It is quite feasible and justifiable that flexible specialisation could be simultaneously presented as an ideal type and a normative-political claim (as Hirst and Zeitlin do) or an empirical phenomenon and a normative political claim. What is unacceptable however, is failing to differentiate the three notions of flexible specialisation, and engaging in a 'methodological shuffle' between these three notions of flexible specialisation as a means to evade legitimate criticisms of flexible specialisation thesis as an empirical thesis.

FLEXIBLE SPECIALISATION AS AN IDEAL-TYPE A CRITIQUE

Constructing flexible specialisation as an ideal-type deflects many criticisms often directed at the flexible specialisation thesis. It is not possible, for example, to merely refute the ideal type through assembling counter-examples, and as Hirst and Zeitlin note:

"Simply showing that flexible specialisation strategies have not been generalized, that they may exist only in certain cases, and that they do not exist in a pure ideal-typical

35 Labour reformism here refers very broadly to a strategy which is aimed at improving the industrial based and also strengthening the position of labour. This does not necessarily involve a substantial transformation in class relations, or shift in class power. To this extent it differs from Winton Higgins notion of labour reformism. Higgins, W., and Apple, N., "How Limited is Reformism: A Critique of Przeworski and Panitch", Theory and Society, Vol. 12, 1983
36 Hampson, I., "Post-Fordism as a guide to socialist reindustrialisation", Unpublished, Wollongong University, 1991, p. 5
but in a hybrid form does not constitute a refutation of flexible specialization...." 37

Irrespective of whether flexible specialisation exists or not, an ideal-type could still serve as an intellectually productive way of exploring the social world and understanding production strategies. Indeed, Hirst and Zeitlin are supporters of flexible specialisation for this very reason. They argue that flexible specialisation draws out various possible arrangements of production systems, and presents a range of alternative paths or patterns of industrial production. 38 Yet even with the restricted framework of an ideal-type, there are a number of reasons why flexible specialisation is not a useful way of theorising production strategies and industry development. The criticisms that follow highlight the lack of intellectual productivity of flexible specialisation as an ideal type, and demonstrate the problems of theorising industrial production within the binary categories of mass production and flexible specialisation.

**Binary Opposites and the Flexible Specialisation Thesis**

A significant criticism of flexible specialisation as an ideal-type is that it presents a dichotomy of flexible specialisation and mass production as two competing systems of production. These analytic categories fail to usefully capture the diversity of production strategies. For example, much of Japanese manufacturing cannot be understood as either mass production or flexible specialisation. This system of production combines dedicated and flexible automation, flexible work organisation, extensive product differentiation, mass markets and quasi-market industrial organisation. As Andrew Sayer points out, the Japanese system is a unique model that cannot be reduced to a blend of flexible specialisation and mass production and must be considered as a separate production strategy that has evolved within a specific national economic and institutional environment. 39

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37 Hirst, P., and Zeitlin, J., "Flexible Specialization versus Post-Fordism: theory, evidence and policy implications" *op. cit.*, p. 25
Recognising these limitations, several theorists have sought to develop categories to overcome the flexible specialisation – mass production dichotomy. Richard Gordon, for example, develops a typology of production systems that consists of automated variable mass production (the US model), flexible mass production (the Japanese model), flexible precision production (the German model), and flexible specialisation.\textsuperscript{40} This taxonomy is shares more in common with the established categories for grouping different production systems; jobbing, small batch, mass production, or continuous flow production.\textsuperscript{41}

Furthermore, subsequent to the publication of *The Second Industrial Divide*, Michael Piore himself also acknowledged the need for a richer typology of systems of production. At a workshop on production re-organisation and skills in 1987, Piore suggested the following categorisations of production systems; classical mass production, flexible mass production, closed flexible specialization, open flexible specialization with marginal adjustment, and open flexible specialization with discontinuous adjustment.\textsuperscript{42}

Hirst and Zeitlin, however, continue to argue that production systems can be usefully considered hybrids of either flexible specialisation and mass production.\textsuperscript{43} This exercise though involves the meaningless activity of describing some features of production as lying between the extreme poles of flexible specialisation and mass production. By definition, for example, a production run will be long or short or somewhere between, and products will be somewhere between standard and

\textsuperscript{13} No. 4, December, 1989
\textsuperscript{43} Hirst, P., and Zeitlin, J., "Flexible Specialization versus post-Fordism: theory, evidence and policy implications", op. cit., p. 6
customised. Such an approach offers no insight into actual dynamics of different systems of production.

A further problem with the categories flexible specialisation and mass production is that the diffusion of programmable technologies and new management techniques is actually eroding any structural barrier between these paradigms of production. Flexible technologies allow high volumes of output to be increasingly diversified and differentiated through increasing economies of scale and scope.44

**Flexibility – All or Nothing**

A further problem with the flexible specialisation thesis as an ideal-type is the theory's treatment of the concept of flexibility. Throughout the flexible specialisation literature the idea of flexibility is all pervasive, but very poorly defined and understood. This raises a variety of problems.

Paul Adler, for example, demonstrates that within production processes there are at least eight different forms of technical flexibility including machine flexibility, process flexibility, product flexibility, volume flexibility, routing flexibility, expansion flexibility, operation flexibility, and production flexibility.45 These different forms of flexibility are not necessarily co-incident at all – a reduction in one form of flexibility might increase the opportunity of other forms of flexibility. Yet within the flexible specialisation literature 'flexibility' remains amorphous and ill-defined.

Pollert draws a similar conclusion when considering the forms of labour market flexibility. Her work highlights that numerical flexibility (the flexibility to 'hire and

fire') and functional flexibility (multiskilling) are extremely different, and not interdependent. For example, extensive use of external labour markets can assist numerical flexibility, but reduce functional or task flexibility, whereas strengthening the internal labour market and reducing numerical flexibility can improve functional flexibility.

The contradictory nature of the concept of flexibility is also evident in the application of Just-in-Time (JIT) relationships. JIT leads to a flexibility in the quantity and timing of part deliveries. However, this flexibility is acquired at the price of more rigid inter-firm linkages because customers and suppliers are more interdependent.

A further related problem is that the flexible specialisation thesis equates flexible technology, flexible labour, and flexible industrial organisation. However there is no necessary link or interrelationship between these forms of flexibility. It is quite possible for the rigid system of mass production to utilise flexible (external) labour markets. Moreover, as Jaikumar demonstrates, it is possible to use flexible manufacturing systems (FMS) flexibly or inflexibly. His study indicates that the Japanese use of FMS is more flexible than in the USA. The average Japanese FMS produces 93 different products, with an average product run of 258 units. By comparison, in the USA, FMS produces only an average of 10 different products with average product runs of 1727 units.

The inability of the flexible specialisation thesis as an ideal-type to penetrate the concept of flexibility and recognise the different and conflicting types of flexibility is a

46 Pollert, A., "Dismantling Flexibility", Capital and Class, Vol. 34, 1988
major failing. It is difficult to view flexible specialisation as an 'intellectually productive concept', when the concept of flexibility remains so ill-defined and over-conflated. This same problem has occurred through industrial/post-industrial society theory.

"The concept's (industrial society) conflation of a number of techno-economic factors within one broad category makes it difficult to use the concept in a discriminatory fashion while investigating the problems and contradictions within contemporary production."50

**The Methodological Limitations of Ideal Types**

Utilising the concept of flexible specialisation as an ideal type also leads to problems of teleology. The consideration of manufacturing and production strategies as either mass production or flexible specialisation, marginalises alternative explanations and systems of production. It assumes that production systems in general are moving toward mass production or flexible specialisation.

"With flexible specialisation, the 'paradigms' of mass production or flexible specialisation present not only an artificial dual choice of opposite alternatives, but also a dogma of 'leading edge' trajectories. Uneven developments are then marginalised as mere derivations from the asserted trend, rather than analysed in their own right. For instance, the decline rather than the success of some industrial districts is explained by contingent factors rather than any more profound historical analysis—an explanation which does not threaten the doctrine of 'best practice' trajectory....Such teleology and one dimensional views of history driving towards a pre-ordained end remain impervious to empirical testing."51

These related criticisms above highlight that the flexible specialisation thesis is grounded in a overburdened dualism—flexible specialisation and mass production.52 These binary opposites obscure important features of production systems and ultimately ",(t)he heresy of reality is stripped and compressed into the diminished and constricting grip of a schematic model" and a rigid past is contrasted against a flexible

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50 Badham, R., *Theories of Industrial Society*, Croom Helm, Kent, 1986, p. 117
52 Sayer, A., "Post-Fordism in Question", *op. cit.*
This problem of periodising history and overly emphasising differences rather than the continuities is a failure of much recent social theory which presents the old and the new as binary opposites. 54

The Shuffle From an Ideal-Type to Empirical Phenomenon

Beyond these criticisms, the construction and defence of flexible specialisation as an ideal-type is also misleading because other supporters claim flexible specialisation to be much more – for them flexible specialisation is an empirical phenomenon. The resulting 'methodological shuffle' (to appropriate Ian Hampson's terminology 55) enables flexible specialisation as an ideal-type (or for that matter as a normative political claim) to evade empirical criticism, while simultaneously flexible specialisation as an empirical reality is achieving some influence within the sphere of political and policy debates, through selectively drawing on empirical case studies.

Hirst and Zeitlin have sought to build an intellectual fortress to protect the concept of flexible specialisation. In practice this has meant not merely protecting an ideal type or a heuristic, they are also (perhaps inadvertently) protecting the vulgar versions of flexible specialisation deployed in the political and policy realm.56

" ...as flexible specialisation filters out of the academic and into the political and policy realm, we must expect that the cautions concerning limitations as a model will be progressively elided. Any vulgarisation of the model will almost certainly promise more for it than even its original proponents intended."57

53 Amin, A, and Robins, K., "The Re-emergence of Regional Economies?", op. cit., p. 5
54 For an example of this periodisation of history see Harvey, D., The Condition of Post-Modernity, Blackwell, Oxford, 1990, p. 174. For more on the problems with theorising social and industrial change as revolutionary or transformism, see Miles, I., Rush, H., Turner, K., Bessant, J., Information Horizons, Edward Elgar, Aldershot, 1988
55 Hampson, I., "Post-Fordism as a Theory of Reindustrialisation", Unpublished. Wollongong, p. 5
56 Ironically having constructed flexible specialisation as an ideal type, Hirst and Zeitlin advocate a series of industry policies which bear little relation to the flexible specialisation thesis. Instead they pick and choose industry policies from successful industrial nations and suggest that these policies are guided by the ideal-type of flexible specialisation. (Hirst, P., and Zeitlin, J., "Flexible Specialization versus post-Fordism: theory, evidence and policy implications", op. cit.)
57 Martinelli, F., and Schoenberger, E., "Oligopoly is alive and well: notes for a broader discussion of flexible accumulation" in Benko, G., and Dunford, M., Industrial Change and Regional Development.
In conclusion, even though flexible specialisation as an ideal type is immune from empirical critique, it still fails to provide a useful framework for understanding the changing nature of capitalist production and industrial organisation. However of more concern is that the flexible specialisation thesis is also presented as an empirical description of industrial restructuring.

FLEXIBLE SPECIALISATION AS AN EMPIRICAL PHENOMENON – THE CRITIQUE

In addition to the criticisms above of flexible specialisation as an ideal type, understanding flexible specialisation as an empirical phenomenon is plagued with even further problems. In this section, three broad objections are developed against attempts to construct and interpret flexible specialisation as an empirical phenomenon. Firstly, it is demonstrated that the flexible specialisation thesis fails to develop a set of measures or criteria for determining what is flexible specialisation or mass production. There is no 'criteria of dominance' to enable the establishment of flexible specialisation as an identifiable production system.

Secondly, according to the flexible specialisation thesis, the crisis of mass production was due in part at least to the saturation of mass markets, and the possible emergence of flexible specialisation is premised on the emergence of flexible technologies and production systems. It is argued that both the market saturation thesis, and the assumptions about the nature of flexible technologies, are based on a highly selective interpretation of the current state of markets, production systems and technology.

The third broad criticism of flexible specialisation relates to the numerous attempts to demonstrate that the empirical manifestation of flexible specialisation are the
industrial districts of Italy and elsewhere. Considerable research has drawn heavily on the Third Italy and other industrial districts, and other examples of inter-firm collaboration. I will critically explore the assembled evidence of these industrial districts and forms of inter-firm networks. This line of critique is lengthy as it involves a detailed consideration of the voluminous Third Italy literature, and other debates concerning Silicon Valley, Japanese industrial organisation, and evidence about patterns of corporate reorganisation.

Let me elaborate on each of these three broad criticisms in turn.

**Measuring Flexible Specialisation – The Absence of a 'Criteria of Dominance'**

One criticism that has been frequently levelled at attempts to claim flexible specialisation as an empirical phenomenon is that the theory itself fails to provide any appropriate measure or 'criteria of dominance' for differentiating flexible specialisation from mass production. The absence of some such 'yardstick' makes it impossible to determine whether or not flexible specialisation exists as an empirical reality. How long, for example, is a production run before it can assume the title of mass production? Ten thousand units, a thousand units, or perhaps a couple of hundred? Does the combination of product modules in different ways constitute flexible specialisation or is this a mutated form of mass production? Alternatively, how do we know that an national or regional economy has crossed the rubicon from mass production to flexible specialisation? How do we an economy was ever based on the principles of mass production?

This lack of clear analytic categories is particularly damaging for Sabel's analysis when he endeavours to classify the reorganisation of corporations as either

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maintaining the principles of mass production or adopting flexible specialisation strategies. It is a problem that Sabel is well aware of.

"...many corporations have adopted elements of the decentralised model without breaking fully with the organisational principles of the mass-production firm. Here, as with many newer industrial districts, it is **hard to decide** whether the firms are progressing toward flexible specialisation, have been obstructed in their efforts to move in that direction, or are successfully pursuing a long-term strategy which amounts to a modification – and not a repudiation– of past practice."59 (emphasis added)

It is 'hard to decide' precisely because the indicators of what constitutes mass production or flexible specialisation have never been made clear. Sabel tries to overcome these problems through identifying further characteristics of mass production such that mass production involves the separation of conception and execution.60 In the classical case this means the corporate headquarters develops the strategic plan, and the branch plants execute the plan: Taylorism between plants and departments within the firm. Therefore the decentralisation of corporate decision making is seen to represent a shift to flexible specialisation. However Sabel fails to recognise that a shift in the division of conception and execution between plants does not in any way indicate a rejection of a mass production strategy.61

One exception to the general lack of attention to developing meaningful indicators is the work of Sebastiano Brusco on small firms.62 Brusco develops a threefold typology of the types of small firms; traditional artisan, dependent sub-contractor and the small firm industrial district. Although not explicitly expressed by Brusco, the third type, the small firm industrial district, can be considered the organisational expression of flexible specialisation. Brusco establishes a series of indicators based on available statistics to distinguish these three models, such as whether the products are for local or international markets (traditional artisans produce for local markets), the percentage

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59 Sabel, C., "Flexible Specialisation and the Re-emergence of Regional Economies", *op. cit.*, p. 37
60 *Ibid.*, p. 31
of small firms that have a direct relation with the market (dependent sub-contractors have little direct contact with the market), the number of clients a sub-contractor has (in the case of industrial districts a sub-contractor has a lot of clients) and the relative mix of capital and consumer goods industries within a given locality (industrial districts have both capital and consumer goods sectors). Brusco argues that these indicators combined with other qualitative and quantitative data can enable the discrimination of the three models. However even here, Brusco is aware that the models can co-exist within a single region, and there are difficulties collecting certain data such as levels of profits of autonomous workers. It is unfortunate that very little of Brusco's more sober and thorough attempt to develop meaningful indicators has become part of the mainstream flexible specialisation thesis literature.

Do The Preconditions For a Paradigm Shift to Flexible Specialisation Currently Exist?

Beyond the problems of measuring and differentiating mass production and flexible specialisation, the flexible specialisation thesis is also criticised on the grounds that it offers a highly selective account of market structures, technologies and production strategies. These criticisms challenge both the explanation of the crisis of mass production and question whether the economic and technological preconditions for the emergence of flexible specialisation actually exist. A number of these criticisms are outlined below.

One preliminary criticism of the flexible specialisation thesis is that it provides inaccurate and over-generalised account of industrial history. There is significant evidence that small-scale production techniques and organisational forms remained dominant in some industries, even through the height of Fordism. Moreover for many nations, even industrialised nations, it is questionable that mass production techniques
were ever dominant.\textsuperscript{63} The flexible specialisation thesis presents mass production as an universal era, when in reality, the dominance of mass production techniques was confined to some industry sectors and some nations.

However a more important set of criticisms relate to the flexible specialisations thesis' assumption about the decline of mass markets. The flexible specialisation thesis suggests that the crisis of mass production was at least partly due to the saturation and fragmentation of mass markets.\textsuperscript{64} However, this view of market structures is problematic for a number of reasons. Firstly, for many products with high market penetration there is a significant market for replacements.\textsuperscript{65} As Robert Solo notes:

"Even supposing that the domestic market in the United States for consumer goods is "saturated", simple replacement demand (with any acceleration in the rate of replacement counting as growth) it is quite sufficient to justify the technology of mass production."\textsuperscript{66}

Secondly, accounts of the saturation of mass markets fail to recognise the role of product innovation in creating new mass markets. In the area of consumer electronics, compact discs, videos, and walkmen are all relatively new products with high volume sales. Such examples of product innovation demonstrate the dynamism of consumer capitalism and the continuing presence of mass markets.\textsuperscript{67}

Thirdly, the flexible specialisation thesis does not distinguish between market saturation due to a lack of demand, and market saturation due to a lack of effective demand (effective demand being demand backed by purchasing power).\textsuperscript{68} Therefore any fall–off in demand could be due to a fall in real incomes as much as to the

\begin{itemize}
\item \textsuperscript{63} Gordon, R, "Market and Hierarchies", \textit{op. cit.}, p. 2
\item \textsuperscript{64} Piore and Sabel, \textit{The Second Industrial Divide}, \textit{op. cit.}, pp. 184-186
\item \textsuperscript{65} Williams, K. \textit{et. al.}, "The End of Mass Production", \textit{op. cit.}, pp. 424-425
\item \textsuperscript{66} Solo, R., "Across the Industrial Divide: A Review Article", \textit{Journal of Economic Issues}, Vol. XIX, No. 3, September 1985, p. 834
\item \textsuperscript{67} Williams, K., \textit{et. al.}, "The End of Mass Production", \textit{op. cit.}, pp. 424-425
\end{itemize}
absolute saturation of markets due to the satisfaction of consumer needs.

A fourth and final criticism of the market saturation argument is that it fails to grasp the role of geopolitical factors shaping markets. For example, the liberalisation of the economies in Eastern Europe creates potentially massive new markets for consumer goods. The flexible specialisation thesis does not give due regard for such political contingencies which may dramatically alter markets.

In addition to the claims of market saturation, the flexible specialisation thesis is also based on a dubious understanding of the state of current technologies and production strategies. According to its supporters, the evolution of flexible production strategies and technologies provides the necessary preconditions for the emergence of flexible specialisation. There is indeed some evidence to support this claim. For example, an empirical study in West German concluded that a reduction in plant size in metalworking industries was at least partially attributable to the application of flexible technology, such Numerical Control (NC) machine tools. Flexible technologies enabled increased economies of scope and scale and displaced many pieces of dedicated equipment.

However the following counter-example would suggest that assumptions about the new-found flexibility of technologies and production systems are selective and are clearly not applicable to all industry sectors. The case of the steel industry which below demonstrates a continuing role for absolute economies of scale and large-scale production, and how Piore and Sabel provide an exaggerated account of the processes on industrial restructuring.

According to Piore and Sabel, numerous companies in the steel industry have

successfully shifted from strategies of mass production to the path of flexible specialisation. These firms responded to crisis by becoming more flexible through re-skilling their workforce and deploying flexible production technologies. Piore and Sabel argue that during the 1970s, steel firms developed new products different from standard carbon steel. The emerging strategy was based on improved quality, new shapes and alloys, and on filling short orders that were not previously filled. The two technological innovations which enabled this shift to steel production based on flexible specialisation were computer-controlled continuous caster and mini-mill processing ferrous scrap. Piore and Sabel cite several firms in Austria, Italy and the United States which have switched to this strategy of steel production that involves an increase in flexibility as part of their rationalisation.

This is an attractive image for the policy maker. The revitalisation of a mature industry based on a strategy of flexible specialisation involving the formation of a new type of steel industry based on flexible technology and customised products. While not directly disputing the evidence Piore and Sabel assemble, the patterns of reorganisation of the steel industry are far more complex than they suggest.

Firstly, mini-mills operate with scrap as input, not iron ore. As Williams et al. point out, "as long as steel mini-mills are scrap-charged, they can do little more than fill a niche in international markets where most of the output is produced in large-scale basic oxygen converters; the price of scrap would go through the roof if all the advanced countries used it as the basic raw material for steel production." Secondly, Piore and Sabel's account of the restructuring of the steel industry just focuses on the

71 Piore and Sabel ignore that special steels have always been produced in small batches even during Fordism. This is further evidence of the flexible specialisation thesis providing a simplistic view of industrial history based on a false dichotomy. (Hudson, R., "Labour-Market Changes and New Forms of Work in Old Industrial Regions: maybe flexibility for some but not flexible accumulation", Environment and Planning D: Society and Space, Vol. 7, 1989, p. 21)
73 Ibid., p. 211
74 Williams, K, et al., "The End of Mass Production", op. cit., p. 435
mini-mills. However, given the present structure of the industry, large blast furnaces will persist. Indeed currently the structure of the steel industry is predicated on them.75

This examination of the steel industry indicates that Piore and Sabel's suggestion that the steel industry is taking its first tentative steps toward flexible specialisation is illusionary. The mini-mill does not provide the technological or economic precondition for a steel industry based on the principles of flexible specialisation. The restructuring of the steel industry is far more complex than the flexible specialisation thesis allows. The structure of the steel industry continues to be shaped by the importance of absolute economies of scale and this is not properly addressed by Piore and Sabel. This example also highlights the substantial differences between the cost structures of different industry sectors. A conclusion about the role of flexible technology in the metal sector is not necessarily applicable to other industries. However the universal flexible specialisation thesis does not make these distinctions.

Besides the selective and exaggerated accounts of production and technological flexibility, the flexible specialisation thesis also ignores the significant costs of investment in computer-based technologies. Flexible manufacturing systems (FMS) tend to be extremely expensive and put such technologies outside the scope of many small firms.76 (The German study about flexible technology quoted above, avoided this issue through defining a small firm as having less than 500 employees! Anywhere

75 It is interesting to contrast this stylized view of the steel industry with the production strategies pursued by the Australian steel producer BHP (Steel). BHP's production strategy at Port Kembla, New South Wales is to produce standard steel as far downstream as possible. The speciality steels are created through altering the crystalline structure and hence the physical properties of the steel through different processes of cooling and quenching and coating standard steels. In fact BHP has undertaken considerable research in the area of plasma coating of standard steel, to produce steels with special properties based on a standard product. This strategy is based on combining both the principles of standardisation and customisation. By devising a system of modular production and altering steels downstream, BHP is able to gain economies of scale while producing a broader range of products. This is also evidence for the strong case that the analytic division between mass production and flexible specialisation is untenable.

else this would be considered a medium sized firm.)

Sayer also draws our attention to the high capital investment in many industries which is beyond small firms.

"Many kinds of capital investment still need to be very large and lumpy, putting them beyond the reach of small firms. Take the example of telecommunication companies producing digital public switching systems: these require billions of pounds to develop and the R and D is not easily split up and sub-contracted. Moreover, huge markets – far bigger than any European national market – are needed to amortize such investments."  

Yet the flexible specialisation thesis ignores this barrier to entry for small firms and Brusco even goes so far to suggest that "flexible technology is much less expensive than its predecessor and, more importantly, it is quite compatible with the needs of small firms."  This displays considerable ignorance of the costs structure of computer based technology.

**The Empirical Evidence – Conflicting Accounts of the New Industrial Districts and the Decentralisation of Transnational Corporations**

Yet the most substantial issue facing any assessment of the empirical validity of the flexible specialisation thesis concerns the reality of the much vaunted industrial districts. At the centre of the flexible specialisation thesis are numerous case studies of industrial districts. This section critically investigates several of the industrial districts central to the flexible specialisation thesis.  The Third Italy is the obvious focus for this investigation of the re-emergence of industrial districts, because it has been the subject of intense academic scrutiny over the past decade or so, and is central

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77 Sayer, A., "Post-Fordism in Question", *op. cit.*, p. 675
79 This section is quite long, and could have stood on its own as a separate chapter. However I considered it more useful to integrate it in to the critique of the flexible specialisation thesis. It should be noted that the critique of the Third Italy, Silicon Valley and Sakaki is also relevant the critique of Allen Scott's new industrial spaces. Scott draws heavily on the case studies of flexible specialisation theorists.
to the argument of many post-Fordist theorists and other researchers.80 The other 'industrial district' investigated in some depth is Silicon Valley.81 A satisfactory explanation of Silicon Valley within the flexible specialisation - industrial district framework is an important step if the theory is going to offer more than an account of the resurgence of European craft based industries. The role of Japanese small manufacturing firms and the patterns of corporate decentralisation are also investigated because of their centrality to post-Fordist arguments.

The Third Italy - Flexible Specialisation, the Black Economy or Something Else?

Much has been made of the Third Italy and its pattern of small scale industrialisation. In a short time it has become an icon of post-Fordist capitalism, and a beacon for progressive regional planners, policy-makers, trade unionists and managers worldwide.82 However beneath this general euphoria, there is still much debate about the Third Italy model of industrialisation. On the surface there is agreement that the Third Italy constitutes an identifiable path of industrial production based on localised and interdependent small and medium sized firms. But beyond these general observations there is little consensus about the economic and political dynamic which shaped the industrial districts, and the social consequences of this industrial trajectory. This section investigates patterns of industry development of the Third Italy and other aspects of the social formation in order to assess whether we are witnessing production

80 For example, in addition to post-Fordist theorists Michael Porter's highly influential The Competitive Advantage of Nations MacMillan, London, 1990 and Charles Perrow's recent work on Small Firm Networks Unpublished, Yale, 1990 both draw extensively on the industrial districts of the Third Italy. 81 The work of Anna Lee Saxenian is an example of the attempt to translate the craft based account of flexible specialisation onto the high technology agglomerations in the USA. See Saxenian, A., "Regional Networks and the Resurgence of Silicon Valley", California Management Review, Fall 1990, pp. 89-112 82 For example in the United States at least four schemes or programmes to foster industrial districts were developed following visits to Emilia-Romagna. The four programmes are metal-working in East Brooklyn, manufacturing and innovation networks in Pennsylvania, the Machine Action Program in Massachusetts, and the Michigan Modernisation Service. The Australian Manufacturing Council also visited Emilia-Romagna to investigate the Third Italy industrial districts. (Burke, J., Networking, Australian Manufacturing Council, 1990) See Chapter Four for further examples of the role of the Third Italy as a model for policy makers, trade unions and managers.
based on flexible specialisation, a reversal to some exploitative ancient regime of accumulation, or something different. It is difficult to arrive at a definitive conclusion about the nature of the 'real' Third Italy given the intricacy of the debate and a lack of evidence to confirm or refute the apparently premature conclusions drawn by some authors.

The notion of the three Italys was developed by the Italian sociologist Arnaldo Bagnasco to describe the main regional economies in Italy.83 Within this description the First Italy, based on the triangle of Milan, Turin, and Genoa, has been the recognised heartland of Italian industry. It is here that the household names of Italian industrial capitalism, such as Fiat and Olivetti, are located. The Second Italy refers to the underdeveloped southern Italy (Mezzogiorno) which traditionally was an agricultural region, but which over the last twenty years has undergone industrialisation primarily through state assistance and the relocation of branch plants.84 And the Third Italy, as we have already described, comprises the central and north-east regions of Italy, Emilia-Romagna, Friuli-Venezia Giulia, Marche, Trentino-Alto, Adige, Tuscany, Umbria and Veneto. Of these three Italys, it is the industrialisation of the Third Italy which has captured the imagination of policymakers, industrial economists and theorists of flexible specialisation.

The 1981 Italian industrial census provided the statistical picture to confirm Bagnasco's description of the Third Italy as a region with a distinct pattern of industrialisation based on localised concentrations of small and medium sized firms.85 The census also indicated that this model of industry development was expanding and contributing significantly to the national economy, through employment generation and exports.

83 Bagnasco, A., Tre Italie: La Problematica Territoriale dello Sviluppo. Mulino, Bologna, 1977
85 Amin, A., "Flexible Specialisation and Small Firms in Italy: Myths and Realities", Antipode, Vol. 21, No. 1, 1989
Scott reports that between 1961 and 1971 industrial employment in the Third Italy increased by 25.9% whereas employment in Italy overall increased by only 11.8%. And more impressively during the period 1971 to 1981, while industrial employment in Italy increased only 4.3% (with a decline of 2.2% in the First Italy (Genoa-Milan-Turin)), in the Third Italy the increase was 19.7% and by 1981 the Third Italy accounted for 37.3% of Italy's manufacturing sector employees.\(^8^6\) It is also significant to note that the Third Italy contributes 25% to Italy's exports,\(^8^7\) and that during the period 1971 to 1981 small firms experienced particularly high rates of growth.\(^8^8\)

Importantly the census data also enabled a determination of the number of industrial districts in the Third Italy. A study commissioned by the Italian trade union body, the Confederazion Generale Italiana del Lavoro, primarily based on the 1981 census data, indicated that there are 99 Marshallian industrial districts in Italy, 85 of which are situated in the Third Italy region.\(^8^9\) Interestingly more than 60% of these districts were formed after World War Two. All the districts combined, employed close to half a million workers distributed among 55,000 local economic units (firms) with an average of 8.2 employees per unit. The growth of industrial districts paralleled an increased percentage of the total workforce being employed in small firms (55.5% in 1981 and 48.5% in 1971).\(^9^0\)

The data also indicated the main industrial activities that were concentrated in industrial districts were mostly craft based, including textile, clothing and footwear, furniture, jewellery, glasses, but also some mechanical and electrical engineering. For

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\(^8^7\) Istituto Nazionale per il Commercio Estero, *Technological Renaissance in Italy*, ICE, Roma, 1988
\(^8^8\) Amin, A., "Flexible Specialisation and Small Firms in Italy: Myths and Realities", *op. cit.*, p. 20
\(^9^0\) Amin, A., "Flexible Specialisation and Small Firms in Italy: Myths and Realities", *op. cit.*, p. 20.

Ash Amin notes that the census overestimated the shift to small firms, but even allowing for statistical differences it was widely accepted that growth of small firms had been substantial.
example, Capri produces knitwear, Reggio Emilia, farm machinery, Bologna, electronic equipment, Sassunolo, ceramics, Marche, shoes, and Prato, textiles. The census also provided the basis to determine the level of employment and other economic indicators for specific industrial districts. In Prato, for example, between 1951 and 1981 employment nearly doubled from 21,000 to 48,000, and the number of firms increased from 750 to 11,000.

The picture painted by the census was clear and widely accepted. The small firm industrial districts had expanded and grown through a period of capitalist crisis when the industrial heartland of Italy was in decline. The census and other macro-economic indicators, however, could only point to the phenomenon without offering any explanation of how the growth occurred. Following the interest in the census data, a series of case studies have been undertaken to provide an understanding of the economic and political dynamics that underpin the apparent industrial success of the Third Italy. These case studies have produced quite different accounts of the social and economic causes and consequences of this pattern of industrialisation. On one hand many studies of the industrial districts, particularly in the region of Emilia-Romagna, have supported the flexible specialisation thesis. These studies suggest that the success of the industrial districts is derived from a combination of flexible, and specialised small firms, inter-firm collaboration, and a supportive public infrastructure. This position holds that the industrial districts achieve competitive advantage through permanent innovation and high quality products. On the other hand, a critical perspective has emerged from case studies of regions in the Third Italy other than Emilia-Romagna, and from differing interpretations of the nature of industry in

91 Mathews, J., and Weiss, L., A Tale of Two Industries: Textiles in Italy and Australia. Industrial Relations Working Paper No. 86, School of Industrial Relations and Organizational Behaviour, University of NSW, 1991, p. 18
Emilia-Romagna. This critical literature offers a variety of other explanations, suggesting that the 'success' of the Third Italy based super-exploitation of labour, a sizeable black economy or government subsidies. It is also suggested that the Third Italy industrial districts are only a transitional phenomena which is already passing.

The next section provides an account of the industrialisation Emilia-Romagna consistent with the flexible specialisation thesis. This is followed by a review of critical arguments which bring into question both the representativeness of the case studies of Emilia-Romagna and their interpretation as providing support for the flexible specialisation thesis. Finally, some assessment is made of the conflicting evidence.

**Emilia-Romagna – The Flexible Specialisation Story**

The region of Emilia-Romagna has been the site of much of the case study research of the Third Italy model of industrialisation. This attention has been largely due to the region's impressive economic performance, even when measured against the other regions of the Third Italy.

Over the last twenty years most economic indicators show that Emilia-Romagna has out-performed the rest of Italy (including other regions in the Third Italy). In recent years Emilia-Romagna had the highest rate of growth, and the highest per capita income of all regions in Italy. The export performance of the region has risen from

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6% of Italian exports in 1963 to approximately 10% in the mid 1980s, which in 1983 translated to a $5 billion trade surplus for the region. In labour market terms the performance of the region is also noteworthy. The workforce participation rates are higher, and the unemployment lower than Italy's average.

At the centre of the region's economic miracle are the well known small firm industrial districts of Bologna (electronic equipment, automation systems and medical and telecommunications equipment), Capri (textiles), Reggio-Emilia (farm machinery), Modena (farm machinery and textiles), and Sassunolo (ceramics). These industrial districts have been the main contributors to Emilia-Romagna's economic growth, and provide further evidence of the contribution of small firms to the regional economy. From the numerous studies of Emilia-Romagna it is possible to distil an account of the industrialisation of the region which follows.

As with any process of industrialisation, the rise of Emilia-Romagna has been based on a multitude of political, cultural, economic and institutional forces. Many of the contributing preconditions to the industrialisation of Emilia-Romagna lay in the distant past. For example, it is suggested that the Italian industrial districts are based on the cultural remnants of the Italian city states of Florence, Venice, Pisa, and Anconna, which were central to European civilisation from the second millennium onwards. (Bologna hosted the first recorded trade fair in 1219.) It is argued that the international focus and strong local traditions which characterised the city states are features which are retained in the present day culture of the Third Italy.

It is also suggested that the technical schools established in 1839 and the University of

94 Like other parts of the Third Italy, Emilia-Romagna's economy is based on smaller firms than the rest of Italy. Its economically active population of 1.7 million (total population is 4 million) is employed in 325,000 firms (an average of approximately 5 workers per firm). Ninety percent of manufacturing firms employ under 99 employees and over one third of the workforce is self-employed.


95 Istituto Nationale per il Commercio Estero, op. cit., p. 55
Bologna (the first university in the Western world) have played a vital role in the transfer of technical and non-technical knowledge throughout the region.\textsuperscript{95} The long Communist and socialist traditions of Emilia–Romagna are also seen to have assisted in the development of the small firm industrial districts.\textsuperscript{96} It is suggested that this local political culture promoted the formation of associations and co-operatives in the cities and rural areas. These organisations laid the foundation for the system of co-operative production of the industrial districts of Emilia–Romagna.

A further factor understood to contribute to the rise of Emilia–Romagna was the structure of the regional economy through the first part of the century. There was a strong agricultural sector employing over 50\% of the working population. Yet 60\% of this working population had experience as small farm entrepreneurs, thus providing a cultural foundation for the shift to small and medium sized manufacturing establishments.\textsuperscript{97}

Also many of the industrial districts which now contribute to the industrial success of Emilia–Romagna were already established as proto-industrial districts well before the twentieth century, and there was already some evidence of customised production based on the principles of flexible specialisation. The ceramic industry in Sassuolo, for example, has its roots in the 1500's, and experienced expansion through the nineteenth century.

However, these conditions were necessary but not sufficient, to stimulate the industrialisation of Emilia–Romagna. According to the flexible specialisation thesis, the 'take-off' of Emilia–Romagna industrial districts was the result of sub-contracting and decentralisation of production away from the large firms during the late sixties and early seventies to small firms in Emilia–Romagna.\textsuperscript{98}

"From the early 1970s on, they (employers) decentralized production. Whole units

\textsuperscript{95} Capecchi, V., "A history of flexible specialisation and industrial districts in Emilia-Romagna", op. cit., pp. 23-26
\textsuperscript{96} Ibid., p. 23
\textsuperscript{97} Ibid., pp. 24-5
were transferred to small, physically separated firms. "99

This putting-out strategy was pursued to offset the effects of militant unionism and industrial conflict in the large Italian factories. However, what started as a temporary strategy with the intention of regrouping production in the large factories after worker militancy had subsided became a more permanent feature of Italian industrial geography. 100 These small firms, at first operating as sub-contractors, began to escape their dependence on large firms through developing products and markets independent of the large firms. 101

The flexible specialisation thesis suggests that the second principal factor which supported the rise of Emilia-Romagna was the fragmentation of mass markets. The thesis argues that market fragmentation reduced the advantages of mass production technologies and techniques, and favoured production based on a more versatile labour force and flexible tools. 102 It is believed that this change in market structure also forced small firms to develop more innovative products. The need for innovation realised new forms of intra- and inter-firm organisation. Small firms were more reliant on the skills and knowledge of workers and other firms to foster innovation, and this encouraged more collaboration and localisation. 103 Or so the flexible specialisation story goes!

The decentralisation of production, the fragmentation of mass markets, intra- and inter-firm collaboration combined with Emilia-Romagna's political, industrial and cultural environment to give rise to industrial districts based on the principles of flexible specialisation. An example of this system of production is the Morini

100 Ibid., p. 226
102 Brusco, S., "The Emilian Model", op. cit., p. 172
motorcycle plant. The plant—

"has 100 employees and produces an average of 20 motorcycles per day. Most of the workers in the plant are engaged in assembly, on lines on which tasks are not very subdivided. Except for the camshaft and the engine mounting, all the components are put out: the frame, the tank, the shock absorbers, the handlebars, the brakes, the gears, and the wheels; almost the whole machine is produced by sub-contractors."104

The consolidation of this system of decentralised production, however according to the flexible specialisation thesis, required new institutional and political strategies. Organisations and associations were formed which generated external economies of scale for key functions such as marketing, technical intelligence and administration in order to overcome the limitations of the small firms. For example, in 1974 the regional government established the Regional Agency for the Economic Evaluation of the Territory (ERVET) to provide services to small firms such as information about foreign markets, technical advice and vocational training.105 The National Confederation of Artisans (CNA) also plays an important role in providing services to small firms with less than twenty employees. CNA is the largest trade association in Italy, and was the creation of the communist and socialist parties.106 CNA provides an array of services to small firms including; personnel and accounting services, development of industrial parks, training, facilitation of the organisation of consortia for major contracts and purchasers, financial assistance and insurance.107 Through the collective provision of these services, small firms can achieve external economies of scale.

The state has also played a significant role in supporting the small firm industrial districts through legislation and infrastructure, particularly the Artisan Act of 1956. This legislation defined a special category, the artisan enterprise which employed less than twenty employees. The legislation provided generous concessions for artisan

104 Brusco, S., "The Emilian Model", op. cit., p. 172
105 Capecehi, V., op. cit., p. 32-33
106 Best, M., The New Competition, op. cit., p. 209
107 Burke, J., Networking, op. cit., p. 8
enterprises including cheap loans, and health and pension schemes. 108

A further element in consolidating the small firm industrial districts in Emilia-Romagna has been the position and policies of the Italian Communist Party (PCI). Whereas Marx, Lenin, and Kautsky viewed small firms as parasitic and technically inferior to large firms, the PCI has long held a different view. 109 Since World War Two, the PCI have sought to build a class alliance with sections of the middle class in order to further marginalise Fascist political forces in Italy. This position was crystallised in Togliatti's address to the 8th Party Congress in 1956. He declared:

"The Communist Party does not aim to conclude a precarious tactical agreement, but rather to lay the foundations for an alliance between the working class and the productive middle classes destined to set the Italian economy on a new course, within the framework of a democratic programme and a policy of reforms... A labour alliance is also essential to beat back Fascist attempts at revival." 110

Apart from a class alliance against Fascism, Togliatti also viewed this strategy as necessary given the structure of the economy. While the PCI still viewed the large-scale businesses as more efficient, small and medium sized enterprises played an important role against monopoly capital.

This is the story of the industrialisation of Emilia-Romagna from the flexible specialisation thesis perspective. The small firms of the industrial districts are seen to derive economies of scale and scope arising from firms specialising in sections of the production chain, the skills and knowledge of artisans, entrepreneurship, innovation, and a supportive local infrastructure.

109 Brusco, S., and Pezzini, M, "Small-scale enterprise in the ideology of the Italian Left" in Pyke, F., Becattini, G., and Sengenberger, W., (ed.) Industrial districts and inter-firm co-operation in Italy, International Labour Organisation, International Institute for Labour Studies. Geneva, 1990, p.144 To this extent, the PCI shares some similarity with the traditional Left view that the large scale businesses are more efficient. But unlike the traditional view, the PCI viewed small firms as potential competitors of big business.
110 Brusco, S., and Pezzini, M, op. cit., p. 151
Alternative Explanations of The Rise of the Third Italy

This proceeding account of the industrial district in Emilia-Romagna is, however, challenged on a variety of different grounds. Several researchers suggest that the competitive advantage of Third Italy industrial districts (including Emilia-Romagna) is not achieved through 'flexible specialisation'(permanent innovation and skilled labour), but instead is derived through super-exploitation of labour, and a sizeable black economy rife with tax avoidance. Others argue that the industrial success of the Third Italy is only a temporary or transitional phenomenon, and that there are already indicators that small firms are being taken over, and industrial production is returning to the First Italy. A further criticism is that the flexible specialisation explanation ignores the role of Keynesian policies pursued by the national Italian government. Others suggest that the Emilia-Romagna industrial districts are unique, and the other regions of the Third Italy are very different.

All these criticisms warrant close attention, particularly in light of the enthusiasm of trade unionists, policy-makers and managers toward the Third Italy model. Let us examine each of these criticisms in turn.

The Third Italy as a 'Sweat Shop'?

For trade unionists the most serious criticism of the Third Italy model of industrial development is that it is based on exploitation of low wage labour, poor working conditions, the intensification of work, longer working days, and a dualised labour market. These criticisms have been made in several case studies of industrial districts within and outside Emilia-Romagna and through general surveys of the working conditions in small firms across Italy.111 There is substantial evidence of high levels

of exploitation in some industrial districts, but it is difficult to conclude that the success of all industrial districts are entirely based on 'sweatshop' conditions.

In general across the Italian economy it would appear that wages and conditions in small firms are worse than large firms. A survey by the Italian National Institute of Statistics indicated that the unit costs of labour in 1983 were on average 40% higher in large firms than small firms, and manual workers in small firms worked an average of 12% more hours than those in large firms.112 Yet this national survey, while provides an insight into the whole Italian it does not necessarily support the conclusion that the Third Italy industrial districts are also based on 'sweatshop' conditions. However, these statistics do show that the case of the Third Italy model as presented by the flexible specialisation thesis is far from universal across Italy.

There is also evidence of some industrial districts in the Third Italy being very much based on low wage labour. The shoe industry in Marche, the furniture industry in Bassa Veronese and other industrial districts in Veneto, provide evidence of low wages, extensive over-time and poor health and safety conditions.113 Here also the difficulty that arises is that these industrial districts are not necessarily representative of the entire Third Italy. The results do not for example necessarily confirm that industrial districts in Tuscany and Emilia–Romagna are also based on low wages and poor working conditions.

There is however some evidence of a dualised labour market in the industrial districts of Emilia–Romagna with lower than national minimum wages levels.114 Several

and Murray, F., op. cit.
112 Amin., A., "Flexible Specialisation and Small Firms in Italy", op. cit., pp. 22-23 Interestingly, this study also concluded that small firms in Italy were not as technically innovative as larger firms. This also runs counter to the arguments of the flexible specialisation thesis.
114 Brusco, S., "The Emilian Model", op. cit., p. 172
studies highlight a core of skilled male workers and a secondary labour market of non-EEC, women, and aged workers. Workers in this secondary labour market are the lowest paid, have the least skilled and most repetitive jobs.

"Racial, gender and skill divisions are essential to the operation of the economic model. The quality craft work that Sabel discovers is work for middle-aged, Emilian men. Semi-skilled assembly work, plastic moulding, and wiring work is carried out by women, while heavy foundry and forging work is carried out by southern Italian and North African workers." 115

There is also evidence of extensive 'hiring and firing' (numerical flexibility) in this secondary labour market.116 This work is often performed from houses and may involve members of the family. 117 Pollert also points to the existence of a spatial division of labour, "so that privileged and successful industrial regions, in Emilia-Romagna, for example, can export the insecurity, poor pay and working conditions needed to provide 'flexibility' with fluctuations in demand, to surrounding areas." 118

This evidence does indicate classical 'sweatshop' conditions in some industrial districts, but the picture is not so clear in the region of Emilia-Romagna. There is however, a segmented labour market in Emilia-Romagna where workers in the periphery receive lower wages, perform less skilled work and have poorer working conditions.

**The Black Economy – Lavoro Nero**

A further criticism of the Third Italy industrial districts is that their competitive advantage derives from practices such as tax avoidance and the use of undocumented labour. One prominent study by Michael Blim suggests that undocumented labour is widespread in the footwear industry in Marche. This involves unregulated and unsafe

115 Murray F., "Flexible Specialization in the Third Italy", *op. cit.*, p. 88
116 Ibid., p. 91
118 Pollert, A., "Dismantling Flexibility", *op. cit.*, p. 69
work by pensioners, children and women, and under the counter payments of less than minimum wages. Through this system the costs of insurance, unemployment, compensation and other costs are shifted on to workers.119

The study by the Italian peak trade union body, the Italian General Confederation of Labour (CGIL) shows that there is evidence of substantial variation between regions in the Third Italy with respect to the extent of black labour (lavoro nero).

"The phenomenon, though unknown in Bologna – in part due to rigorous union control – is a feature in the Bassa Veronese and Barletta. In the Bassa Veronese there are an estimated 2,000 workers in the furniture-making industry employed without contracts. In Barletta, in the absence of precise figures, the estimates concerning the number of "illegal" workers runs much higher, especially in the small firms in the textile/clothing industry located close to Barletta itself."120

However for obvious reasons such an argument is difficult to prove or disprove and much of the evidence of the black economy is necessarily anecdotal. Yet it would appear that the black economy is particularly pronounced outside areas of strong union control – in the 'White' areas of the Third Italy and in industrial districts in the South of Italy.

*The Third Italy – a Transitional Phenomenon*

Another critical interpretation suggests that the success of the Third Italy industrial districts is only a temporary and transitional phenomenon. There are four broad criticisms which bring into question the stability and longevity of the flexible specialisation – industrial district model.

Firstly, it is argued that the industrial districts of the Third Italy are already being integrated into the wider international division of labour through take-overs by large

120 Ricoveri, G., Cilona, O., and Focker, F., *op. cit.* p. 72
national and transnational corporations of small and medium sized enterprises. As Ben Harrison argues in his appropriately titled paper, "Concentration without Centralisation":

".....the 'canonical' Italian districts as conceptualised by Becattini, Brusco, Sabel and others are already displaying signs of instability, in the face of pressures toward increasing concentration of ownership and/or control of productive assets."121

This same point is made by Claudio Tollimelli, a prominent Italian commentator on Emilia–Romagna.

"We see that the traditional organisation of the industrial district will be overshadowed and replaced by an organisation based on a group of enterprises, with a variety of interconnections and tied to Italian and foreign corporations... Groups of firms are not only taking over individual firms, but through them can enter the web of relations between firms within the districts and integrate them into their corporate network" 122

Secondly, the Italian economists, Camagni and Capello have demonstrated that the industrial productivity of the traditional industrial triangle of Italy is growing more rapidly than in the Third Italy, and there is already some evidence of the restoration of the industrial and economic hegemony of Milan–Turin–Genoa. The regional wage/productivity gap which through the sixties and seventies worked in favour of the Third Italy has virtually reversed in favour of the traditional industrial heartland in the north–west regions.123

A third reason to suspect that some Third Italy industrial districts are only a transitional phenomenon, is that export oriented industrial districts are premised on the maintenance and expansion of overseas demand.124 Yet as the experience of the shoe

121 Harrison, B., "Concentration without Centralization: The Changing Morphology of the Small Firm Industrial Districts of the Third Italy", Paper prepared for the International Symposium on Local Employment, National Institute of Employment and Vocational Research, Tokyo, Japan, 12-14 September 1989. It is encouraging that this view is also shared by Bruce Herman, President of the New York Garment Industry Development Association who has been promoting the flexible specialisation model in Australia. (Personal communication 29 April 1991, Roschill Turfclub, Sydney)
122 Amin, A., *op. cit.*
producers in Marche demonstrates, the loss of market share to cheaper products from Brazil and Asia can have very damaging effects. The Marche shoe industry also indicates that many under-capitalised and under-resourced small firms are poorly equipped to respond positively to foreign price-based competition, and it appears that Marche shoe producers are attempting to compete with foreign competitors on the basis of price, not through innovation and selling differentiated quality products. In addition, this example highlights that the Italian industrial districts may be particularly vulnerable when the effective demand for high quality, customised Italian products is reduced through economic recession. It would be very interesting to know how well the Third Italy industrial districts are coping through the current global economic recession.

A fourth and final concern about the long term prospects of the Third Italy industrial districts relates to the capacity of industrial districts to negotiate dramatic shifts in technology and production techniques. The institutional support and organisation of industrial districts are well developed to facilitate incremental innovation within the industrial districts. However, it is less clear whether the local institutions (service centres, trade associations, and technical colleges) are capable of incorporating radical innovations. There is an argument that an industrial district would be heavily reliant on the national system of innovation (R&D and educational institutions) to restructure in the face of radical innovations. Recognising this problem, the regional government of Emilia–Romagna has recently established an Agency for Technological Development of Emilia–Romagna (ASTER) to increase the R&D level of firms in the region.

126 Burke, J., Networking, op. cit., p. 17
National Government Support?

A further argument which questions the flexible specialisation explanation of the rise of Emilia–Romagna is that national macroeconomic policies of demand management have played an important role in supporting the development of Italian industrial districts. According to Thompson the Italian national government's debt amounts to 100% of GDP and the deficit in 1987 was 11.6%. The OECD have argued that this deficit is responsible for maintaining the aggregate demand that has stimulated the growth enjoyed by some industrial districts in the Third Italy. It is also argued that the deficit has been used to financed extensive government economic interventions which have also contributed to growth. Yet the role of macro–economic management is left unexplored in the flexible specialisation thesis account of the rise of the Third Italy.

Emilia–Romagna – a Unique Industrial District

A final criticism of studies of the Third Italy, which has already been alluded to, is that studies and conclusions from one industrial district and industry sector are projected on to districts and industries. This is particularly the case for studies of industrial districts within Emilia–Romagna. Industrial districts outside Emilia–Romagna are almost exclusively craft based. Emilia–Romagna is the only region with industrial districts in engineering based industries. Moreover, Emilia–Romagna stands out with respect to the diffusion of advanced technologies. "So far, however their diffusion remains limited, with important exceptions such as that of machine–tool districts, especially in Emilia–Romagna."
An Assessment of the Third Italy

There are several problems with attempting to assess the conflicting accounts of the industrial districts of the Third Italy. Firstly, the debate within the political Left about the Third Italy is highly polarised along political lines. On one hand, traditional socialists view the proliferation of small firms as necessarily regressive and opening the way for new forms of paternal control and exploitation. In contrast, anarcho-syndicalists, municipal socialists, Proudhonists and other supporters of localism and non-statist political structures interpret the Third Italy as a political ideal. (These political positions are discussed later in this chapter.) Secondly, there remains often conflicting and insufficient evidence about the nature of the industrial districts within Emilia–Romagna and other industrial districts in the Third Italy. Given these problems it is very difficult to arrive at a definitive conclusion about the real 'Third Italy' or the real 'Emilia–Romagna'.

However with these caveats aside several general conclusions can still be drawn. Firstly, it is apparent the industrial districts of Emilia–Romagna are unique, and it is a mistake to project the 'Emilian' model onto the Third Italy region. As was demonstrated above there is considerable variation in the working and living conditions in different industrial districts. Yet there has been a tendency to ignore these considerable differences in discussing the Third Italy model. The flexible specialisation thesis does not capture the diversity of industrial and social trajectories of these industrial districts. Secondly, it is apparent that the model of industrial districts painted by Piore and Sabel and other flexible specialisation theorists is far too optimistic. There is considerable evidence about poor working conditions and low wages which is completely ignored. The work of the Italian economists such as Brusco, Trigilia, Tollimelli, and Becattini provides a more sober perspective of the Italian industrial districts and acknowledge some of the less attractive features of Italian industrial districts. Thirdly, there is emerging evidence suggesting that the
small firm industrial districts are transitional phenomena.

In conclusion, some features of some industrial districts do support the flexible specialisation thesis, but in light of the substantial conflicting evidence the case is not so convincing. Moreover, as I shall now demonstrate, the case of the flexible specialisation thesis becomes even less persuasive when other 'industrial districts' outside Italy are interpreted within the flexible specialisation framework.

Beyond the Third Italy – The Search for Other Industrial Districts

Since the 'discovery' of the Third Italy in the mid seventies the pursuit of industrial districts has become a favoured research project for industrial economists, sociologists, and geographers. This work has realised a long list of districts. Aside from the Third Italy other cited industrial districts include; the 'Second Denmark' around Jutland (textile, garment, and furniture industries), Smaland in Sweden (metal working), Germany's Baden-Württemberg (automobile components and machine tools), Los Angeles (film industry), Silicon Valley (semi-conductors), Route 128 (mini-computers), Sakaki in Japan (machine tools), and Oyonnax in France (injection moulders). Two significant examples of this research agenda have been Friedman's interpretation of the significance small and medium enterprises in Japanese manufacturing, and Anna Lee Saxenian's account of Silicon Valley as an industrial

district. Both of these studies are important because each involves applying the flexible specialisation formula to understanding industrial locations which are widely considered as modern day exemplars of industrial capitalism. This is an important step for the flexible specialisation thesis if it is to offer more than a theory of the resurgence of Italian craft based industries. In investigating these both these studies let us first consider the American high technology agglomeration – Silicon Valley.

**Silicon Valley an Industrial District?**

The recent history of the semi-conductor industry, at a glance does conform with the flexible specialisation thesis in some ways. Two relatively separate strategies have emerged within the semi-conductor industry. The mass production strategy involves pursuing high-volume, standardised products, and an international division of labour seeking out low cost assembly sites in Malaysia and elsewhere in South-East Asia. The other strategy is based on the design and production of small batches of custom or Application Specific Integrated Circuit (ASIC) chips and devices by small and tightly interconnected specialised producers. This second strategy is viewed as the flexible specialisation path pursued by the small start-up high technology firms which predominate in Silicon Valley.\(^{131}\)

It is argued that the success of small start-up firms in Silicon Valley is underpinned by three technological developments since the mid-seventies which have radically altered the economics of low volume design and production of semi-conductors. Firstly, the vast improvement of CAD systems and circuit analysis software has dramatically reduced the cost and time to design and develop ASIC (custom) and Very Large Scale Integrated (VLSI) chips. Secondly, the development of new fabrication plants known as 'mini-fabs' has enabled shorter production runs and a wider product range over chip

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fabrication systems at a lower capital costs. As a result of mini-fabs Anna Lee Saxenian argues that—

"Silicon Valley start-ups produced an average of 100–200 different types of chips on the same line with production runs ranging from 10 and 10,000 units. The large U.S. producers, by contrast, produced 10–20 different commodity memory or logic devices on a line, with runs of one million units." 132

The third development was the application of specific device technologies (gate arrays and standard cells) that reduced the cost of producing working semi-conductors from circuit designs. 133

These features of the production system and technology and the strong localisation of the semi-conductor industry have encouraged several researchers to conclude that Silicon Valley represents a high-technology industrial district based on the principles of flexible specialisation.134 Sabel even argues that trust underpins both the Third Italy and Silicon Valley. The trust is built not through family co-operation and local history, but instead "... is established through common educational and professional experiences, reinforced at times by ethnic allegiances or local pride." 135

There are, however, significant differences between the Third Italy and the Silicon Valley which suggest that attempting to equate the two systems of productions is hasty and inaccurate. Firstly, at a cultural level Silicon Valley and the Third Italy are very different. The trust identified by Sabel does not extend through Silicon Valley or the semi-conductor industry. The semi-conductor industry is far more litigious and is based on a far more individualistic culture that the Third Italy. Silicon Valley is driven by short-term profits, intellectual property litigation, and take-overs.

132 Saxenian, A., "Regional Networks and the Resurgence of Silicon Valley", op. cit., p. 93
133 Angel, D., op. cit., p. 214
135 Sabel, C., "Flexible Specialisation and the Re-emergence of Regional Economies", op. cit., p.47
"Cypress Semiconductor, for example, currently faces at least 20 intellectual property lawsuits. Larger firms like DEC and Intel have developed in-house staff of ten or more lawyers to deal with intellectual property litigation. 136

The culture of Silicon Valley is also hostile to the public sector. 137 As result, unlike the Third Italy, Silicon Valley lacks the public sector infrastructure to support local firms, and develop long term plans for the regional economy.

A second key difference between Silicon Valley and the Third Italy is that the linkages between semi-conductor firms are quite different from the production networks of the Third Italy. In the semi-conductor industry the inter-firms linkages are far more complex and contradictory, and often arms-length relationships exist. In addition, Silicon Valley firms are increasingly integrated into the global semi-conductor industry, and start-up firms are increasing sub-contracted chip fabrication off-shore to Japanese, Korean, Tawainese, and now Singaporean firms. 138

A third difference is that even with flexible technologies, R&D costs in the semi-conductor industry continue to soar. Intel, for example, spent in excess of $100 million developing the 80386 microprocessor. These rising R&D costs and the capital intensive nature of the semi-conductor industry are promoting vertical integration in Silicon Valley. 139 These technological and economic barriers to entry are generally far lower in the craft based industries of the Third Italy.

Yet the most important difference between Silicon Valley and the Third Italy is that the formation of Silicon Valley owes more to the military industrial complex than it

138 Florida, R., and Keeny, M., "Silicon Valley and Route 128 Won't Save Us", op. cit., p. 71
139 Martinelli, F., and Schenberger, E., Oligopoly is alive and well, op. cit., p. 125

does to the saturation of mass markets and emergence of flexible technologies.

"The new, celebrated instances of high-tech agglomerations such as Silicon Valley, Los Angeles and Orange County and Boston's Route 128 are indeed a new kind of industrial district, but not because they were metaphysical 'windows of opportunity', or the products of some irrevocable epoch-demarcating and exogenous technological leap, but because of the particular technologies and industries chosen for state sponsorship in pursuit of the cold war and its military missions." 140

Furthermore Amin and Robins suggest that Silicon Valley is probably better explained through Vernon's product life cycle, or the idea of growth poles, rather than the flexible specialisation thesis. Silicon Valley dominance in the world of semiconductors arose through a near monopoly on certain products and production techniques at a particular time which led to agglomeration. The forces of agglomeration here are very different to the Third Italy. 141

There are also concerns about projecting Silicon Valley forward as a model for the reindustrialisation of the United States. While many Silicon Valley based firms are commercially successful, the employment and value-added by large Japanese semiconductor firms based on the principles of flexible mass production is far greater - capturing niche markets will not save U.S. industry. Moreover the U.S. semiconductor industry is quite separate from other industry sectors in U.S. preventing the flow of inter-industry innovation could assist in revitalising the United States traditional manufacturing base. 142 The point here is that Silicon Valley should not be held up as an ideal for U.S. policy makers.

In concluding this brief exploration of the Silicon Valley it is evident that there are a few superficial similarities between the Third Italy and Silicon Valley. However, simply seeking to transpose the Third Italy model obscures the very significant

141 Amin, A., and Robins, K., op. cit., p. 25
142 Florida, R., and Keeny, M., Silicon Valley and Route 128 Won't Save Us". op. cit.
differences between the high-tech agglomeration of California and the industrial districts of North East Italy. In the final analysis the differences are too great to usefully consider them under the same model of industrialisation.

Sakaki and Japanese Industrial Organisation

The competitive success of Japanese manufacturing has long been a puzzle for Western academics, policy-makers and business people. Many different answers to this puzzle have been advanced. Chalmers Johnson, for example, claims that the Japanese state through the Ministry of International Trade and Industry (MITI) plays a crucial role in formulating and executing interventionist industry policies. He argues that the Japanese 'capitalist development state' has assisted in the formation of institutions such as the financial system, the industrial groups and conglomerates, the close relations between government and business, and the R&D cartels which encourage productive investment and have shaped the economic environment. It has also been suggested Japan was given a 'free ride' because post–World War Two the Japanese could not direct investment to the military, and gained access to new technologies through reverse-engineering and without incurring R&D costs. A further (and not unexpected) explanation is that Japan's industrial success is simply a product of market forces.

David Friedman in The Misunderstood Miracle offers an alternative explanation of the Japanese industrial success which challenges many of these conventional wisdoms.

144 For example see Dohse, K., Jurgens, U., Malsch, T. "From 'Fordism' to 'Toyotism'? The social organization of the labour process in the Japanese automobile industry". Politics and Society, Vol. 14, No. 2, 1985
Friedman's argues that the dynamism of Japan's small firm sector has played an unexpectedly large part in the resurgence of Japanese manufacturing. Friedman opposes the industrial dualism thesis which suggests that small firms are technically inferior, use cheap labour, are subject to cyclical shocks to the benefit of large firms, and are entirely subservient to large firms. Instead Friedman suggests that Japan has a vast number of innovative, flexible, high technology small manufacturing firms which are based on the principles of flexible specialisation. He argues that large Japanese firms were forced to decentralise production due to economic pressures, industry policies and labour market practices, and this gave rise to a dynamic small firm sector with a symbiotic relationship with the large firm sector. Friedman's study focuses on the role of small firms in the rapid growth of the Japanese machine tool industry, and the industrial district of Sakaki which produces general machinery.

Sakaki is a remote mountain village in Nagan Prefecture in central Japan with a population of 17,000 (1985). Sakaki comprises 365 firms with 7,069 employees, with small firms (less than 100 employees) comprising approximately 43% of all employees. The district produces general machinery including lathes, milling machines, electronic typewriters, injection molding machines and electronic measuring machinery. Evidence of the high level of technological sophistication of Sakaki is that the district has 0.02 per cent of the national population and 0.2 per cent of the national stock of NC machine tools. Furthermore Sakaki has the highest rate of introduction of NC machine tools in Japan!

Besides the small firms and technological sophistication, Friedman suggests that the

145 Friedman, D., op. cit., p. 127
146 Ibid., p. 217
147 Ibid., pp. 123-150
149 Sabel, C., "Flexible Specialisation and the Re-emergence of Regional Economies", op. cit., p. 23
150 Tekeuchi, A., and Mori, H., op. cit., p. 277
Third Italy and Sakaki share other factors in common. For example, many of the firms in Sakaki produce finished products and are not dependent sub-contractors for larger firms. Also firms in Sakaki are connected through family and village ties which enables forms of inter-firm collaboration similar to the Third Italy.

For Friedman the evidence of Sakaki, and the more general statistical picture of small manufacturing firms in Japan, leads him to conclude that the organisational flexibility and dynamism of the small firm sector, underpinned by a cultural and political system which fosters innovation and inter-firm collaboration, is a major element of Japan's industrial success. He argues that the state has been supportive of Japanese small business through a series of policies such as the 'Small and Medium Enterprise Modernization Promotion Law', and the 'Law on the Prevention of Delay Payments of Subcontractors Bill'.

However Friedman's account of Sakaki and the role of small manufacturing firms in the Japanese economy is contested on a number of grounds. Firstly, there is evidence that since the stabilisation of a high yen in 1985, small Japanese firms have faced new cost pressures. Increasingly this is forcing small firms to establish off-shore production in low-wage Asian countries or to find new overseas markets. This is a major change for Japanese small manufacturing firms, and many firms are finding it difficult to make the transition. Friedman ignores this process of restructuring of Japanese manufacturing.

Secondly, Friedman's rejection of the theory of industrial dualism is premature. There is stronger evidence of a continuing wage gap between small and large firms, and

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151 Takeuchi, A., "Policies for Small-Scale Industries in Japan", in Fung-shuen, V., (ed). Strategies for Small-Scale Industries Promotion in Asia
forms of exploitation in the Japanese small firm sector consistent with industrial dualism. For example, although wage levels have dramatically increased since the 1950's, the average wage for Japanese workers in small firms is still only 75% of their large firm counterparts. Friedman however suggests that these figures about wage gaps are misleading, because the career path for many workers in small firms is to become self-employed owner-operators who earn far more than waged workers in large firms. He therefore argues that over a lifetime the average incomes in small and large firms are very comparable. However Friedman's statistical picture is blind to the dualised labour market within the small firm sector. There is, as Friedman suggests, evidence of a labour aristocracy of male workers who become owner-operators. Yet there is also evidence of a peripheral labour market which never advances within the small firm sector comprising women, aged and minority workers. This peripheral labour market is consistent with the industrial dualism thesis.

"Small firms employ a large share of minority workers, notably Koreans and the Burakumin. Small firms also employ a disproportionate share of older workers, many of whom experienced forced retirement from large core firms; these older workers are also compelled to work at significantly lower pay than workers in core firms."  

There is also a strong gender division of labour between small and large firms. Women are predominantly employed in small firms and are paid substantially less than men, and do not generally become owner-operators in small firms. Also consistent with the industrial dualism thesis is that in Sakaki there is evidence in many factories of married couples having to work alternate 12 hour shifts! Examples of such exploitation suggest that the competitive advantage of the small firm sector does not completely rest on the principles of flexible specialisation.

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154 Friedman, D., op. cit., pp. 144-145  
156 Sayer, A., "Post-Fordism in Question", op. cit.  
157 Tekeuchi, A., and Mori, H., op. cit., p. 280
A third criticism of Friedman's account is that his work is not representative of all of Japanese manufacturing industry, and his results cannot be generalised. Firstly, his study focused on one industry sector – the machine tool industry. It is questionable how representative this industry is compared with other sectors, particularly the consumer goods sector. Secondly, Friedman's work identifies Sakaki which is a unique industrial district in Japan. There is no equivalent high technology rural based industrial district in Japan.¹⁵⁸

Fourthly, Friedman's analysis underestimates the role of large firms and flexible mass production.¹⁵⁹ Japanese manufacturing industry is highly vertically disintegrated, but highly organised. The diagram which follows indicates the hierarchical nature of the sub-contracting network. The central feature of Japanese industrial organisation is the tight linkages between levels of the sub-contracting network.

Within this tier system the top firms are responsible for R&D and prototype development. Then moving down the tiers, firms perform simpler tasks and have less autonomy. It should be noted that approximately sixty per cent of small and medium

¹⁵⁸ Ibid., p. 271
¹⁵⁹ Harrison, B, op. cit., pp. 26-27 Also see Michael Best, (a prominent supporter of the Third Italy model) who agrees that the Japanese story is based on large firms and an powerful central government. (Best, M., The New Competition, op. cit., p. 203)
sized enterprises in manufacturing are sub-contractors located within this tiered hierarchy. However Friedman, in rejecting a crude industrial dualism thesis, ignores the centrality of very large firms in the Japanese economy. As Glasmeier and Sugiura note;

"While small business remains a vibrant part of the Japanese economy, it is incorrect to assume that they are the engine of economic growth. Nor, however, should they be viewed as a drag."

In conclusion, it is evident that Friedman's work does capture a piece of the Japanese puzzle - small firms play a more significant role than is assumed by the industrial dualism thesis. However, Friedman's attempts to interpret Japan's industrial success within the flexible specialisation - industrial district framework also fails. Large firms, and the state continue to play a central role in the economy, and there remains substantial evidence of the vulnerability, dependency and exploitation of labour within the small firm sector.

Perhaps the most disturbing feature of Friedman's work is that it shifts attention away from evidence of the intensification of the labour process and the exploitation which characterises large sections of Japanese manufacturing. Indeed, while Friedman celebrates the role of small firms, the term 'karoshi' has crept into the Japanese language. 'Karoshi' refers to sudden death due to overwork, a condition arising from the longer working hours, compulsory overtime, and further intensification of the labour process.

161 Harrison, B, op. cit., p. 27
162 Glasmeier, A., and Sugiura, N., op. cit., p. 397
163 Joint Committee of Trade Unions Supporting Mr. Tanaka's Trial. Unfair Dismissal in the Hitachi Muasashi Plant, August 1989 An example of the weak position of labour in Japan is reflected in the case of Mr Tanaka. Mr Tanaka has sacked by Hitachi in 1967 for refusing to perform overtime on one occasion. Mr Tanaka challenged Hitachi's right to demand overtime be performed, and he sought to be re-instated in his job. In one of Japan's longest labour disputes, the High Court of Japan found in favour
Towards Corporate Decentralisation?

Beyond the much vaunted industrial districts, the flexible specialisation thesis also suggests that there is an emerging trend of transnational corporations decentralising functions and responsibility to branch plants.

"Headquarters therefore shrink dramatically, strategic planners go as senior managers regain control of planning. Many of the officers who oversaw the finances or purchases of operating units are eliminated, as final authority for most matters is pushed down to the units themselves. Central research facilities wither, cease to grow or are dismantled, as operating units build their own local laboratories and wholly new technologies are introduced into the corporation through joint ventures or participation in new firms." 164

Sabel refers to a process of 'double convergence' where the decentralised and autonomous units of transnational corporations are linked to networks of small firms in industrial districts. He argues that this pattern of corporate re-organisation has emerged as the result of the failure of corporate Taylorism (the separation of conception and execution between corporate headquarters and peripheral branch plants) to deal with the fragmentation of mass markets, and new forms of economic uncertainty. The world car strategy was seen as a last ditch attempt to extend the principles of corporate Taylorism and mass production to a truly international level – one standard car with components sourced globally from branch plants around the world. By contrast, it is argued that the emerging decentralised corporations are based on the principles of flexible specialisation and through a combination of inter-firm linkages, a skilled workforce and the local infrastructure, these decentralised transnational corporations are tightly integrated into the regional economy.

This aspect of the flexible specialisation thesis is a radical departure from the conventional view of transnational corporations, and therefore requires a detailed

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164 Sabel, C., "Flexible Specialisation and the Re-emergence of Regional Economies", op. cit., p. 33
empirical investigation. However, flexible specialisation theorists fail to offer any substantial empirical proof of these claims of corporate decentralisation. Sabel simply provides a small number of examples of large corporations which he claims have pursued the decentralisation path; corporations including Xerox, Montedison, Ford, Bosch, Black and Decker, General Motors, Kodak and the appliance division of General Electric.165 Yet in the absence of a 'criteria of dominance' (see earlier), and any significant empirical work, this hardly constitutes a strong case that transnational corporations are adopting flexible specialisation strategies. Sabel also is aware of this problem.

"These piecemeal changes are hardly proof of an inevitable rejection of mass production, but they are the best guide to the drift of current development."166

However a short list of a few transnational corporations is not a satisfactory 'guide to the drift of current developments'. Yet perhaps the idea of corporate decentralisation does warrant further attention in the industrial restructuring debate. There is in fact a growing body of management literature which explores the shifting distribution of tasks and control within transnational corporations. This literature suggests that a feature of corporate reorganisation is the maintenance of strategic control while decentralising certain functions to fully exploit localised sources of competitive advantage.167 However, such patterns of corporate reorganisation once again do not indicate a repudiation of mass production or a shift to flexible specialisation.

165 Ibid., pp. 36-38
166 Ibid., p. 38
An Assessment of the Empirical Evidence

An important limitation with the empirical base of the flexible specialisation thesis is that it is built on a selection of empirical case studies without a broader analysis of the divergent trends of capitalist industrial organisation. Sabel himself is acutely aware of this problem.

"A proverb has it that 'for example' is not a proof. A list of modern industrial districts much longer...would still not warrant general conclusions about the expansionary potential of the small-firm systems. Systematic efforts to assess the weight of such productive systems in the advanced economies are still in their infancy."168

However, unlike Sabel, in the absence of the more macro investigations based on cross-sectoral and international statistical indicators over a period of time, I remain most unconvinced by the empirical evidence assembled to support the claims of the flexible specialisation thesis about changing patterns of industrial organisation:

The truth of the Third Italy remains unclear. There is an array of evidence which suggests that part of the competitive success of the Third Italy derives from either super-exploitation, the black economy, or government subsidisation. Others suggest that the Third Italy is a transitional phenomenon. Supporters of the flexible specialisation thesis have not been able to dismiss these criticisms.

Furthermore, as has been demonstrated, the evidence overwhelmingly confirms that the economic, industrial, organisational, technical and social dynamics which underpin Silicon Valley and small firms in Japan are very different to the Third Italy. To attempt to compress these three forms of industrial organisation into the grand or totalising paradigm of flexible specialisation model is incredibly reductionist. Attempts to generalise the flexible specialisation framework beyond European craft-based industrial districts are most unsatisfactory. Finally, while Sabel's claims of

168 Sabel, C., op. cit., p.23
corporate decentralisation are interesting and worthy of further investigation, these claims remain inadequately proven.

Perhaps, a significant lesson that does emerge from the investigation of Japan and Italy is the potential scope for developing regional and local industry policies. However in Australia the dimension of regional policy has not been well connected with the inter-firm networking debate. This is a direction which must be pursued.

**FLEXIBLE SPECIALISATION AS A NORMATIVE – POLITICAL CLAIM – A CRITIQUE**

The third and final mode of understanding flexible specialisation is as a normative political claim— a set of political ideals or goals which are believed to be not too difficult to attain. In this manifestation, flexible specialisation is seen to offer a progressive and desirable alternative to an economy and social formation based on mass production. The normative political claim also suggests that flexible specialisation is politically realisable. Numerous theorists including Robin Murray, Michael Piore, Charles Sabel, Gary Herrigel, Paul Hirst, Jonathan Zeitlin, and John Mathews have constructed and used flexible specialisation in this way and argued that industrial districts and production networks potentially offer a more progressive form of capitalism, or even the basis for new forms of syndicalist socialism.¹⁶⁹ The work of such theorists has inspired trade unionists, policy-makers and regional activists in Massachusetts, New York, London, Melbourne and elsewhere to develop strategies and policies to create these forms of industrial organisation, and forge a piece of the

Third Italy within their local capitalist landscape. Explicit evidence of the influence of the flexible specialisation thesis informing the promotion of these production networks and industrial districts can be found in the work of the New York Garment Industry Development Corporation, Massachusetts Machine Program, Australian Manufacturing Council, Hatch's account of Jutland, the Greater London Council, and the Greater London Enterprise Board.170

There are two broad political projects which utilise the concept of flexible specialisation as a normative political claim argue for the promotion of industrial districts and production networks. The first of these positions can be described as labour reformism, and the other, yeoman democracy or associational socialism. The labour reformist stance is based on the assumption that industrial districts and networks formed around the principles of flexible specialisation offer a vehicle to reverse the declining of the manufacturing base of a local or even national economy, and therefore prevent further job losses and deterioration of living standards.171 This strategy largely seeks to offer a technical and organisational fix to the problems of capital accumulation, but also to undermine the underlying ideological and political rationality of neo-liberal capitalism. For instance, flexible specialisation and industrial districts demonstrate the role of non-market forces in shaping industrial competitiveness, and highlight that the state has an important role in the provision of public infrastructure and services to support inter-firm networks. 172 These arguments for a class compromise and some form of interventionist industry policy have a long history within the trade union movement and it is therefore not surprising

170 For example see the four programmes developed in the United States which results from trips to Emilia-Romagna. The programmes are metal-working in East Brooklyn, manufacturing and innovation networks in Pennsylvania, the Machine Action Program in Massachusetts, and the Michigan Modernisation Service (Burke, J., Networking, op. cit., pp. 27-32
172 For example see the work of John Mathews. As will be explored in Chapter Four, in the Australian context, the support for networks in some ways by passes the polemical 'picking-winners' debate because the state is supporting a group of firms, not simply targeting one. In a political climate following Victorian Economic Development Corporation (VEDC) and W.A. Inc. the difference is politically significant.
that these labour reformist arguments are articulated by trade unionists. 173 Yet achieving a model of industry development based on small firms also requires a shift in thinking by trade unions. Trade unions have long considered small firms as more exploitative of labour than their larger counterparts. Chapter Four provides a more detailed account of the labour reformist approach to production networks and industrial districts in Australia.

In some senses the policies of the PCI within the Third Italy could be described as labour reformist. As we have seen, regional and municipal Communist led administrations have been central in the support for industrial districts through upgrading public infrastructure, and encouraging a class compromise between local capital and labour in order to ensure the competitiveness of local industries against monopoly and foreign capital. 174 This strategy differs from the more radical localist approach (yeoman democracy or associational socialism) because there is a continuing role for the central state in regulating and shaping the economic and social environment, and capture of the central state remains a primary political goal.

Unlike labour reformism, the advocates of yeoman democracy or associational socialism argue that flexible specialisation provides the microeconomic foundation for a significant political shift to a system of co-operative capitalism or even the basis for a new form of socialism or syndicalism. They believe that flexible specialisation provides opportunities for greater local economic autonomy and control, and new forms of political representation. The foundation of these views is that the local micro-regulation of flexible specialisation and industrial districts which involves the production of co-operation, trust and support, facilitates the formation of a co-operative political culture and set of institutions. As Thompson notes;

173 For clear examples of this labour reformist strategy in the Australian context see the ACTU Industry Policy statement ACTU, Melbourne, August 1990, Unpublished and Burke, J. and Cox, I., "Italian Fashion", Australian Left Review, November 1990, pp.18-19
"An industrial district requires the development of relations of trust and mutual support between participating firms, not cut-throat competition. True, the 'market mechanism' still articulates these relations of cooperation, but it is a market mechanism that is highly constrained, regulated and ordered....the aim is to build a robust political and social consensus for the development of the local economy." 175

The political origins of these ideas of yeoman democracy and associational socialism lie in the mid-nineteenth century with the philosophy and action of Pierre-Joseph Proudhon and other mutualists and syndicalists in France, and of William Morris, G.D.H. Cole and the Guild Socialists in Britain. 176 These ideas were also promoted by Terrence Powderly, the leader of the American Knights of Labor, and Hermann Schulze-Delitzsch who established a bank to support German artisans. 177 Each of these individuals and movements were prominent in attempts to establish systems of co-operative artisan production in communities of independent craftspeople bound by a dependence on one another's skills. 178

Modern day supporters of yeoman democracy and associational socialism argue that the crisis of mass production, the failure of state socialism in Eastern Europe, and the inability of national Keynesian social democratic strategies to ensure economic stability and growth, make it both possible and desirable to resurrect this nineteenth century political vision. 179 It is argued that the fragmentation of mass markets and the declining importance of economies of scale undermine any inherent logic in the centralisation of production facilities. The re-emergence of flexible specialisation and small firm industrial districts re-opens the possibility of developing a political system based on a plurality of self-governing associations located within the local community (civil society). 180 This system, it is suggested, offers a decentralisation and

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177 Piore, M., and Sabel, C., *The Second Industrial Divide*, op. cit., p. 28
178 Sabel, C., and Zeitlin, J., *op. cit.*
179 In some senses the failure of the Soviet Union is seen by sections of the political Left as being due to be due to the failure of industrial giantism and Fordism.
180 Hirst attempts to distinguish his vision of associational socialism from syndicalism on the basis that
redistribution of economic power more evenly throughout the local or regional economy, and a democratisation of the political processes. It is even suggested that this system of production would be more responsive to concerns over the environment and ecology.

It should be noted that the categories of labour reformism and yeoman democracy are not necessarily mutually exclusive. The local industrial strategies of the Greater London Council and the Greater London Enterprise Board through the early and mid-eighties in some ways represented a blend of labour reformism and yeoman democracy. These policies were based explicitly on a strategy of flexible specialisation and inter-firm collaboration to enable local producers to compete against the ravagers of internationalised production and thereby reverse the patterns of urban industrial decline. Yet the policies and activities were more localist than the mainstream labour reformist perspective. However the GLC's view of small firm networks was also contradictory. The GLC retained a suspicion of small business, and there was considerable debate about the small firm flexible specialisation industrial strategies.


181 See Perrow, C., Small Firm Networks, Unpublished Paper, Yale University, November 1990 for an analytic argument that an economic system made up of many small organisations will have less wealth inequality than one with the same output made by a few large firms.

182 Mathews, J., "Towards New Models of Industry Development in Australia", Working Paper No. 78, School of Industrial Relations and Organizational Behaviour, The University of New South Wales, p. 17

183 Greater London Council, The London Industrial Strategy, 1985. The prominence of the ideas of flexible specialisation in the policies of the GLC are not that surprising given the position of Robin Murray in the Greater London Enterprise Board

The Many and Varied Criticisms of Flexible Specialisation as a Normative Political Claim

The promotion of flexible specialisation and industrial districts as a normative political claim can be criticised on two criteria. Firstly, the political goal can be criticised as being misdirected or insufficient. Secondly, the claim can be criticised because it is not readily achievable. What follows is a survey of some criticisms of this construction of the flexible specialisation. The bulk of the criticisms argue that the political projects informed by the flexible specialisation thesis do not offer enough. From a traditional socialist perspective, such political programmes have been challenged because it is not socialist enough in character. As Richard Walker argues:

"Presently, we are witnessing the revival of another long-stale debate over the relative power (and virtue) of large and small firms, rigid bureaucracies and flexible production networks. The affection for the petit bourgeois among many on the Left is alarming: small businesses are still capitalist enterprises, even if they have a more human face due to close association between workers and bosses. Nevertheless, small firms and flexible networks are not the appropriate solution to all production problems. And they neither eliminate the imperatives of capitalist accumulation nor solve the problem of democratic rule versus class prerogative in the workplace, the firm, the city or the nation as a whole. One has merely to observe the utter futility of working class organization in Silicon Valley today to be apprised of the secure class power of the entrepreneurial business class in a classic disintegrated production complex. We need a rather more capacious socialist agenda than this." 185

The prospect of small firm industrialisation is also seen to open up the possibility of new forms of exploitation of labour. The long-held view of social-democrats and many socialists was that increasing the centralisation of production enabled higher levels of unionisation and more opportunities for state control.

"Certainly much of the Left was not unhappy with this equation: large firms were seen as susceptible to union organisation, and to potential state control through planning agreements. For example, the concentration of manufacturing in large firms helps to overcome the fragmentation of workers characteristic of decentralised forms of production." 186

There was also a technicist view which associated large scale plants with modernisation. In a sense large plants were viewed as an element of the Fordist class compromise. Therefore the idea of support for small firm industrial districts would be seen to weaken the position of organised labour, and reduce the forms of working class solidarity.187

A further criticism of the flexible specialisation thesis as a normative political claim is that it focuses on capitalist production and manufacturing, and gives few insights into the industrial organisation of other sectors of the economy and even less recognition of areas of non–capitalist production.

"In its emphasis on capitalist production and the nation state, for example, post–Fordist theory necessarily marginalizes non–capitalist production (such as that taking place in the household) and other political arenas and governance structures." 188

From its political and analytical focus, Graham concludes that post–Fordist theories, including flexible specialisation, give a wealth of insights into capitalist accumulation and manufacturing, but offer little knowledge of exploitation and class.189 Also as Pollert argues, "women are invisible in the flexible specialisation project as it is a purely manufacturing model."190

In addition to the points above, further criticisms have been directed at the localist political agendas of yeoman democracy and associational socialism. Firstly, yeoman democracy and associational socialism are criticised on the grounds that they are based on a romantic and workerist vision of the nineteenth century.

188 Graham, J., "The Politics of Post-Fordism: The Political Consequences of Narratives on the Left". op. cit., p.16
189 Ibid., p.15
190 Pollert, A., "The Orthodoxy of Flexibility", op. cit., p. 22
"Hints that women may not do very well under flexible specialisation begin to niggle at feminists while reading Piore and Sabel's fond references to Proudhon...embedded at the of his understanding of independent, craft based working class – which he celebrated – was the belief that women should only work in the home and that any self-respecting working man ought to be able to support his non-waged wife and children." 191

Secondly, claims for yeoman democracy or associative socialism are criticised because they are seen to represent an attempt to forge a 'designer socialism' or 'yuppie socialism' for the affluent intelligentsia consuming niche quality products manufactured along the lines of flexible specialisation. 192 The social benefits of mass consumption and the ideals of universality and equality are discarded. Even Michael Piore recognises these dangers connected with flexible specialisation.

"(M)ass production, because of its need for constantly expanding markets, creates an interest of each in the prosperity of all, in that sense, it is more catholic and universal. Flexible specialisation admits a narrow parochialism which I personally find as disturbing as the alienation of work in mass production." 193

Thirdly, the localist political agenda is challenged on the grounds that it fails to comprehend the need for national government interventions around issues of public ownership, provision of services, and environment and occupational health and safety regulation. There is a continued role for the central state in areas of infrastructure development and financial regulation, and this is negated by the nature of the localism of much of the flexible specialisation thesis. 194 A particular need for national regulation relates to the relationships between industrial districts and regions. The consensus and mix of collaboration and competition developed within an industrial district is not necessarily paralleled between districts where fierce unregulated competition may occur. 195 The nation state can play an important role regulating the forms of competition between industrial districts.

191 Jenson quoted in Pollert, A., "Dismantling Flexibility", op. cit., p. 69
194 Costello, N., Michie, J., and Milne, S., Beyond the Casino Economy - Planning for the 1990s, Verso, London, 1989, p. 31
Most of these criticisms above are important and valid, however the localist and anarcho-syndicalist flavour of the visions of yeoman democracy and associational socialism still have some appeal.. Particularly, during a period when statist forms of socialism, and social democracy are in retreat. Moreover, the work of Hirst raises important questions about forms of democracy, civil society, and pluralist socialism. However with this said, I am not persuaded by these localist political claims. Firstly, the positions of yeoman democracy and associational socialism misinterpret the current global economy and are too difficult to obtain.

"In the late 20th century, the local economy can only be seen as a node within a global economic network; and it can have no meaningful existence outside this context. If we consider that this global arena is shaped and informed by formidable relations of power, then the scope for local autonomy and proactivity becomes considerably narrow."196

There is not sufficient political and economic space to establish these systems in the current geo-political and economic environment. These localist projects underestimate the role of war and militarism in shaping the political economy of nations and the end of the cold war does not mean the end of either war or militarism.

Secondly, small is not always beautiful, and what is being offered remains a romantic, workerist and manufacturing centred political project. This is not enough to warrant giving up more traditional socialist or social democratic strategies. There is also the continuing need for national institutions and forms of regulation which is undermined by both yeoman democracy and associational socialist projects.

In short, yeoman democracy and associational socialism offers too little and are politically too difficult to realise. Yet the broader idea of pluralist socialism without the localism, nineteenth century romanticism, and manufacturing centred view

196 Amin, A, and Robins, K., "The re-emergence of regional economies? The mythical geography of flexible accumulation", op. cit., p. 28
deserves serious consideration.

CONCLUSION

This chapter has provided a detailed investigation of the flexible specialisation thesis as a ideal type, an empirical phenomenon, and as a normative political claim. The general conclusion of this investigation is that all three modes of constructing the concept of flexible specialisation are severely limited in their theoretical, empirical and political utility.

Flexible specialisation as ideal-type does not provide a particularly useful way of understanding the changing nature of capitalist industrial organisation. The ideal-type is constructed on an overburdened dualism – flexible specialisation and mass production. The concept of flexibility is never deconstructed to enable it to be used in a discriminatory fashion, and it is not very revealing to consider production systems as either flexible specialisation or mass production.

This chapter also considered the flexible specialisation as empirical phenomenon. The main focus here was investigating the 'industrial districts' of Emilia-Romagna (the Third Italy), Sakaki, and Silicon Valley. It was concluded that these three regions or localities were based on substantially different principles. It is unacceptable to suggest that these different production systems are all examples of the flexible specialisation thesis. Furthermore the Third Italy is better understood as a neo-Marshallian district than a product of the forces of flexible specialisation. The flexible specialisation thesis shares much in common with Marshall's explanation of industrial districts. However Marshall did not package his work in a totalising and binary theoretical framework, instead he did engage in sustained empirical and historical analysis. The empirical work of the Italian industrial economists, Bagnasco, Brusco, Becattini, and Trigilia comes closer to Marshall's approach.
This chapter also considered flexible specialisation as a normative political claim. Several political projects have been in part derived from this notion of flexible specialisation including yeoman democracy, associational socialism and labour reformism. This chapter highlighted numerous criticisms of these different political projects, and concluded that both the yeoman democracy and associational socialism positions are unachievable, and not necessarily that attractive. For these reasons, it was suggested that as a normative political claim the flexible specialisation thesis is not that convincing or helpful.
CHAPTER 3

SCOTT, TRANSACTION-COST ECONOMICS AND FLEXIBLE ACCUMULATION – THE QUESTIONABLE LOGIC OF THE NEW INDUSTRIAL SPACES

Networks: "(N)either fish nor fowl, nor mongrel hybrid, but distinctly different forms." 1

INTRODUCTION

Besides the flexible specialisation thesis, the other main post-Fordist account of changing patterns of industrial and spatial organisation is offered by Allen Scott. Scott develops an explanation of the formation of industrial complexes and districts which is based on a synthesis of the flexible accumulation theory (a crude version the French Regulation School) and transaction-cost economics.2 He constructs a general framework of the processes of vertical (dis)integration and spatial (dis)agglomeration of firms and argues that within the contemporary (post-Fordist) environment, economic forces are promoting both vertical disintegration and spatial agglomeration. In other words, like Piore and Sabel, Scott suggests that a central feature of the regime of flexible accumulation is the existence of organisationally linked, specialised firms, forming industrial complexes or spatially agglomerated industrial spaces'.3 Scott's geography of flexible accumulation is characterised by three types of industrial ensembles: artisanal and design intensive spaces such as

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2 Amin, A., and Robins, K., ("The Re-Emergence of Regional Economies? The Mythical Geography of Flexible Accumulation", Environment and Planning D: Society and Space, 1990, Vol. 8) develop typology that groups the work of Storper and Scott and contrasts it with Piore and Sabel. I disagree with grouping the work of Storper and Scott, because the theoretical justification for this approach rests on Scott's work and Storper's own work is less economistic than Scott. For example see, Storper, M., "The Transition to Flexible Specialisation in the US Film Industry: external Economics, the division of Labour, and the crossing of industrial divides". Cambridge Journal of Economics, Vol. 13, 1989
3 Scott, A., New Industrial Spaces, Pion, London, 1988
the Third Italy producing predominantly consumer goods, high-technology sectors, such as Silicon Valley, and service complexes located in cities. To illustrate these industrial ensembles he draws heavily on the empirical work popularised by the flexible specialisation thesis, and already detailed in Chapter Two.

The aim of this chapter is to trace out Scott's explanation of the formation of industrial spaces and complexes, and then to deconstruct his argument to reveal assumptions which are highly questionable. This is not to deny the existence of the industrial complexes and districts, rather it is to argue that Scott's analysis of the origins of their formation and existence is insufficient.

The chapter commences with a brief outline of Scott's work through the eighties and demonstrates his long-held commitment to develop a conceptual framework of the capitalist space economy that integrates space with traditional categories of political economy; the division of labour, industrial organisation and technology. Following this sketch, a detailed description and critique of transaction-cost economics is developed. Transaction-cost economics provides the foundation of Scott's framework and is an increasingly influential approach to investigating the changing patterns of capitalist industrial organisation among economists. The chapter then examines Scott's synthesis of transaction-cost economics and the theory of flexible accumulation. Scott argues that the decline of Fordism and the emergence of post-Fordism promotes both vertical disintegration and spatial agglomeration giving rise to the new industrial spaces. The chapter concludes with a review of the debate between Allen Scott and John Lovering about Scott's explanation of the new industrial spaces.

5 There is also evidence of the transaction-cost approach in the Australian inter-firm networking debate. Therefore the critique developed in the chapter is also relevant to elements of the Australian debate reviewed in Chapter Four.
Scott's basic framework of industrial organisation is developed in a variety of publications through the early to mid-eighties.6 This work was followed up by empirical research examining the spatial and industrial organisation of the Printed Circuit Board (PCB) and women's fashion industries in and around Los Angeles.7 Other collaborative work with Henderson 8 and Angel 9 extended this framework to explore industrial organisation and the division of labour at an international level within the semi-conductor industry.

Another important branch of Scott's work has been to explain emerging patterns of urbanism, local labour markets and political cultures in relation to the nature of commodity production within capitalist society.10 Finally, the most recent direction of Scott's work has been to integrate his general framework of industrial and spatial organisation of commodity production with the idea of regimes of flexible accumulation.11 A critique of this theoretical synthesis is a major focus of this chapter.

10 For example see Scott, A., Metropolis- From the Division of Labour to Urban Form, University of California Press, California, 1988 and Scott, A., "Location Processes, Urbanisation and Territorial Development: an explanatory essay", Environment and Planning A. Vol. 17. 1985
11 Scott, A., New Industrial Spaces, op. cit. and Scott, A., Flexible production systems and regional development, op. cit.
This brief glance at Scott's work demonstrates his consistent attempts to develop an overarching theory of the economic geography of capitalist society. It is an ambitious project which bears some fruit. His work represents a serious challenge to the dominance of neo-classical locational analysis, and it also provides an intellectual challenge for social theorists and Marxists to recognise space as a fundamental category of political economy.

Following this sketch of Scott's intellectual past, we can now turn to exploring the substance of his arguments. The starting point of this review is the central element of all of his work, his theory of industrial organisation. This is followed by a close look at Scott's attempts to link explanations of industrial organisation to the concept of the regime of flexible accumulation, and the alleged logic of the new industrial spaces.

**SCOTT, INDUSTRIAL ORGANISATION AND TRANSACTION-COST ECONOMICS**

Scott's theory of industrial organisation is an attempt to develop a generalised model of factors which influence the expansion and contraction of the boundaries of the firm. This includes an analysis of why some parts of the labour process are internalised within the firm and governed by managerial authority (governance structure), while other parts are externalised and subjected to market based forms of exchange. Additionally, Scott's framework attempts to explain why certain industries are characterised by a mix of small and large firms, and the types of spatial arrangements that accompany (and influence) industrial structure. Answers to such questions are central to developing an understanding of capitalist restructuring and the emerging forms of industrial and spatial organisation.

The primary elements of Scott's theory of industrial organisation are derived from
transaction-cost economics. Transaction-cost economics has emerged through the
eighties as an influential approach in the discipline of economics to explain the
patterns of vertical integration and disintegration of a firm. The origins of this
approach can be found in a seminal paper by Roland Coase The Nature of the
Firm.12 Coase conceptualises the firm and market as two contrasting and
competing mechanisms for organising economic activity. Transactions become the
fundamental unit of microeconomic analysis. Transactions through markets
between parties are subjected to the price mechanism, whereas within the firm,
internal transactions between elements of the production process are governed by
managerial authority or fiat. Coase argues that the choice as to whether a
transaction is organised internally (hierarchy) or externally (market) is determined
by a criterion of cost minimisation. The firm, according to Coase, is a vessel for
minimising transaction costs. As the now famous quote of Coase says—

"a firm will tend to expand until the costs of organising an extra transaction
within the firm become equal to the costs of carrying out the same
transaction by means of exchange on the open market or the costs of
organising in another firm." 13

This work by Roland Coase lay dormant for some forty years, until Oliver
Williamson resurrected the approach, and began what has become known as the
'markets and hierarchies' research program or new institutional economics. Like
Coase, Williamson's work is based on the dual assumptions that markets and firms
are the two alternative mechanisms for organising economic activity, and economic
efficiency (cost minimisation) is the determinant of the size and scope of a firm.
From these shared foundations, Williamson and his followers have sought to

12 Coase, R., "The Nature of the Firm", Economica, 1937 Interestingly Roland Coase was awarded
the 1991 Nobel prize in economic science at the age of 81. This is noteworthy because Coase's prize
derives from only two papers; the first "The Theory of the Firm", and the second, "The Problem of
Social Cost" was published in 1960. Neither of which were mathematical. The long gap between the
awarding of the Nobel prize, and the publishing date of the papers possibly demonstrates a growing
interest in industrial organisation, and relationship between markets and firms. (Australian
Financial Review, October 17, 1991)
operationalise and further develop Coase's initial insights, and in doing so have established transaction-cost economics as a significant branch of applied microeconomics. Williamson's contribution to the growth of this field has been the most influential and deserves some further elaboration.

Williamson's work has sought to identify factors that shape the external transaction costs associated with market based exchange. He has identified three primary factors which shape whether activities are conducted by market exchange or within the firm. These factors are the level of uncertainty in external transactions, the frequency with which external transactions recur, and the degree to which transaction-specific investments are incurred (asset specificity). Put more simply, Williamson argues that high costs of organising market exchange (relative to internalisation or hierarchy) are incurred where external transactions are uncertain, recur frequently, or involve substantial investment in assets that cannot be readily transferred. The last of these, asset specificity, considered the most significant, relates to market failure that arises from investment in assets that are specific to a deal, such as specialised process or products. The approach that argues in these cases where the costs of market exchange are high, vertical integration is likely to occur. Alternatively, market exchange will predominate where external transactions are simple, infrequent, and require no asset specific investment.

The further step in Williamson's work is to identify the human and environmental factors that produced transactional difficulties. He states;

"The markets and hierarchies approach attempts to identify a set of environmental factors which together with a set of human factors explain the circumstances under which complex contingent claims contracts will be costly to write, execute and enforce. Faced with such difficulties, and considering the risks that simple (or incomplete) contingent claims pose, the firm may decide to by-pass the market and resort to hierarchical modes of

organisation." 15

The approach assumes that the behaviour of economic actors has bounded rationality (limited knowledge of contractual contingencies), and that individuals are self-interested and opportunistic. Hierarchy reduces the effects of both bounded rationality and opportunism, because contracts do not need to be written within the firm, and managerial authority mitigates the 'human condition' of opportunism. Other difficulties arise for market based exchange where monopoly conditions are present, such as when the number of transaction parties is small, and there is an asymmetry of information between firms. Williamson also argues that 'atmosphere' can alter the structure and difficulty of transactions. Atmosphere relates to attitudinal factors of economic actors. 16

This snapshot of the theoretical underpinnings of transaction-cost economics does not do justice to the breadth to the field nor acknowledge more recent contributions. Subsequent work by Williamson and other researchers has further developed transaction-cost economics through refining the basic theoretical concepts, and engaging in detailed empirical research. However, the preceding description of transaction-cost economics is the starting point for the work of Allen Scott.

Scott's theory of industrial organisation, while largely based on transaction-cost analysis, extends the approach in four ways. Firstly, Scott develops a formal graphical representation of the transaction-cost approach to identify conditions

16 Williamson, O., Markets and Hierarchies: Analysis and Antitrust Implications, op. cit., pp. 20-40. Williamson's notion to atmosphere will be criticised later, because it fails to recognise that economic action is embedded in social structures.
under which vertical integration and disintegration occur. Secondly, Scott framework integrates space into the approach as a distinct form of transaction-cost. Thirdly, Scott combines the transaction-cost approach with Stigler's argument about the role of economies of scale in the determination of vertical integration. Fourthly, Scott attempts to put the politics of the labour process into the discussion as a factor that shapes industrial organisation. He has limited success in the last of these respects. The following summary of Scott's framework draws out these contributions.

**SCOTT'S FRAMEWORK OF INDUSTRIAL ORGANISATION**

Scott's graphically framework is an excessively formal construct that does little to extend Coase's original insights. However given the centrality to this argument to the thesis I brief account is offered here.

In illustrating Scott's theory of industrial organisation it is useful to consider an example of two production activities that may be performed under conditions of vertical integration or disintegration, say spinning and weaving, where spinning is upstream of weaving in input–output terms. The question that Scott's theory of industrial organisation endeavours to answer is under what conditions will these two processes be vertically integrated or disintegrated, and spatially agglomerated and dispersed. What follows is a summary of Scott's formal graphical answer derived from Allen Scott, "Industrial Organisation and Location: Division of Labor, the Firm and Spatial Process".  

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Let $g(x)=$ Average cost function of $x$ (spinning) under conditions of vertical disintegration

Let $h(y)=$ Average cost function of $y$ (weaving) under conditions of vertical disintegration

The following graphs indicate the functions $g(x)$ and $h(y)$. Economies of scale are present wherever an increase in $x$ leads to decrease in $g(x)$. The same holds true for $y$ and $h(y)$.

Now assuming that $x$ and $y$ are produced in equal proportions it follows that the average cost of producing cloth under conditions of vertical disintegration is $g(x) + h(y) + t$, where $t$ is some transaction cost, including the transport of $x$ to the site where $y$ is produced, and other costs associated with the transaction, such as tax.

Assume that the cost functions for spinning and weaving are separable and additive, that the amounts of product of $x$ and $y$ are produced in balanced proportions. (See
Where spinning and weaving are vertically integrated, let \( c(x,y) \) = Average cost of producing \( y \) and \( x \) under conditions of vertical integration.

Therefore \( s(x,y) = c(x,y) - g(x) - h(y) \) as a measures economies or diseconomies of scope per unit \( y \).

From transaction-cost analysis assumptions where \( s(x,y) < 0 \) there are internal economies of scope, and production under conditions of vertical integration will be more cost efficient. Conversely, where \( s(x,y) > 0 \), internal diseconomies of scope exist. This situation will encourage vertical disintegration.

Figure A indicates a case where \( c(x, y) \) represents vertical integration and spatial agglomeration.

Figure B indicates the case where production occurs under conditions of vertical integration, but spatial disagglomeration. This represents the case of a multiestablishment plant, that is spatially dispersed. In this situation \( t = \) the cost of transferring \( x \) from where it is produced to where \( y \) is produced. This includes the costs of physically moving \( x \), but also other costs associated with transfer. The cost of this form of production then, is \( g(x) + h(y) + t \).

Figure C indicates conditions of vertical and spatial disintegration. In this case \( x \) is sold at market price \( P \) and transferred at cost \( t \) to where \( y \) is produced. The cost of this form of production is \( P + t + h(y) \).
From the graphs it is evident that in this example full disintegration achieves cost minimisation since $\text{Min}[ P + t + h(y)] < \text{Min} [g(x) + t+ h(y) + s(x, y)] < \text{Min} [c(x,y)]$

Therefore Scott's theory of industrial organisation would expect weaving and spinning would be separated under these conditions.

To the framework above, Scott adds some additional insights from the work of Stigler. Where the transaction-cost approach concentrates on the role of economies of scope in shaping industrial organisation, Stigler focuses on the role of economies of scale. Based on Adam Smith's dictum, 'the division of labour to the extent of the market', Stigler argues as markets increase in size, vertical disintegration tends to take place. 19. In Scott's New Industrial Spaces, a framework of industrial organisation is developed that combines Stigler's perspective with the transaction-cost economics. However for our purposes here, it is sufficient to note that Scott recognises the role of economies of scale, as well as economies of scope and transaction-cost in shaping firm and market boundaries.

New Technologies and Vertical Disintegration from a Transaction-Cost Economics Perspective

The framework developed above provides a useful opportunity to explore how flexible production systems and information technologies might alter the boundaries of the firm. In much of the post-Fordist literature there is an assumption that new production technologies and information systems are promoting vertical disintegration. Based on the theory of industrial organisation outlined above it is possible to assess this claim by post-Fordist theorists. This enables both a demonstration of the practical application of the transaction-cost approach, and an opportunity to assess whether the approach supports the view of many post-Fordists. So accepting temporarily the validity of the transaction-cost approach, let us explore how emerging technologies might alter the patterns of industrial organisation.

A central tenet of post-Fordist arguments is that new computer-controlled production technologies give small firms a flexibility to produce a wider range of products. These economies of scope derived from CAD/CAM and other flexible technologies enable competition with larger producers in areas of small batch production. It is argued that through investing in this reprogrammable and non-dedicated equipment, fixed capital promotes vertical disintegration. Furthermore, "the enhanced abilities of the(se) well equipped smaller enterprise(s) to deliver quality products to tight schedules with flexibility offers, for example, scope for outsourcing, (read vertical disintegration)." The proliferation of sub-contracting in the automobile industry and the down-sizing of automobile assemblers is drawn on by the post-Fordist theorists as evidence that flexible production technologies

20 For example see Gertler, M., "The Limits to Flexibility: comments on the Post-Fordist vision of production and its geography", Transactions of the Institute of British Geographers. N.S. Vol. 13, 1988
enables decentralisation and disintegration.  

According to the transaction–cost approach, there are , however, a variety of situations whereby technology can, in other instances, enhance internal economies of scope through new technological interdependencies and co–ordinative economies, and can promote vertical integration. The classic example of technical interdependencies is the case of iron and steel production where thermal economies promote the integration of the two processes. Indeed the much vaunted Computer Integrated Manufacture (CIM) strategy is based on a manufacturing philosophy of integration of different tasks of production that exploits these technical interdependencies and co–ordinative economies. Similarly, Flexible Manufacturing Systems (FMS), Design for Manufacture (DFM) and MRPII (Manufacturing Resource Planning) all place integration at a premium.

For example, flexible manufacturing systems (FMS) involve the re–integration of once separate activities on the basis of technical interdependencies. FMS derive economies from tight automated linkages between machining, transfer, design, and other tasks. This phenomenon has been described by Robinson in 1931;

"the division of labour is being reversed; one huge machine can be designed to take over what has hitherto been done by a series of manual, or less completely manual operations."

This identification and recognition of these technological interdependencies in the computerised manufacturing environment are important to curb the excessive claims of some theorists who suggest that flexible technologies are driving vertical disintegration. However, the examples also highlight a deficiency with the

22 Gertler, M., op. cit.
23 Williamson, O., Markets and Hierarchies: Analysis and Antitrust Implications, op. cit. p. 83
24 Gertler, M., op. cit.
transaction-cost approach. The transaction-cost approach assumes that integration equates with hierarchy, and disintegration equates with market exchange. As will be demonstrated later in this chapter, network organisational forms can facilitate integration of production processes without being based on vertical integration.

The Italian industrial economist, Antonelli, has applied a similar analysis to that developed above, to assess the possible effects of telematics (information technology) on reshaping the boundaries of the firm. Simply put, Antonelli argues that information technology alters the internal economies of scope and scale through improving internal co-ordination of production, while simultaneously reducing the cost of external transactions.

"Telematics appear to have a strong parallel effect reducing both co-ordination and transaction costs and consequently on the boundaries between firms and hierarchies." 26

Antonelli therefore suggests that the relative cost of market transactions to co-ordination costs will determine firm size. If with telematics, co-ordination costs are reduced relative to market transaction costs then firm size will tend to increase and vice versa. This conclusion is consistent with examples of flexible production explored above.

This brief exploration via the transaction-cost approach of a variety of ways in which technology may reshape the boundaries between firms, suggests that there is a level of indeterminacy, and that there are contradictory elements in the (dis)integrative potentials of these technologies exist. The transaction-cost approach suggests that there is no simple technological imperative to disintegration or integration, and that an actual outcome is dependent on measuring the internal economies of scope and scale derived from technical non-separabilities balanced

against reduced transaction-cost in specific instances.

A CRITIQUE OF TRANSACTION-COST ECONOMICS

As the preceding examples demonstrate, transaction-cost economics offers some useful insights into understanding the forces that shape industrial organisation. However, as has been suggested the approach is flawed. Criticisms of the transaction-cost approach are numerous, but this chapter concentrates on just four areas. Each of these criticisms derives from the absence of non-market and non-cost determined relations in the calculus of transaction-cost economics. These areas of criticism are firstly, that the transaction-cost school presents a simple efficiency based argument that is based on an undersocialised conception of economic action. Secondly, the approach falsely dichotomises markets and firms as separate and competing mechanisms. Thirdly, technical and social interdependencies between production tasks are not analytically recognised, and fourthly, 'cost minimisation' is a conflated and loose category that is difficult to calculate, and is invoked to explain all manner of outcomes. Each of these criticisms deserve further elaboration.

The Limits of Efficiency Based Arguments

The method shared by Coase, Williamson and Scott is based on the assumptions that capitalist industrial organisation is determined primarily, if not exclusively, by the goal of minimising cost, not profit maximisation. It is alleged that relative economic efficiencies determine whether a firm will internalise an activity or subject it to market based forms of exchange. This is an essentialist explanation which provides only part of the story—economic actors are located in cultures, institutions and grids of power. Specific forms of industrial organisation may be shaped by these non-economic factors, rather than some notion of cost
minimisation. To illustrate this point I have assembled three different tales of industrial organisation. Each example in a different way illustrates that specific forms of industrial organisation cannot be reduced to an economistic criteria of 'transaction cost minimisation'. The first of these is recalled in some length because it is an entertaining post-modern history of the system of bread production in France.

The organisation of French bread production is significantly different in structure to the bread production in the Western world. Bread production in the UK, USA and elsewhere is characterised by mergers, conglomerates, vertical integration, and standardisation, (and cellophane wrapping). This is described by Clegg as 'industrial bread', and constitutes the vast majority of bread in the Western world. In France on the other hand, industrial bread comprises only 10% of the market.27 The remainder of bread production is what is described as artisanal bread. Artisanal bread is not a 'heavily marketed, brand identified, size invariant, shrink-wrapped and sliced product sold identically in virtually similar supermarket chains throughout the country.'28 Artisanal bread is the exemplar of flexible specialisation production— a highly differentiated, quality product, produced by husband and wife teams in decentralised bakeries across France.29 Why has artisanal bread production persisted, and why has it not been subjected to the rational calculus of the transaction-cost economics of Anglo-Saxon breads? A simple explanation based on consumer tastes or French culture is insufficient, as other branches of food production in France have become industrial goods.

'No doubt, the French used to like good wines, good poultry, good cheese and that did not prevent all these foods from becoming food products, industrialized, standardized, homogenized; dead things.' 30

27 Clegg, S., Organisations, Modernity and Postmodernity: Comparative Perspectives on Organisational Studies, Sage, Los Angeles, 1990, p. 74
28 Ibid., p. 74
29 Ibid., p. 74-75
30 Bertaux, and Bertaux-Wiane, p.158, quoted in Clegg, S. op. cit.
Clegg's explanation of the structure of the bread industry draws on the tradition and baking practices within the French peasantry. Well into the early twentieth century being a baker has provided the peasantry an opportunity to transcend their class position and emerge as members of the petty bourgeois. The strong individualist culture surrounding this tradition explains the fierce resistance of bakers today to industrial bread producers. This is not to suggest that efficiencies and transaction-costs are not considerations. Rather, the structure of the industry is not solely determined by these factors. A organisation of a French bakery, and the small flour mills that supply the bakers are based on pre-capitalist or non-capitalist relations of production that can not be comprehended or accounted for by a transaction-cost approach. The resistance of the artisanal form of production to the industrial capital is based on a variety of resources that reside in French culture and institutions.

Clegg provides the second tale of the limitations of the transaction-cost approach. This is a story about the dominant mode of Taiwanese industries based around family businesses. "Irrational and inefficient transactions abound in Taiwan... If one were to follow Williamson, one would predict, given these inefficient transactions conditions, that there should be a clear tendency towards the emergence of vertical integration, particularly on the part of the larger family firms. Hamilton and Biggart can find no evidence that this concentration is occurring." Clegg argues that Taiwanese family businesses typically diversify, not through vertical integration, but setting up separate and unrelated firms.

A third example that is frequently cited against the transaction-cost approach is derived from the history of the Industrial Revolution. The factory based system of

31 Ibid., pp. 76-80
32 Ibid., p. 89
production was not initially, at least, developed for reasons of technical and economic efficiency, but as a means of achieving further control and discipline of the labour force. The expanding markets in the colonies could not be adequately supplied by the labour of semi-self-sufficient outworkers who could not be easily subjected to the capitalist discipline and authority. The ensuing political struggle between early industrial capitalists and outworkers cannot be reduced to the criteria of cost minimisation as the arguments of Coase, Williamson and Scott et al. would suggest.

All the preceding examples argue against the economic logic of the transaction-cost approach. Each example demonstrates that simple essentialist economic efficiency or transaction-cost minimisation arguments do not capture the diversity of influences on industrial structures.

The possible retorts to these criticisms by the transaction-cost economists are two-fold. Firstly, it could be argued that Williamson does recognise the role of human and environmental factors as 'atmosphere' in shaping transaction-cost. Secondly, it may be advanced that transaction costs are the 'determinant in the last instance'. Neither of these positions are acceptable. The first is rejected because Williamson's idea of 'atmosphere' is only understood as the how individual attitudes shape economic outcomes. The notion does not adequately capture the idea that economic actors are located in social structures. 34

In addition the economism of the transaction-cost approach could be defended on the basis of 'determination in the last instance'. While this explanation maybe attractive, it is unsatisfactory because transaction-cost economics, like crude Marxism, reduces political and cultural processes to the economic ones, and

consequently it does not provide a full or adequate account of the organisation of capitalist production.

This underlining economism is mainly due to the attachment between transaction-cost economics and neo-classical economics. This is ironic because the transaction-cost approach allegedly evolved as an alternative to neo-classical economics. Its supporters sought to develop a mode of analysis beyond atomised production functions. However, the transaction-cost approach has not freed itself of several assumptions of neo-classical economics. Both approaches share an ideological image of 'rational economic man' who is an atomised individual, divorced from social structures, and driven by opportunism and the ideal of economic efficiency. The naivety of these images of 'economic man' has been repeatedly demonstrated, but as the idealisation of liberal capitalism, 'economic man' is propped up and resurrected to legitimate economic and political interests. My intention here is not to attempt yet another critique of this most dismal science, but rather to note two specific criticisms of the transaction-cost approach which derive from neo-classical economics.

Transaction-cost economics is based on a behaviouralist assumptions that individual economic actors will act in an opportunistic and self-interested manner. This assumption is dubious as it negates the role of institutions and social settings shaping human behaviour.35 Equally erroneous are assumptions of the naturalism of markets that pervade the approach. "The market is not a state of nature, as Williamson implies, but a social institution."36 This is further evidence of the failure of transaction-cost economics to recognise the political and institutional context.

A further failure shared by both neo-classical and transaction-cost economics is the implicitly functionalist assumption that efficiency determines existence. In other words both approaches assume that emerging or existing forms of industrial organisation are the most efficient, as their existence is driven by rational costs calculus. The tale of French bread proves that the link between efficiency and existence is far from inevitable. "Inefficient structures do happen to exist; and many possible efficient structures will never actually emerge." This criticism is particularly important in assessing the 'logic' of the new industrial spaces.

Stewart Clegg and Mark Granovetter indicate some useful directions to overcome these limitations with the transaction-cost approach. Granovetter develops the concept of embeddedness to explain that firms and markets are entrenched in social and political relations. With this concept Granovetter manages to avoid the traps of an undersocialised or oversocialised account of economic action. The notion of embeddedness gives a significance and centrality to non-economic factors in shaping industrial organisation, whilst not negating the role of economic factors.

Clegg extends this critique of the transaction-cost method to argue against overarching explanations or meta-narratives of organisational structures in general. These explanations are rejected by Clegg as modernist attempts to impose a single universal mode of rationality on organisations. The transaction-cost, for example, is based on a rationality of efficiency, specifically cost minimisation. Cost minimisation does not guarantee the survival or dominance of one system of industrial organisation over another. The examples previously cited of French bread, Taiwanese family businesses and the Industrial Revolution demonstrate that there is not a sole or exclusive mode of rationality. In moving beyond such

38 Hodgson, G., op. cit., p. 214
treatments of organisations, Clegg proposes a more post-modern approach that recognises the "diverse forms of calculation and modes of rationalities" that are exercised within, and shape, specific organisations. The focus of Clegg's work is not to identify a global or totalising agent of organisational change, but rather to explore in detail the diversity of local terrains and resources that alter organisational forms. However, while recognising the worth and richness of this post-modern approach, this position also has significant weaknesses. This point will be taken up later in considering Scott's response to his critics.

While the criticism that the transaction-cost economics provides an essentialist and economistic account of industrial organisation is significant, it is not the sole failing of the approach. As outlined above, three other criticisms are consistently directed at the transaction-cost approach.

**The Market – Hierarchy Dichotomy**

Several authors have pointed to the fact that the transaction-cost approach, falsely dichotomises the market and hierarchy as opposite and competing methods of organising transactions. Insufficient consideration is given to other forms of industrial organisation, such as strategic alliances or joint ventures. Where passing reference is made to these organisational structures, they are reduced to a simple blend of x per cent market and (100-x) per cent hierarchy. It is as if the firm and the market are ascribed a naturalism to which all organisational forms can be reduced. This account is inadequate because the diversity of organisational forms cannot be understood as a combination of two poles. As the OECD

39 Clegg, S., op. cit., p. 109
42 It is encouraging to note that Williamson has recognised this criticism of transaction-cost economics as reductionist in its dichotomisation of markets and hierarchies to the neglect of
Technology/Economy programmes states:

"By staying solely with the poles of "markets" and "hierarchies", the attention of economists and technology policy makers is deflected from the proper recognition of a diversity of organizational designs. These cannot be considered any longer as some kind of hybrid, and perhaps transitory form, but represent a type of arrangement with its own specific distinctive features which it here to stay and must therefore be considered in its own right." 43

The structure of Japanese industry, for example, cannot be explained as a simply mix of market and hierarchy. The industrial groups (keiretsu) and the co-operation groups (kyoryokukai) which are now so attractive to Western managers are distinct organisational forms shaped by cultural and institutional relationships and a strong development state, not by a peculiar blend of market or hierarchy. 44 Powell attempts to overcome this problem of a market–hierarchy dichotomy by developing a third category of industrial organisation, network, that is distinct from both market and hierarchy. 45 Roberto Camagni also utilises the concept of network and offers the following definition;

"(A) network may be defined as a closed set of selected and explicit linkages with preferential partners in firm's space of complementary assets and market relationships, having as a major goal the reduction of static and dynamic uncertainty." 46

The theoretical and political significance of the notion of networks is addressed in

intermediates or hybrid forms. Williamson has recently made some attempt to rectify this situation. (See Williamson, O., "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives", Administrative Science Quarterly, Vol 36, 1991.) However, Williamson persists in viewing alternative organisational forms as a simple hybrid of market and hierarchy. 43 OECD, Technology/Economy Programme, Chapter 4- Innovation-Related Networks and Technology Policy Making, Draft. September 20, 1990, pp. 17-18
44 Sayer, A., "Post-Fordism in Question", op. cit., p. 678
45 A recent Australian Commonwealth government report, "Networking" by the Bureau of Industry Economics, Department of Industry. Technology and Commerce uses this work by Powell to overcome the some deficiencies of transaction-cost approaches. This report attempts to provide an economist's account of networks, in preference to post-Fordist or Porterist view. (This is explored in more detail in Chapter Four.)
the next chapter of this thesis. Suffice to say at this stage, that the transaction-cost approach's dichotomy between firm and market is a major failing that is increasingly untenable as the current patterns of capitalist restructuring incorporate non-market and non-hierarchy organisational forms.

Transaction Costs and Real Production Systems

The next criticism of transaction-cost economics is that the theory gives little consideration of the dynamics of real production processes. Production is structured by technological, social and information interdependencies irrespective of relative cost curves. The presentation of Scott's independent cost curves does not adequately capture these significant interdependencies.

"One example of the inadequacies ...is the absence of a clear analysis of the interdependence between production technique and organisational form. Instead of focusing on this interdependence, as one would expect of a truly dynamic theory, Williamson discusses the efficient resolution of contractual problems that are associated with given techniques of production. The techniques themselves, it would seem, are regarded by him as exogeneous to his analysis."48

. Walker argues that in a sense this problem arises from focussing on exchange within and between firms, and not on production.49 This is largely ignored by Scott, although not entirely.50 Some critiques extend this criticism to argue that technologies or core knowledges structure firms and markets, not transaction-cost or some criteria of cost minimisation. For example, Michael Best's theory of the firm which is derived from the Penrose–Richardson theory argues that firms

internalise similar activities and externalise complementary activity. This approach is consistent with the flexible specialisation thesis, because firms specialise around a core capacity and knowledge, not minimising transaction costs.51

**Transaction–Costs: An Over Conflated Category**

A final criticism of the transaction–cost approach is that the supposed economic necessity of transaction–cost minimisation is too generalised, and difficult to assess. As Fischer states:

"(t)ransaction costs have a well deserved bad name as a theoretical device, because solutions to problems involving transaction–cost are often sensitive to the assumed forms of costs, and because there is a suspicion that almost anything can be rationalised by invoking suitably specified transaction–cost."52

There are substantial difficulties in measuring the real costs associated with transactions between firms as opposed to the internalisation of production within a firm's boundaries. This makes transaction–cost an easily invoked explanation that is difficult to prove or disprove in a particular instance. Transaction–cost techniques cannot therefore be readily subjected to the 'rigours' of econometric techniques, and as a result the this branch of microeconomics has never become part of the economic mainstream.53

This problem of calculating costs is particularly apparent when considering the question of innovation "since transaction–cost can hardly be calculated in contexts where, by definition, production functions cannot be known..."54 Williamson

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52 Hodgson, G., *op. cit.*, p. 200
53 OECD, *Technology/Economy Programme*, Draft Chapter 4, Innovation-Related Networks and Technology Policy-Making, Draft 17th September 1990, p. 31
himself is aware of the limitations of the transaction-cost when considering innovation.55

In conclusion it is highly questionable whether Scott's framework can provide adequate explanations of industrial organisation of individual firms. However, it remains one of the few attempts to develop an integrated approach to industrial and spatial organisation, and on this basis alone, perhaps it should not be completely discarded. Beyond its essentialism and economism, Scott's work and its focus on transactions provides useful insights into the patterns of spatial and industrial restructuring which are currently poorly understood. Indeed the transaction-cost economics perspective could be improved significantly, even redeemed, if it were more sensitive to non-economic costs that shape industrial organisation, and it recognised networks as a distinct form of organisation as well as markets and hierarchies. However such a project is beyond the scope of this thesis.

**SCOTT'S THEORY OF INDUSTRIAL ORGANISATION AND THE NEW INDUSTRIAL SPACES**

Scott's theory of industrial organisation as described, is a highly generalised construct that attempts to explain the boundaries of the firm in terms of a balance of economies of scale and scope, and transaction costs. This much is known. However, Scott's more recent work, New Industrial Spaces, and the article Flexible Production Systems and Regional Development argue well beyond this point. He attempts to combine his theory of industrial organisation with the theory of flexible accumulation to explain the emergence of specific industrial spaces, such as Silicon Valley and The Third Italy, as being the geographic expression of flexible accumulation. A quick sketch of theory of flexible accumulation and Scott's

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theoretical synthesis is offered here.

As was briefly mentioned in the introductory chapter of this thesis, flexible accumulation is a post–Fordist theory which draws heavily from the French Regulation School. Scott is a leading contributor to the flexible accumulation perspective. Like the French Regulation School, the theory of flexible accumulation is based on the dual concepts of the regime of accumulation and mode of regulation. Yet unlike the French Regulation School, this perspective is less cautious in defining the new regime of accumulation – flexible accumulation. At one level Scott recognises the difficulties of theorising the transition.

"...the current situation is one of considerable complexity, for the old regime is far from having disappeared entirely, and the new one by no means as yet universally regnant." 56

Yet despite this complexity, Scott is apparently capable (or he thinks he is) of delineating the four major features of the regime of flexible accumulation: flexible automation, the dismantling of Keynesian welfare structures, flexible internal and external labour markets, and flexible, and interconnected plants' and firms. 57 These elements of flexible accumulation are a response to the crisis of mass production (Fordism) and increased economic uncertainty. The geographic and organisational expression of these four factors are the new industrial spaces – Third Italy, Silicon Valley and agglomerations of service industries.

To a large extent, Scott's flexible accumulation shares much in common with Piore and Sabel's flexible specialisation thesis. However Scott is less optimistic in presenting the regime of flexible accumulation as a normative political claim. Instead for Scott, flexible accumulation is the product of economic processes. Furthermore, Scott is less sensitive than the Regulation School to the role of

56 Scott, A., "Flexible production systems and regional development", op. cit., p. 171
political struggle in shaping the regime of accumulation, and the social mode of regulation is very much secondary to the economic regime. As Amin and Robins note "....the emergence of flexible economies and of localised industrial districts is "matched" by "corresponding" regulatory institutions and ways of life."58

Through linking his theory of industrial organisation with the theory of flexible accumulation, Scott seeks to offer an explanation for the rise of the new industrial spaces. The cornerstone of his argument is that the economic uncertainty and instability which characterises the flexible regime of accumulation promote vertical disintegration at the firm level. As Scott says—

"The foundation stone of this framework (synthesis) reposes on the proposition that when changes in economic conditions bring about intensified uncertainty and instability of production and increased competitiveness in final markets, then economies of scale and scope within the firm begin to break down so that the entire production system is liable to symptoms of horizontal and vertical disintegration." 59

The underlying rationale for this argument can be found in the New Industrial Spaces where Scott claims—

"..fragmentation of production into an extensive division of labour is apt to occur where market conditions are unstable and uncertain as a result, say of, rapid fluctuation of demand or insistent product differentiation and competition. (ie. post-Fordist economic conditions) Firms will want to minimise the negative impact of these conditions on their production schedules. Thus, to evade the transmission of costly production irregularities through an extended integrated chain of production, firms break up into fragmented units linked to one and other via market (and quasi-market) transactions."60

Furthermore, he argues as a deepening of the social division of labour is brought about by vertical disintegration, the number of external transactions between firms increases, and in an attempt to reduce these transaction costs, there would be a

59 Scott, A. "Flexible Production Systems and Regional Development", op. cit., p. 176
60 Scott, A., The New Industrial Spaces, op. cit., p. 26
strong tendency to spatial agglomeration of firms accompanying vertical
disintegration.61 - "vertical disintegration encourages agglomeration and
agglomeration encourages vertical disintegration."62 These elements combine to
create "transaction-intensive agglomerations of human labour and social activity"
63 - otherwise known as the new industrial spaces of the Third Italy, Silicon Valley
and so on. If nothing else, Scott offers a succinct account of the formation and
continued existence of the new industrial spaces that warrants closer examination.
What follows is an attempt to deconstruct this theoretical synthesis of the new
industrial spaces.

As has already been noted, Scott's argument rests on the assumption that the post-
Fordist economic environment is characterised by uncertainty and instability which
translates in declining internal economies of scope and scale, and encourages
externalisation of production activities. This derives from Scott's particular
misreading of the French Regulation School, where the emerging regime of flexible
accumulation is understood to be based on the flexible use of labour and capital to
response to the unstable market conditions.64 Scott argues that one chief means of
achieving more flexible use of capital and labour is through vertical disintegration.
The extensive external linkages enables the more flexible deployment of resources,
and this leads to the formation of industrial complexes. Bohm-Bawerk describes
this deepening of the social division of labour with external linkages as leading to a
'roundaboutness' of production, where specialised producers are flexibly linked
giving rise to complex organisational flexibility and increasing productivity through
specialisation.65 Scott contrasts this pattern of industrial organisation with Fordist
vertical integration which was organisationally inflexible because the limits placed

61 Ibid., p. 27
62 Scott, A., "Industrial Organisation and Location: Division of Labour, the Firm, and Spatial
Process", op. cit., p. 224
63 Scott, A., The New Industrial Spaces, op. cit., p. 109
64 Scott, A., Ibid., p. 105. This description of flexible accumulation has already been developed
earlier in this thesis in the introductory chapter.
65 Scott, A., Ibid., p. 29
on the possible combinations and recombinations of elements of the production process.66

A CRITIQUE OF SCOTT'S NEW INDUSTRIAL SPACES

While offering a microeconomic explanation of the industrial geography of post-Fordism, the core of the argument advanced by Scott is questionable for three reasons. Firstly, Scott asserts the relationship between uncertainty and vertical disintegration as an explanation for the formation of the industrial spaces without considering the consequences of economic uncertainty on the costs of market-based exchange. Secondly, Scott's framework isolates economic uncertainty and instability as the driving force of vertical disintegration from an array of other economic pressures. He provides little explanation or empirical data why economic uncertainty and instability are the predominant forces shaping the industrial organisation of the Third Italy, Silicon Valley and other new industrial spaces. Thirdly, Scott's account of the causal relationship between economic uncertainty and vertical disintegration negates the role of corporate strategy, firm decision-making and institutional structures that shape and mediate organisational forms. Each of these three criticisms derives from Scott's adherence to a method which rests on a restrictive version of ceteris paribus.67 Let me now elaborate on these criticisms in turn.

Scott's account of the relationship between the intensified uncertainty and instability in production and vertical disintegration assumes that costs associated with market exchange are unaffected, (or less affected relatively so), by the economic conditions that affect production. It is quite possible however that

66 Scott, A., Ibid., p. 25
economic crisis or instability affects the capacity to regulate or administer market exchange as much as it affects the internal economies of scale and scope associated with production. Indeed Oliver Williamson's work suggests that as the future becomes more unpredictable it is harder to write and specify the terms of contracts thereby increasing transaction-cost and encouraging vertical integration. Scott fails to explore this possible conflict between rising external transaction costs and declining internal economies of scale and scope.

A related second criticism of Scott's explanation of the rise of industrial spaces is that in *New Industrial Spaces*, Scott identifies six general conditions or factors that give rise to vertical disintegration based on his theory of industrial organisation. Besides the view that vertical disintegration is likely to occur where market conditions foster uncertainty and instability in production, Scott argues that vertical disintegration may occur where:

- there are widely varying economies of scale in a production process,
- transactions are immune to the types of market failure identified by Williamson,68
- a segmented labour market exists or where spatial agglomeration promotes vertical disintegration through reducing external transaction-cost, or
- vertical disintegration may arise if markets are expanding.69

In developing his explanation of the new industrial spaces, however, Scott only details the significance of a few of these factors which give rise to vertical disintegration. He acknowledges the contribution of a segmented labour market, and the impact of spatial agglomeration on promoting vertical disintegration, but still, the cornerstone of Scott's explanation rests with the impact of uncertainty and instability as a result of economic conditions. In effect Scott isolates one factor that promotes vertical disintegration and offers it as the universal agent in the formation

68 It could be argued that the political culture and history of the Third Italy does mitigate against the opportunism assumed by Williamson. However Scott does not explore this in his explanation of the rise of the Third Italy.
of industrial spaces from the Third Italy to Silicon Valley. Moreover, Scott offers no empirical evidence why market uncertainty and instability is the predominant influence on industrial organisation in this setting.

Such an approach over-states the centrality of market conditions in shaping industrial organisation. The initial rise of the Third Italy, for example, is understood primarily as a corporate strategy to circumvent the union militancy in the late sixties and early seventies, and not as some response to uncertainty based on demand fluctuations. Admittedly, Scott does recognise the possible role of labour markets, however, it remains subordinate to the influence of market conditions on industrial organisation.

This misplaced emphasis on the role of market conditions also means that Scott ignores other factors approach which shape industrial organisation that are consistent with a post-Fordist arguments. For example, from the work of Williamson, it could be argued that flexible technologies reduce the degree of asset specificity (investment in fixed assets) therefore lower the costs of market based transaction, and thus promotes vertical disintegration.

The third criticism of Scott's explanation that uncertainties in production translate into vertical disintegration is that he ignores the dimension of firm decision-making or corporate strategy and institutional factors. The actions of a firm in the face of uncertainty can not be simply 'read off' from some criteria of economic efficiency. As Lovering notes—

"[W]hether uncertainty translates into rising or falling internal economies (therefore) depends on the context of economic practices and institutions....This (Scott's approach) ignores the fact that in world which is necessarily uncertain, and in which information is always imperfect, any real firm has to interpret the evidence on costs, and decide on what amounts to its strategy

70 Piore, M. and Sabel, C. The Second Industrial Divide, op. cit., p. 226
This economism that permeates much of Scott's work is ironic, since Scott claims some allegiance with the French Regulation School, and the *raison d'être* of the Regulation School is to reject economism and incorporate institutional and cultural factors into economic analysis.

The seminal work of Linda Weiss on small capital and the state also supports this criticism of Scott's work. In her empirical examination of major industrial nations, Weiss demonstrates that there is no economic or industrial logic that determines organisational forms and levels of vertical integration. Rather the state plays a central role in shaping industrial structures. For example the industrial structures of the United Kingdom, France, and the United States are dominated by large firms, and vertical integration, whereas in Italy and Japan, the legal, and banking systems have supported small firms. In each case the state has a vital role to play shaping the organisational structure of capitalist firms. Any meaningful consideration of the role of the nation state is absent in Scott's work.

Where Scott does allow the socio-cultural environment to shape emerging industrial spaces, it is at the level of local resistance and struggle to new forms of "productive relations and labor-market arrangements." Yet Scott's recognition of socio-cultural factors does not extend to consider the actual economic processes of vertical disintegration as being equally influenced by the socio-cultural

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71 Lovering, J., "Fordism's unknown successor: a comment on Scott's theory of Flexible accumulation and the re-emergence of regional economies", *op. cit.*, p. 162
74 Scott acknowledges that he pays insufficient attention to the role of the nation state in his explanation of industrial organisation. (Scott, A., "Flexible Production Systems: an analytical task and theoretical horizons- a reply to Lovering, International Journal of Urban and Regional Research, Vol. 15, No. 1, 1991)
75 Scott, A., *The New Industrial Spaces, op. cit.*, p. 110
environment. For Scott, the politics of industrial spaces are only evident at the level how economic strategies unfold, not at the level of shaping the formation of economic strategies. Lovering expresses a similar sentiment, "Political influences are only allowed to affect some external parameters of the market, not the internal features such as a firms response within the market." 76

These criticisms of Scott's treatment of the nexus between economic conditions promoting uncertainty and instability and vertical disintegration derive from the methodological assumption of *ceteris paribus* in Scott's work. Scott isolates a microeconomic condition, to the exclusion of both other economic factors, and social and political factors in his account of industrial spaces. If we accept, that all other thing are equal, Scott's explanation does identify a variable contributing to the shape of the industrial structure. However, unfortunately other economic, social and political forces can not held in suspended animation, while Scott offers his explanation of industrial spaces. Too many causal agents are excluded from what remains an economistic and essentialist treatment of industrial organisation.

A further and less significant criticism of Scott work is that he fails to explore the limiting conditions on the new industrial spaces. Scott's synthesis only considers economic conditions promoting the leading 'geographic' edge of the flexible accumulation, and thereby fails to explore the limits to the formations of industrial spaces, and the economic conditions, such as the continued importance of internal economies of scale, appropability of R&D which will push firms to greater degrees of vertical integration. Recognising that mass production and Fordism were not entrenched in all industrial sectors or nations, Scott must address where the processes of vertical disintegration and spatial agglomeration are less likely to occur? This is an important question because it involves a recognition that the

76 Lovering, J., Fordism's unknown Successor: a comment on Scott's theory of Flexible accumulation and the re-emergence of regional economies*. op. cit., p. 163
geography of capitalist industrialisation will not simply be industrial districts, but a complex mix of dispersed, and localised industries made up of big and small firms varying between nations: Fordist and non-Fordist patterns of industrialisation will persist. Scott however, engages in this 'leading sector' view of the geography of industrialisation, and therefore projects the industrial spaces on to the rest of the economy. As a consequence, Scott, like Piore and Sabel, engages in a periodisation of history that contrasts a rigid past with a flexible future, because neither are willing to see the continuity, only the change.
THE SCOTT-LOVERING DEBATE

This critique of Allen Scott's theory of the new industrial spaces shares much in common with an article by John Lovering, and it is useful to review the recent (and slightly bitter) debate between Scott and Lovering in the pages in of the *International Journal of Urban and Regional Research* to explore Scott's response to some of my criticisms. 77

In Scott's first reply in the debate, he challenges Lovering to demonstrate that "the proposed relationship between uncertainty and disintegration is indeed only a minor element of the fabric of contemporary production apparatus." 78 (emphasis added) This challenge is completely unjustifiable given that Scott, himself, does not empirically demonstrate why the relationship between uncertainty and disintegration is such a major element of contemporary industrial organisation! The burden of proof clearly rests with Scott, not with Lovering.

In attempting to develop a coherent and totalising framework to explain the rise of industrial spaces, Scott foregos consideration of the variety of other economic forces acting on the boundaries on the firm. This coherence is achieved at the price – Scott compresses the empirical experience of all industrial spaces into an imperative that uncertainty translates into disintegration.


78 Scott, A., "Flexible Production Systems: analytical tasks and theoretical horizons- a reply to Lovering", op. cit., p. 131
In response to the criticism that he ignores the role of class and political relations, Scott cites references he makes to the impact of neo-conservative political strategies and a dualised labour market on industrial organisation. This is true, Scott does recognise the possible political and social influences on industrial structure, but these non-economic forces are 'add on' to what remains an economistic theory based on transaction-cost economics. 79

A further criticism that Scott deals with at some length is the claim by Lovering (which I support) that Scott's account of the industrial spaces is devoid of contingency, and instead asserts the formation of particular industrial structures based on the logic of economic processes. There is a need to recognise that the strategies of capital are a complex mediate expression, contingent on a number of determinants. Scott's offers a sarcastic response to this criticism.

"When is a satisfactory level of 'multidimensionality achieved? When you attain the 12th dimension? The 27th? The 349th? In the absence of some specific stopping rule i.e. concrete analytical specifications about the given domain of investigation, the call for complexity becomes nothing more than an indeterminate and unanswerable abstraction." 80

Scott strongly rejects a more post-modern approach to theory arguing that claims for complexity and indeterminacy are vacuous. I have considerable sympathy with Scott's feelings, however I do not think that Scott's essentialism is acceptable or the way forward either. This issue remains a major question for social theory that is well beyond the scope of this thesis. However hopefully both Scott's reductionism and Clegg's (the tale of French bread) calls for open endedness will both be transcended, and there will be theoretical approach which is sensitive to contingency and indeterminacy while recognising structural features of capitalist society.

79 Also see Lovering, J., "Theorizing Post-Fordism: why contingency matters (a further response to Scott)", op. cit., p. 298
80 Scott, A., "Flexible Production Systems: analytical tasks and theoretical horizons- a reply to Lovering", op. cit., p. 132
Finally Scott's response offers a barbed criticism which I am sure would be directed at me, as much as Lovering.

"Let me register along with these admittedly acerbic remarks my consternation at the practice, not just in Lovering's case, but in so much else that passes for 'critique' these days of the gratuitous throwing about the labels like 'neo-classical', 'positivist', 'determinist', 'economistic', 'essentialist'. The ready-made judgements (whatever they may or may not be) implied by these labels are not unproblematic self-affirming, and it is subversive of all meaningful critique to cut the corners in this way."81

Scott is correct in asserting that these labels are sometimes used in place of critique. But I would argue strongly that the critique developed here stands on its own with or without the labels!

In the conclusion Scott's explanation of the new industrial spaces is unsatisfactory blend of transaction-cost economics, and the theory of flexible accumulation. His work does not escape the failures of the transaction-cost economics, and is based on an efficiency or cost-minimisation explanation of industrial organisation. His approach also dichotomises markets and hierarchies as two competing mechanisms of organising transactions and fails to consider alternative organisational forms.

Scott's attempted synthesis of the theory flexible accumulation and his theory of industrial organisation is also found wanting. In effect, Scott isolates economic uncertainty out as the factor which is promoting vertical disintegration and spatial agglomeration. This is a reductionist explanation because Scott fails to recognise other economic and non-economic pressures on the boundaries of the firm.

Having completed the critique of the predominate post-Fordist accounts of industrial decentralisation, it is possible to now address the role of these theories in Australia, particularly the flexible specialisation thesis.

81 Ibid., p. 133
CHAPTER 4

THE FLEXIBLE SPECIALISATION THESIS, NETWORKING, AND INDUSTRIAL DISTRICTS: THE CASE OF AUSTRALIAN MANUFACTURING

"The idea of networks strikes a chord between a wide range of ideological positions." Narelle Kennedy, Director Marketing and Industry Policy, Australian Chamber of Manufacturers, Networking Seminar, 29th April 1991

INTRODUCTION

This thesis commenced with a sketch of Bruce Herman's address to business leaders, trade unionists and government policy makers. Equipped now with the critique of the flexible specialisation thesis (and to a much lesser extent Scott's account of the new industrial spaces), it is possible to return to the issues raised in Herman's paper and to examine more closely the influence of these theoretical perspectives on the inter-firm networking policy debate in Australia. This chapter takes up these issues and offers a political analysis of the emergence of inter-firm networking on the Australian industry policy agenda. The chapter focuses primarily on the role of the flexible specialisation thesis and the much cited Third Italy model, especially Emilia–Romagna, in shaping the views of trade unions and tripartite government bodies towards the promotion of inter-firm collaboration and industrial districts in Australia.

The chapter begins with a review of recent Australian research on inter-firm collaboration and networks. This review demonstrates that a considerable amount of research work has been shaped by the flexible specialisation thesis, and shows that the non-post–Fordist accounts of Michael Porter and transaction–cost economics have also been influential. The non-post–Fordist accounts are outlined in some detail in order to highlight the variety of intellectual perspectives which have influenced the
debate and policy formulation in Australia, and provide a full overview of the debate.

Following this outline of the research literature, a description is offered of the policies and programmes of the main organisations and institutions involved in the promotion of inter-firm collaboration agenda in Australia. Significant organisations involved in the promotion of inter-firm networking include the Australian Manufacturing Council (AMC), the National Industry Extension Service (NIES), the NSW Department of State Development (formerly Business and Consumer Affairs), the Australian Chamber of Manufacturers NSW (ACM), the Metal Trades Industry Association (MTIA), the Australian Congress of Trade Unions (ACTU) and the Textile, Clothing and Footwear (TCF) unions. A primary aim of these policies and programmes is to facilitate greater inter-firm collaboration in order to overcome the problems which plague small Australian manufacturing firms, such as lack of skills, lack of capital, vulnerability to economic conditions, lack of market knowledge and lack of long-term planning. 1

A description of the Australian political and economic context is also developed which provides some of the background to appreciate why inter-firm networking has become an attractive policy direction for a wide variety of groups and organisations. The review concludes with an identification of several much cited examples of successful inter-firm collaboration in Australia.

Following the description of the current state of Australian research and policies, I develop a critique of the influence of the flexible specialisation thesis and the Third Italy model in Australia. It is very clear that the current views and policies of Australian trade unions and tripartite manufacturing bodies towards inter-firm networks have been quite directly shaped by the flexible specialisation thesis and the Third Italy model. There is a desire among these organisations to replicate the

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1 Australian Chamber of Manufacturers. "ACM File", 2. September 1988
'success' of Emilia-Romagna. The flexible specialisation thesis and the Third Italy model have found a receptive and uncritical audience in Australia, particularly among sections of the trade union movement as shall be demonstrated in this chapter. Yet as Chapter Two has already demonstrated, there are serious doubts about the intellectual, empirical and political soundness of the flexible specialisation thesis and the Third Italy model. There are also additional questions about the utility of this framework as a guide to developing industry policies in Australia.

A further criticism of the Australian inter-firm collaboration agenda is that the term 'networking' depoliticises industrial organisation and fails to highlight asymmetries of power between firms and organisations. Through depoliticising the organisational restructuring of Australian industry exploitative and dependent inter-firm linkages, such as dependent sub-contracting are more likely to occur. This process of depoliticisation is shown to be commensurate with the flexible specialisation thesis and post-Fordist theories more generally. Through reference to the role of post-Fordist ideas in shaping the trade union agenda of award restructuring, I argue that post-Fordist theories have consistently contributed to the depoliticisation of Australian industry policies.

However the chapter concludes that from a trade union point of view, the idea of inter-firm networking does not need to be rejected as a strategy to foster industry development. Instead what is required given the current agenda, is to develop a sharper political focus for understanding inter-firm networks. It is argued that the first crucial task in this project to resurrect the idea of inter-firm linkages is to develop a framework which recognises that some forms of networking are based on exploitation between firms. Currently, in the Australian debate, 'networking' has become an over-conflated category which fails to differentiate exploitative dependent sub-contracting between a large and small firm, and trusting co-operative relationship between firms. A typology is offered which attempts to draw out the dimensions of power and control
in inter-firm relations to differentiate exploitative and development networks.

There are several other crucial elements required to reorientate the current inter-firm networking agenda along a more political line. There is, for example, a need to distinguish between simple and systemic networks. The predominate vision of inter-firm networking in Australia is simple inter-firm collaboration between a few isolated firms. There is little role for the public sector. An alternative version of inter-firm networking highlights the role for the public sector in providing infrastructure support for, and regulation of, the firms. Secondly, there is a need to link inter-firm networking strategies to broader industry policies, particularly regional policies. However so far in Australia, these connections have not been made. Both the Italian and Japanese experiences, whatever their faults, do highlight the possible role for the local and regional state to develop industry policy. Thirdly, the networking agenda provides the opportunity to undermine the ideology of the primacy of market-based exchange. The success of networks is premised on cultural, institutional and non-market forces. Therefore a recognition of the importance of inter-firm collaboration promotes a more institutional approach to industry development. Fourthly, there is an argument that trade unions can play a more active role in developing, brokering and regulating inter-firm networks.

Before proceeding to develop this analysis of the Australian networking policy initiatives several caveats are required. Firstly, it should be stressed that no industry policies or programmes which have been developed to foster inter-firm collaboration or networks among manufacturing firms in Australia have been simply 'read off' from the flexible specialisation thesis. Rather the policies have evolved in manner where the flexible specialisation thesis has been a significant intellectual and political resource which has been drawn on to inform and legitimate actions. The essential point here is to reject a positivist conception of politics, where actors are understood to be simply applying the flexible specialisation or some other theoretical approach in a
straight-forward and prescriptive manner. Instead it is more useful to understand the flexible specialisation thesis as a set of ideas and a discourse that offers both an interpretation about the changing nature of Australian manufacturing, and also serves as a rhetorical device to legitimate a variety of political strategies.

Secondly, as was stated in Chapter One, the Australian policy agenda has been dominated by the terminology of 'networking', not of 'industrial districts', 'industrial spaces' or 'inter-firm collaboration' which occur throughout the post-Fordist literature. The expression 'industrial district' appears relatively infrequently in Australian industry policy discourse, partly because the spatial dispersal of Australian industry makes it very difficult to realise the dense localisation of industry which characterise Marshallian industrial districts. As the Pappas, Carter, Evans and Koop/Telesis report notes:

"The farm machinery firms of Bundaberg can gain little clustering benefit from the other main players in the field located, as they are, in Victoria, and South Australia. Similarly, our shipbuilders are in far-flung locations such as Townsville, Newcastle, Hobart, Adelaide, and Fremantle."²

'Networking' has emerged as a general category to describe all manner of inter-firm linkages, but like much of the flexible specialisation literature, the focus has been on the relationship between local small and medium sized firms. This chapter gives attention to the political consequences of this shift in discourse.

Thirdly, the critique I develop aims to redirect the networking policy agenda, rather than to reject the initiative completely. While being aware of the political limitations of pursuing a labour reformist strategy towards inter-firm relations (see Chapter Two), the 'networking' policy agenda is here, and there is an opportunity to give the agenda a sharper political focus. However, this being said, I do not claim that inter-

firm collaboration and networking can be held out as a panacea for Australian manufacturing, or as a strategy to realise a progressive shift in political or economic power. Instead, elements of the agenda can foster local manufacturing development, and can assist in the erosion of the dominance of economic rationalism which continues to hold sway in the 'battle of ideas' in Australian political economy.3

A REVIEW OF THE RECENT AUSTRALIAN INTER-FIRM NETWORKING AND COLLABORATION LITERATURE

A considerable amount of research has been undertaken in Australia about inter-firm collaboration and networking based on the flexible specialisation thesis. John Mathews, Linda Weiss, the City of Melbourne and the Australian Manufacturing Council have all published reports or papers firmly located within the flexible specialisation framework. However the other post-Fordist framework offered by Allen Scott is rarely cited in the Australian literature, and once where Scott's work was referred to, it was not distinguished from the concept of flexible specialisation.4 Therefore in the current Australian inter-firm networking debate, the flexible specialisation thesis is essentially the post-Fordist perspective.

City of Melbourne

One of the first studies on inter-firm collaboration in Australia which drew extensively on the flexible specialisation thesis was by the City of Melbourne.5 The aim of the study was to assess the potential of inter-firm collaboration for improving the competitive position of small Victorian manufacturing firms, and to overcome the

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4 Mathews, J., Towards a New Model of Industry Development in Australia, Industry Relations. Working Paper No. 78, School of Industrial Relations and Organizational Behaviour. The University of New South Wales, May 1990. p. 10
weaknesses caused by a lack of economies of scale.

The study is based on the same assumptions as the flexible specialisation thesis about the changing nature of markets, production and technology.

"Market segmentation with shorter product life cycles, smaller unit batches and greater product offerings, has presented small firms with the opportunity to gain a competitive advantage over large, vertically integrated concerns with their inflexibility and bureaucratic structures."6

The study provides a useful summary of the specific benefits of collaboration to small Australian manufacturers. These include increased purchasing power, improved access to new technology, enhanced production capacity, greater R&D resources, improved administrative support, improved access to management skills and training programmes, and improved marketing, promotion and distribution capacity.7

The overseas experience of inter-firm collaboration is also a focus of the report. An optimistic account of the Third Italy experience features prominently along with brief surveys of other countries including Japan, Denmark, the United States and Britain. The City of Melbourne report concludes with the recommendations that inter-firm collaboration can assist in overcoming the problems of small firms, that efforts should be made to disseminate information about the benefits of inter-firm collaboration, and that an Industry Working Group should be established to facilitate and assist the formation of collaborative ventures. The study also acknowledged that collaboration among Australian manufacturing firms in the past had not been entirely successful because of the fiercely independent and competitive nature of small firms, and because of the lack of knowledge and experience of small firms as to how to build successful collaborative relations.8

6 Ibid., p. 56
7 Ibid., pp. 25-29
8 Ibid., p. 57
As a result of the study by the City of Melbourne, a kit was produced entitled "Inter-
firm Collaboration Guide". The guide aims to provide an information guide or 'how to'
manual for firms. Ten thousand copies of the kit have been distributed throughout
Victoria.9

*The Australian Manufacturing Council*

The Australian Manufacturing Council (AMC) conducted a 'fact finding' mission to
the United States, Denmark and Italy in November 1989 to investigate the prospects
for inter-firm networks in Australia. On returning to Australia a discussion paper,
*Networking* was released.10 The story of the Emilia-Romagna region is a central
focus of the paper, and it also draws heavily on the work of Piore, Sabel and Brusco
already outlined in Chapter Two. The AMC paper also details the experience of
Denmark in attempting to build inter-firm networks. While the experience of
Denmark has not been central to the flexible specialisation thesis (although there is
some discussion of the 'Second Denmark' at Jutland), in Australia there has been
significant interest in the Danish experience.

For Denmark, the pending unification of the European market has meant that many of
Denmark's predominantly small and medium sized firms are going to have to increase
economies of scale to compete with other trans-European companies.11 Largely
based on the Italian experience, the Danish government viewed inter-firm
collaboration as an important means of improving external economies of scale, and
increasing the diffusion and access to technical knowledge. In March 1989 the Danish

9 City of Melbourne, "Collaborative Profits", *Enterprise Melbourne*, City of Melbourne Economic and
Employment Branch, October 1990, p. 1
Melbourne, March 1990. Available from the Australian Manufacturing Council, 9th Floor, Building D,
World Trade Centre, Cnr Flinders and Spencer Streets, Melbourne, 3005
11 Hatch, R., "Denmark in the single/global market". Talk at Jutland Technological Institute, 10th
October 1989 (Jutland, Unpublished) Available from C. Richard Hatch, Director, Center for Urban
Reindustrialization Studies, New Jersey Institute of Technology, Newark, New Jersey, USA
government allocated an equivalent of $A25 million under the National Enterprise Network Programme in financial incentives to foster networks over three years.\textsuperscript{12}

After six months of the programme, 25\% of Denmark's manufacturing firms were involved in networking initiatives.\textsuperscript{13} The Programme also trains brokers to facilitate the formation of networks, and sought to link firms to the Danish technology institutes and technical information centres.\textsuperscript{14}

Australian interest in Denmark's attempts to facilitate the formation of collaborative relationships stems from the similarities between Australian and Danish economies, and the fact that Denmark has deliberately sought to build these relationships through industry policies. Unlike the Third Italy, the Danish government is trying to foster small firm collaboration without the Italian historical and cultural precedents. This is the same situation as in Australia.

"Newer forms of corporate alliances...to meet ever greater market challenges...are starting to be mirrored by industry in Australia, but are often hampered, it appears to me, by the inclination of Australian companies to go it alone"\textsuperscript{15}

The AMC study also examined four inter-firm networking Programmes in the United States which were developed after visits to Emilia-Romagna. The four programmes are metal-working in East Brooklyn, manufacturing and innovation networks in Pennsylvania, the Machine Action Program in Massachusetts, and the Michigan Modernisation Service.\textsuperscript{16} These programmes are further evidence of the global influence of the Third Italy as a model for industry development.

\textsuperscript{12}Burke, J., \textit{Networking}, \textit{op. cit.}, p. 21
\textsuperscript{13}NIES, "The overseas experience", \textit{COZ}, No. 19, Jan/Feb 1991
\textsuperscript{14}Hatch, R., "Denmark: Leading the way to the single/global market", Opening Session of the Broker Training Program, Jutland Technological Institute, 8 August 1989, (Jutland, Unpublished) Available from C. Richard Hatch, Director, Center for Urban Reindustrialization Studies, New Jersey Institute of Technology, Newark, New Jersey, USA
\textsuperscript{15}John Button, Minister of Industry, Technology and Commerce quoted in \textit{City of Melbourne. Inter-firm Collaboration Guide}, 1990, p. 4
\textsuperscript{16}Burke, J., \textit{Networking}, \textit{op. cit.}, pp. 27-32
John Mathews and Linda Weiss

One of the most comprehensive cases presented as to why Australia should adopt industry policies aimed at fostering flexible specialisation and industrial districts is the work of John Mathews and Linda Weiss. They draw on the earlier work of Weiss on regional policy and small business, and Mathews' work on post-Fordism and changing patterns of industrial organisation.

Linda Weiss' basic thesis is that there is no inherent logic to industrial giantism.

"Decentralised production is therefore no mere exception to the classical rule of concentration, nor do such rules exist. Just as there was nothing necessary about the general decline of small-scale manufacturing, so conversely, no capitalist law of motion, no industrial logic makes the spread and triumph of giantism irresistible. It does indeed depend significantly on what states do."

With reference primarily to the Third Italy, and Friedman's account of the small firms in Japan, Weiss argues that the state plays a central role in shaping capitalist industrial organisation. The Italian and Japanese governments, for example, have supported small manufacturing enterprises through a variety of schemes including the creation of financial institutions to support small scale manufacturing, taxation regimes which support small firms, and encouragement for small firm co-operation to achieve economies of scale.

Weiss contrasts the policies and support for small business in Italy and Japan with the 'Fordist' industrial giantism in France, Britain, Germany and the U.S.A. In these cases

17 Mathews, J., and Weiss, L., "A Tale of Two Industries: Textiles in Italy and Australia". Working Paper No. 86, School of Industrial Relations and Organizational Behaviour, University of New South Wales, February 1991
as well, she stresses the role of the state in shaping the trajectory of giantism, rather than it being shaped by some logic of the market or by industrialism. Based on Michael Mann's theory of the state, Weiss argues that the industrial structures of these nations have been shaped by the legacy of industrial and economic policies that evolved as part of the mobilisation effort for World Wars I and II. These policies supported large scale industrial production (mass production) over small firm production.21

In contrast to Weiss, Mathews' work has involved the explicit promotion of post-Fordist strategies in Australia. This can be seen in the recent publication of two books, Tools of Change and Age of Democracy.22 Tools of Change is presented as a post-Fordist manual for workplace change and award restructuring. This work is discussed critically later in this chapter. Age of Democracy is a more general social-democratic manifesto for associative democracy—a form of democracy based on associations located in civil society. The concept of associative democracy is similar to Hirst's associational socialism.

Mathews has also written on the need for Australian industry policies to support the development of small firm industrial districts and networks.23 Located firmly within the flexible specialisation framework and citing the successes of the Third Italy, Baden-Württemburg, and Japanese small firms in Sakaki, Mathews argues a case for this model of industry development in Australia. He also suggests that Australian trade unions should greet the "new and exciting challenge" of the small firm model of industry development in a similar manner to that in which the "Italian unions have welcomed the rise of the enterprise culture manifested in the Third Italy."24 This

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24 Ibid. pp. 15-16
claim will be investigated later.

These works by Mathews and Weiss converge in their jointly authored paper *A Tale of Two Industries: Textiles in Italy and Australia*. In this paper Weiss and Mathews make the case for facilitating the development of small firm industrial districts in the Australian textiles industry. Drawing on the success of the Prato textile industrial district in the Third Italy, they argue that the 'Prato model' provides a direction forward for Australia's uncompetitive and increasingly unprotected textile industry. For the authors, Prato, Italy's largest textile industrial district in the region of Tuscany (just south of Emilia-Romagna), is based on the principles of flexible specialisation with very similar features to industrial districts in Emilia-Romagna with regard to industrial structural, social, political and economic conditions.25 (See Chapter Two)

They claim that unlike the small firm industrialisation of Prato, the Australian textile industry has been organised along the principles of mass production – concentration, vertical integration, cost minimisation and little regard for quality. The giants of Australian textile production – Linter, General Investments Australia (GIA), Textile Industries Association (TIA) and Fibremakers – are in trouble, and Mathews and Weiss believe that the 'Prato model' is the way forward. The challenge is to develop public policies which would provide the infrastructure to support the formation of small firm industrial districts. This would typically include low interest finance for small firms, provision of industrial parks, and market and technical intelligence.26 Their message is simple. According to Mathews and Weiss, flexible specialisation, decentralised production, inter-firm collaboration and the supportive public infrastructure provide the foundation for a competitive textile industry in Australia.

26 Ibid. pp. 59-60
Other Recent Australian Research

In Australia there has also been considerable non-post-Fordist research concerning the contribution of inter-firm linkages to the competitiveness of firms and economies. Of particular influence has been the work of Professor Michael Porter in shaping some of this research agenda.

Porter describes clusters as vertically linked firms in the same or related industries. Clusters typically involve a considerable number of spatial agglomerated large or small firms. An example of an industry cluster cited by Porter is the Italian footwear cluster which includes industries producing leather-working machinery, specialised machine tools, and woodworking equipment as well as ski boot and handbag production. Drawing on recent innovation theory, Porter argues that vertical linkages between users and producers are an important source of innovation, and that the competitiveness of related and supporting industries is a key factor in creating other competitive industries. Geographical proximity enhances the power and scope of these vertical linkages.

One important difference between Porter’s idea of clusters and the flexible specialisation thesis is that Porter dismisses the value and desirability of horizontal inter-firm collaboration. Instead he argues that effective anti-trust policies are necessary to ensure the strong domestic rivalry which are a prerequisite for

29 Porter, M., The Competitive Advantage of Nations, Macmillan, London, 1990, pp. 667-668 This distinction between the views of Porter and the flexible specialisation thesis is not very well appreciated in Australia, and there is a tendency to conflate these two theoretical approaches.
competitive industries.\textsuperscript{30} Where horizontal collaboration does take place, even in
areas of pre-competitive research and development, Porter argues that it is not likely
to assist in building internationally competitive firms. \textsuperscript{31} There is, however,
considerable evidence which indicates that Porter's view is mistaken. The Italian
industrial clusters or districts much cited by Porter are premised on a high degree of
horizontal collaboration and competition.\textsuperscript{32} Porter underestimates the wide variety of
possible benefits which horizontal collaboration might foster. Such relationships are
viewed as collusion by Porter and therefore by definition have a negative impact on
domestic rivalry and international competitiveness.\textsuperscript{33} However within a small
economy like Australia where economies of scale (absolute or relative) are difficult to
achieve, some forms of horizontal collaboration are possibly important for achieving
competitive exports. This does not equate with the view that mergers and monopoly
power in Australia are necessarily more likely to create a competitive industrial base.
Instead, horizontal networking can foster both collaboration and competition which
can neither be achieved via monopolies or via a large number of atomised small firms.
As is noted by an Australian Manufacturing Council officer—

"An important point to emphasise is that although networking involves
extensive collaboration, it is not inimical to competition. Firms engaged in
networking are still separate independent entities which compete freely in the
marketplace, including against each other."\textsuperscript{34}

There clearly is a role for anti-trust policies in a capitalist economy, but Porter is
overly zealous about the application of such policies indicating his faith in competition

\textsuperscript{30} Porter, M., The Competitive Advantage of Nations, \textit{op. cit.}, pp. 662-663 It is interesting that BHP
(Steel) one of Australia's few internationally competitive firms producing elaborately transformed
manufactures is a monopoly and therefore does not face strong domestic rivalry.
31 Citing the pre-competitive research and development consortia organised by MITI involving direct
competitors in the Japanese microelectronics industry, Porter argues that these consortia only attract the
companies second rate researchers because the main research effort takes place within the firm where it
can appropriate the results of the research and development. Porter, M., The Competitive Advantage of
Nations, \textit{op. cit.}, p. 398
32 Herman, B., Personal Communication, Sydney 29 April 1991
33 Porter, M., The Competitive Advantage of Nations, \textit{op. cit.}, pp. 663-667
p. 364
Several researchers have sought to apply Porter's insights about clusters and vertical linkages to the Australian context. Don Scott-Kemmis from the Centre for Technology and Social Change, University of Wollongong, has undertaken research to assess the extent of 'user-producer' linkages in the telecommunication, finance and food processing industries, and the role of leading-edge customers in Australia. Scott-Kemmis has also sought to assess the importance of geographical proximity in the formation of clusters, and whether 'networks' are likely to be transitional phenomena or a permanent feature of the fifth Kondratiev long wave.

John Rooney (Bureau of Industry Economics) and the Business Council of Australia, have also undertaken separate projects to identify industry clusters and potential clusters in Australia. Rooney's study identified several potential clusters in the following manufacturing industries – mineral working machinery, commercial refrigerators, centrifugal pumps, valves, domestic heating and cooking apparatus, domestic refrigerators, freezers, air conditioners, AC motors and switchgear. The study however also raised numerous questions about the applicability of Porter's approach to Australia. Porter specifies that competitive clusters require a one percent share of the world market, a positive trade balance, and that the firms must be

35 A further criticism of Porter's study of the Third Italy is that he ignores the role of the public infrastructure. Mathews, J., and Weiss, L., "A Tale of Two Industries: Textiles in Italy and Australia", Working Paper No. 86, School of Industrial Relations and Organizational Behaviour, University of New South Wales, February 1991, p. 31
36 Personal Communication with Don Scott-Kemmis about research commissioned by DITAC that is yet to be published. For an outline of the study see, Scott-Kemmis, D., "Innovation Through Interaction: User-Producer Relationships and Industry Clusters- Plan for a Research Project in Australia", Unpublished, April 1991. Available from the Centre for Technology and Social Change, Illawarra Technology Corporation, University of Wollongong, P.O. Box 1144, Wollongong, NSW, 2500
38 Rooney, J., op. cit., p. 10
predominantly locally owned. Yet due to the structure of Australian industry (the high level of foreign ownership and control and the lack of export oriented elaborately transformed manufactures (ETM)), Rooney had to forego these preconditions in his research. As a result it must be questioned whether Porter's method is of any relevance in Australia when such fundamental preconditions have to be waived. The relevance of Porter's work to Australia is also questionable on the grounds that Australia has a modern economy which is financed by commodity exports, and therefore the Australian currency is over-valued and locally manufactured products have been too expensive to permit broad industrial development. Yet many Australian policy makers remain blind to this significant difference between Australia and the national economies studied in Porter's book. Porter himself acknowledges these differences.

An interest aspect of Porter's work is that it has been well received by a very wide audience in Australia. Porter's worked is cited and supported by the Business Council of Australia, the very dry Federal Opposition spokesperson on industry policy Ian McCauglin, NSW Department of State Development, the Australian Chamber of Manufacturers, as well as the Australian Council of Manufacturing, and the Department of Industry, Technology and Commerce (DITAC) and other more interventionist groups. In the politicised world of industry policy it is rare for a text to receive so much support from both sides of the 'industry policy fence'. There are several possible explanations for the high level of bipartisan support that Porter's work has received. Firstly, The Competitive Advantage of Nations contains a wide variety of policy prescriptions which can be selectively picked up by the different actors in

40 An example of the problems of Porter's method is evident in Rooney's observation that Australia has failed to develop a competitive sector in agricultural machinery, despite satisfying Porter's criterion having a large and competitive agricultural sector. What Rooney fails to stress is that the agricultural machinery industry has had a high level of foreign ownership. The Ford New Holland plant in Victoria, for example, was closed by Ford head office in the United States despite local attempts to keep it operational. This would further suggest the inappropriateness of Porter's method in Australia.
41 Turnbull, S., "Porter findings irrelevant", Australian Financial Review, 1 August 1990
Australian industry policy. Secondly, Porter's popularity possibly reflects his focus on international competitive which dominates the Australian industry policy agenda due to Australia's continuing trade imbalance. Thirdly, with the dominance of economic rationalism perhaps some interventionists consider Porter's work is about the best they can hope for in the current climate. Fourthly, as Evan Jones argues the positive reception to Porter's ideas might also have something to do with the well-known Australian cultural cringe. Fourth, and finally perhaps Porter's book offers the definitive formula for industrial success. Whatever the answer, the influence of Porter's work is a very interesting sociological phenomena which deserves further attention.

The transaction–cost economics approach has also been utilised as an analytic framework for understanding the relative merits of different forms of industrial organisation in Australia. The Bureau of Industry Economics (BIE) published a report "Networks: A third form of organisation" centred on this framework. It is interesting to note that the study drew heavily on the work of Powell to overcome the market–hierarchy dichotomy which characterise the work of Coase, Williamson and Scott. (See Chapter Three) The study by BIE identified a number of different types of 'networks' in Australia including primary networks (joint ventures, industrial districts), industry–based support networks (trade associations), and government based support networks (eg. co–operative research centres).

A major deficiency with this BIE study is that it fails to appreciate the role of institutions and culture in influencing economic activity and the behaviour of firms. The study concludes that any role for the government in promoting or supporting inter–firm networks arises only where market failure can be demonstrated due to

42 Jones, E., "Industry debate and the cultural cringe". Australian Financial Review, 1 August 1990, p. 15
information gaps and externalities — the standard neo-classical approach premised on the view of the primacy and efficiency of markets. This is ironic when the whole idea of inter-firm collaboration and networks challenges the naturalism of market exchange and shows the importance of non-market factors, such as the role of the state and culture, in shaping economic behaviour. Yet as we have come to expect, the conclusion of the BIE study is consistent with the economic rationalism so dominant in the Canberra bureaucracy, particularly in Treasury and the Industry Commission.

Aside from the work of Porter and transaction-cost economics there have been several other recent non-post-Fordist research projects investigating the economic significance of inter-firm linkages. Professor Jane Marceau from the Australian National University for example, has undertaken several empirical case studies exploring the significance of inter-firm (customer-supplier) linkages in the clothing, electronics and automobile industries with a particular emphasis on the diffusion of Just-In-Time (JIT). Marceau offers an eclectic theoretical framework which is based on the reconceptualising the economy as a series of chains and complexes (filieries), but she also recognises the contribution by post-Fordists (flexible specialisation, and neo-Schumpeterian), and Michael Porter. Marceau suggests that the structure of Australian industry inhibits the development of the industry complexes, filieries and clusters which are needed for industrial success. Many production chains and filieries are incomplete and the chains lead out of the country at crucial points. Marceau also points out major firms look overseas for suppliers, particularly of capital goods, thereby preventing the development of clusters, and

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44 Bureau of Industry Economics, Networks: A Third Form of Organisation, op. cit., pp. 34-37
47 Marceau, J., "Neither Fish nor Fowl" op. cit.
48 Marceau, J., "Neither Fish nor Fowl", op. cit., p. 16
'user-producer' linkages. In addition Marceau indicates that the dispersed nature of Australian industry is preventing the development of inter-firm linkages and the adoption of JIT between firms.

A recent report by the Taskforce on the Commercialisation of Research commissioned by the Minister for Science and Technology, Ross Free, has also stressed the importance of inter-firm networking.\textsuperscript{49} This report argued strongly that inter-firm networking is an important mechanism to assist small start up firms which are involved in the commercialisation of technology. The Taskforce recommended that the Federal government should allocate $5 million over the next three years to establish demonstration networks to diffuse knowledge of the benefits of networking through Australian industry.\textsuperscript{50}

A key issue addressed in the Taskforce report was the possible constraints on networking activities by the Trade Practices Act. There is still some confusion in Australia as to whether emerging forms of inter-firm collaboration are in breach of anti-trust laws. On the basis of advice of the Trade Practices Commission, it was suggested that inter-firm networking is legal where it does not lessen competition, and/or it could be demonstrated there was public benefit from the collaboration. It was concluded that in general most forms of networking would not be in breach of the Trade Practices Act.\textsuperscript{51} The Australian Chamber of Manufacturers NSW have also addressed this issue, but arrived at a less definitive conclusion. It was suggested to the Chamber of Manufacturers that either horizontal or vertical collaboration between even small firms could be in breach of sections 45 and 47 of the Trade Practices Act.\textsuperscript{52} It is evident that this issue of the legality of forms of inter-firm collaboration

\textsuperscript{49} Taskforce on the Commercialisation of Research. \textit{Bringing the Market to Bear in Research}. AGPS, Canberra, November 1991, pp.18-22
\textsuperscript{50} Taskforce on the Commercialisation of Research, \textit{op. cit.}, p.22
\textsuperscript{51} Taskforce on the Commercialisation of Research, \textit{op. cit.}, p. 21
\textsuperscript{52} Australian Chamber of Manufacturers (NSW) Inter-firm Collaboration and the Trade Practices Act, and Australian Chamber of Manufacturers, The New Commonwealth Corporations Legislation and Inter-firm Collaboration. Unpublished. ACM NSW, 1 May 1990
will only become clear in Australia when actual examples of collaboration and networking are taken to court under the Trade Practices Act.

Another alternative view of the evolution and importance of networks is offered in The Possible Dream by Peter Fritz.53 This journalistic work provides a history of the evolution of the group of companies Technical Computing and Graphics (TCG). TCG is a 'honeycomb' structure of more than 60 related, but independently managed companies in computer services and consulting. The TCG group has an annual turnover of more than $50 million.54 Each element of the TCG group draws upon administrative and marketing services provided by the core group of companies, but remains an independent profit centre. Peter Fritz, the chairperson of TCG, acts as mediator between the separate elements, but provides each element with a large degree of autonomy. However, there is confusion about the TCG model and whether it constitutes an example of inter-firm networking, or some other organisational form.55 Irrespective of where the truth lies, TCG represents one of the few innovative and successful groups of companies in Australia that could possibly described as a network firm.

POLICIES AND PROGRAMMES OF THE MAIN INSTITUTIONAL ACTORS

In Australia interest in forms of collaborative industrial organisation has extended well beyond the academic and research community. Numerous employer organisations, unions and government departments have enthusiastically adopted the ideas of inter-firm networking and collaboration as a vehicle for improving the competitiveness of

55 Personal communication with Peter Dempster, Bureau of Industry Economics. Peter Dempster suggested that TCG is not really a 'network' of companies, so much as a single company with independent profit-centres, much like the current structure of many transnational corporations. However, the BIE was compelled to include TCG in its report Networking: A Third Form of Organisation because TCG is one of the few success stories in Australia.
Australian manufacturing industry by generating external economies of scale and improving the innovation process through 'user-producer' linkages. Detailed below are the programmes, policies and other initiatives of several of the key actors involved in the promotion of inter-firm networking among Australian manufacturing firms.

**Trade Unions**

Since 1990 the ACTU have been promoting industry policies to assist in the establishment of regionally based networks of small and medium sized manufacturing firms based on the Italian experience. The ACTU Industry Committee recommended that a small firm and regional development programme be established with an initial budget of $3 million per annum over a 4 year period.

"Develop new sectoral industry development initiatives that are regionally based to assist small and medium size businesses to realise their full potential. This involves establishing groups or networks of small and medium size businesses working together and sharing the costs and benefits of information sharing, research, marketing, technology development, patenting and contracting, connections into available finance, skills formation and training."

ACTU support for these forms of collaborative industrial organisation is also evident in the ACTU Congress September 1991 Charter for Jobs Policy.

"Establish networking of small and medium sized companies with access to information, training, and innovative research including the promotion of new product incubator networks"

"Implement development plans in export potential sectors by networking approaches such as R&D, labour market development, marketing and information...."

Much of the encouragement for promoting these small firm inter-firm networks has come from the former assistant secretary of the ACTU, Laurie Carmichael.

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57 Australian Congress of Trade Unions. ACTU Proposals re Employment Growth and Industry Development. ACTU, Melbourne. 28th October 1991
Carmichael led the Australian Manufacturing Council mission to Emilia–Romagna and has been actively promoting inter-firm networking throughout Australia.58

Promotion of inter-firm networking has also come from other parts of the Australian trade union movement. For example, Sue McCreadie, National Research Officer for the textile clothing and footwear (TCF) unions has indicated support for inter-firm networking: "TCF unions are particularly interested in the proposals on enterprise networking."59 The Third Italy model is viewed as significant because it has maintained, and even increased, the number of workers in TCF industries in Emilia–Romagna. Interestingly Sue McCreadie also explicitly states union support for post-Fordism – "The unions preferred a strategy that might be called 'post-Fordist'.60

The networking seminar series organised by the Australian Manufacturing Council also provided an opportunity for unions to show their support for inter-firm collaboration. All the state based Labour Councils were represented as well as the Australian Glass Workers' Union, the Metal and Engineering Workers' Union, the Vehicle Builders Employees' Federation of Australia, the Clothing and Allied Trades Union, and the National Union of Workers.61

It is clear that for sections of the trade union movement the promotion of inter-firm networking and collaboration is based explicitly on the experience of Emilia–Romagna, and the flexible specialisation thesis. The strategy of the trade union movement toward inter-firm collaboration could accurately be described as labour reformist. The localism of yeoman democracy and associational socialism is absent

60 Ibid.
from the Australian trade union perspective (see Chapter Two).

**Trade and Employer Associations**

Inter-firm networking is an attractive proposition for the main manufacturing employer associations in Australia because these organisations are given a central role as brokers in assisting the development of networks, and networks are firm driven. The Australian Chamber of Manufacturers (NSW) (now the NSW Chamber of Manufacturers again) have embarked on a project to establish regional inter-firm networks in Wollongong and the Hunter recognising that localisation or geographic proximity has an important role in strengthening interaction and collaboration. The Wollongong initiative involves metal fabrication firms collectively marketing the capacity of the region through joint brochures and other promotional activities. The Hunter project involves a wider variety of firms and seeks to attract business opportunities and contracts that the firms could not secure individually. Another dimension of the Chamber's project involves the establishment of a food processing network. There has been a commonly held view that the food processing industry has been very atomised and lacked intra-industry collaboration. Yet it is too early to draw conclusions about how successful these networking initiatives will be. The Chamber is also planning to establish other pilot inter-firm networks.62

The MTIA has also been active in the promotion of inter-firm networks. One initiative has been the clustering of small companies in the machine tool industry connected to the CAMTROM Division (Council of Australian Machine Tool and Robotic Manufacturers) of the MTIA in Victoria.63

**Federal Government Agencies**

62 Personal communication with John Murgatroyd. 29 April 1991 and Illawarra Mercury. 22 November 1990
63 Taskforce for the Commercialisation of Research. *op. cit.* p. 19
Recently a spate of short articles have come forth from the Federal Department of Industry, Technology and Commerce (DITAC) claiming the benefits of networking and success of the Third Italy. Yet most of these articles derive from the National Industry Extension Service (NIES) and the Australian Manufacturing Council activities which are quasi-autonomous sections of DITAC (see below).

Other evidence of the support for small firm networks can be found in the Prime Ministers 12 March 1991 Industry Policy Statement.

"There is currently a strong interest in the business sector in developing networking strategies for improving competitiveness. The Government is working closely with industry to identify ways by which small firms can achieve critical mass in export markets and other activities through inter-firm collaboration." 65

The Industry Statement announced minor additional funding to be made available under the NIES pilot programme scheme for further development of networks. However support for small firm networks was only a minor part of the statement.

Further evidence of the Federal government's interest in the Third Italy model is indicated by the visit of the then Australian Minister for Science and Technology, Mr Simon Crean, to Bologna, Emilia-Romagna on 23 November 1990. Mr Crean met with a prominent commentator on Italian industrial districts, Claudio Tollimelli, and discussed the role of inter-firm co-operation in technology transfer and the Third Italy model. 66

65 Department of the Prime Minister and Cabinet. "Building a Competitive Australia": Statements by Prime Minister, Bob Hawke. Treasurer, Paul Keating and Industry Minister. John Button. AGPS, Canberra, 1991, p.5.60
66 Personal Communication. Claudio Tollimelli. 6 December 1990
The Minister for Small Business and Customs, David Beddall has also been very active in the promotion of inter-firm networks. 67

**The Australian Manufacturing Council**

The Australian Manufacturing Council is a tripartite forum and advisory body to the Federal Minister of Industry, Technology and Commerce. The AMC have been at the forefront of the promotion of inter-firm collaboration among Australian manufacturing firms. The research activities and reports by the AMC on networking have already been discussed in this chapter. The key point to reiterate is that the AMC view of networking has been explicitly informed by the flexible specialisation thesis, the work of Michael Porter, and the much cited example of the Third Italy.

Recently the Australian Manufacturing Council formed a networking steering committee. This committee comprises employer, union and government representatives and aims to establish pilot networks. The AMC are now keen to move beyond the reports, and overseas missions and actually engage in the facilitating of the formation of networks. The AMC are also planning to develop a 'how to' manual for networking. 68

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National Industry Extension Service

The National Industry Extension Service (NIES), a joint State–Federal service, has an enterprise network programme which has established more than six pilot networks. It is hoped that over the next few years these pilot projects will have a demonstration effect to encourage the formation of further collaborative ventures, and identify what are the critical factors for successful inter–firm collaboration among small and medium sized Australian manufacturing firms. Several of the NIES demonstration networks are listed below.

NIES in NSW have established an Advanced Manufacturing Technology (AMT) user group. The user group enables firms considering purchasing AMT to benefit from collaborating in system benchmarking, selection and training. This form of collaboration has been considered successful because it does not require a major cultural shift by Australian firms – The initial commitment by participating firms is low, and the user group can be gradually developed as trust is established.

Another NIES pilot project is the Darling Downs Agricultural Machinery Network in Tawuomba. This network involves ten local firms in the production and marketing of a comprehensive range of agricultural machinery. Some of the members are competitors and there have been problems getting them to work together. The aim of this network is particularly to achieve economies of scale in marketing. One other NIES pilot project involves a group of gemstone and jewellery firms. The aim of this network is to market their products in South–East Asia.

It remains to be seen how successful these, and other pilot projects will be. Yet even at this early stage there has been some informal suggestion that several of the pilot

programmes have not been successful because the manufacturing firms have not always been willing to collaborate.

State agencies

The NSW Department of State Development (formerly Business and Consumer Affairs) has supported the formation of inter-firm networks through the NSW based National Industry Extension service and other branches of the Department. Interestingly, the view of several officers of the Department is that the Third Italy model of industrial districts is inappropriate for NSW. It is suggested that the Third Italy model is based on hundreds of years of industrial culture which is not transferable to other national contexts. Instead the Danish experience is considered a more appropriate as to how Australian government policies can assist in the formation of inter-firm networks.

One worthwhile observation about the structure of NSW industry is that the collaboration has been strong in the agricultural and service sectors in NSW through co-operatives—there are 1820 co-operatives in NSW. Co-operatives are a formal and legally recognised network. Yet paradoxically inter-firm collaboration has been particularly weak in the manufacturing sector.

Other states have also been involved in the promotion of inter-firm collaboration.

Before proceeding to outline how the Australian political and economic context has supported the promotion of inter-firm networking as a policy initiative, it is worthwhile briefly flagging several policy questions which require attention to

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70 Personal communication with Terry Saillard, Senior Development Officer, and Peter Stamford, Chief Development Officer. NSW Department of State Development, formerly NSW Business and Consumer Affairs
effectively foster inter–firm collaboration in Australia.

Firstly, there is an issue of how significant spatial agglomeration is, in fostering inter–firm collaboration. All the work of Porter, Piore and Sabel, Scott and others stress the need for geographical proximity in developing inter–firm collaboration. An important question is to what extent can information technologies replace this apparent precondition of geographical proximity? When is electronic localisation sufficient? This is an important question for Australia given the dispersed nature of many different industries. A second important question is what is the role of government in supporting and developing inter–firm collaboration? What tangible and intangible infrastructure should be provided by the state? What preconditions, such as trust, cannot be constructed through government industry policies? These issues require further consideration in Federal and state government departments. Thirdly, there is an issue of understanding the Australian economic and political culture and assessing what forms of inter–firm collaboration might have the best chances of succeeding. How might trust be fostered? In Australian satisfactory answers to these three questions have yet to be found.

THE AUSTRALIAN ECONOMIC AND POLITICAL CONTEXT

The apparent congruence of the views of the organisations described above cannot be understood as a chance event. Instead the enthusiasm with which many organisations have adopted the ideas of inter–firm networking and industrial districts reflects the current Australian political and economic environment. The support for inter–firm networking has emerged against a backdrop of the continued ideological dominance of economic rationalism, and the absence of any real signs of substantial improvement in the competitiveness of Australian manufacturing. In this ideological and economic context the promotion of networking is an attractive industry policy. This argument is elaborated below.
Part of the explanation for the popularity of inter-firm networking in Australian industry policy circles is that networking is seen to assist in overcoming problems which plague Australian manufacturing such as lack of economies of scale, and lack of technical and managerial expertise. Inter-firm networking therefore is seen to contribute to improving the competitiveness and export orientation of Australian manufacturing. Networking is also attractive because it has received considerable attention overseas, and has been promoted by such notable industry policy pundits as Michael Porter, Michael Piore and Charles Sabel, and international organisations such as the OECD.

There is also a further reason for the popularity of inter-firm networking which is less obvious. Australian industry policies through the late eighties have been dramatically shaped by the dominance of economic rationalism in Canberra, and failure of the Victorian Economic Development Corporation (VEDC). Both these factors have contributed to a climate of non-interventionism with respect to industry policy. This dominance of non-interventionism is reflected in the firmly entrenched rhetoric that 'governments cannot and should not be 'picking winners".72

Inter-firm networking, however, can be supported within this policy and ideological environment. Networks are seen as primarily firm driven and the government only acts as a 'broker' to overcome information gaps and improve the market mechanism. Furthermore, government support to facilitate inter-firm networking only involves very small costs, and therefore can be viewed as fiscally responsible industry development, and not as 'picking winners' or pork barrelling. Yet inter-firm

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72 'Thou shall not pick winners' has become a commandment of the current Commonwealth and state governments reflecting both a religious (rather than analytical) approach to industry policy, and major fiscal restraints. A substantial difficulty with the religious nature of this discourse is that it stifles real debate. Any discussion of the role of state in industry development in Australia is castigated and renounced as the heresy of attempting to 'pick winners', even though what 'picking winners' actually involves is rarely, if ever, clarified.
networking can also be supported from a more interventionist standpoint. Inter-firm collaboration implicitly challenges the primacy of market-based exchange – collaboration is predicated on trust and non-market factors. Also, from overseas experience, there is a strong argument that the development of public infrastructure and support small firms is an essential ingredient in the development of inter-firm networks.

"Networking is an important but complex middle ground of policy in that it seeks a more interactive role with firms, and rejects the two extreme cases of total reliance on the market on the one hand, and the proliferation of subsidies and 'hand outs' on the other." 73

These possible dual interpretations of networking are important in explaining the popularity of the idea. Inter-firm networking is acceptable to non-interventionists, and it is perhaps about the best that many interventionists think that they can hope for in the current environment. 74 A further dimension to these possible dual interpretation of networks is that they can be viewed either as a group of entrepreneurs or as a case of collective action depending on one's ideological stance.

74 Given these dual interpretations of inter-firm networking, I would have suspected that the theme of inter-firm networking would have been more prominent in the Prime Minister's 12 March 1991 Industry Statement. Support for inter-firm networking would have both appeased the ACTU calls for a more interventionist industry policy, while allowing the Federal government to proceed with its main agenda of further cuts in tariffs and accelerated microeconomic reform. In short, programmes to facilitate the formation of inter-firm networks could potentially have offered a low price 'sweetener' to sections of the union movement and manufacturers, much lower in price than say, the Advanced Manufacturing Technology Demonstration Programme. Networking could have been a 'Claytons' interventionism in what was largely a 'Claytons' industry policy.

However it was suggested to me that input to the March 12 statement was completed towards the end of 1990, before DITAC had started pursuing networking with any real vigour. Furthermore, it was also pointed out that while it may have been politically sensible to promote networks, the processes of policy formation are not always governed by clear political analysis. Instead often ad hoc and confusing bureaucratic processes are the parents of policy. It is a mistake to consider the state as homogeneous, rational and omnipotent. (Personal Communication, DITAC, Small Business Unit- May 1991)
EXAMPLES OF INTER-FIRM COLLABORATION IN AUSTRALIA

One of the ironies of the inter-firm networking policy agenda in Australia is that there is little evidence of successful collaboration amongst Australian manufacturing firms. While co-operatives in the agricultural sector have a long history in Australia, and franchising is dramatically increasing in the service sector, extensive inter-firm collaboration among manufacturers has not taken hold. This is a riddle for proponents of inter-firm collaboration between manufacturing firms in Australia. There are, however, several (much cited) success stories of Australian firms engaged in collaboration, some of which are detailed below. These examples are organised into several different categories including research and development consortia, industry associations, joint ventures, production networks, clusters, and information/service networks. The Technical Computing and Graphics cluster is another example detailed earlier in this chapter.

Two of the most prominent examples of firms engaged in co-operative research are the Australian Mineral Industries Research Association (AMIRA) and the Australian Membrane and Biotechnology Research Institute (AMBRI). AMIRA is a research association of about 160 members which initiates and co-ordinates jointly sponsored R&D contracts on behalf of its members and thereby achieve economies of scale in R&D. The Association's contracting spending has grown at 18% per year and in 1990 was worth $28 million.

AMBRI is a pre-competitive research and development consortium of four leading technology firms, AWA microelectronics, Biocolone, Memtec and Nucleus firms, together with CSIRO staff from the Divisions of Food Processing, Biotechnology,

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75 International strategic alliances involving Australian firms are not considered in this thesis. For a fuller account of the success of international strategic alliances, see Scott-Kemmis, D., Darling, T., Johnston, R., Collyer, F., Cliff, C., Strategic Alliances in the Internationalisation of Australian Industry, AGPS, Canberra, 1990
76 Taskforce for the Commercialisation of Research. op. cit., p. 19
Applied Physics and Chemicals and Polymers. The consortium was formed in 1988 to conduct a $3 million research programme on the development of biosensors. AMBRI considers that technical success could yield the foundation of an export oriented industry worth in excess of $100 million.

There are several examples of industry-based service networks including the Australian Pump Makers Association, Australian Die Casting Association, Australian Electronic Development Corporation and the Australian Furniture Research and Development Institute. These organisations provide technical advice and training support to member firms and liaise and lobby government on behalf of the industry. These organisations are similar to the industry associations which are central to the Third Italy model.77

Joint ventures are also presented as an example of a particular form of inter-firm collaboration. One of the frequently cited examples of a joint venture in Australia is the North-West Project involving Woodside Petroleum, BHP Petroleum, Shell Development, BP Development, Japan Australia LNG, and a subsidiary of Chevron Corporation. The other well known joint venture is the Australian Marine Engineering Corporation (AMECON) in the shipbuilding industry.78

With respect to production networks, Country Road is cited as an example of a production network with a leading firm. Country Road is a fashion designer and retailer which sub-contracts manufacturing to about thirty clothing firms.79 Another example is Black and Decker. Black and Decker provide the design, layout and product engineering requirements of Chief Kitchenware who are contract

78 City of Melbourne, Collaboration between firms: Collective Advantage or Competitive Threat?, Working Paper 15, Part II, City of Melbourne, Melbourne, June 1989
79 Bureau of Industry Economics, Networking- A Third Form of Organisation, op. cit., p. 23
manufacturers of kitchen products. 80

The Global Challenge identifies a number of industry clusters including marine engineering and shipbuilding in Fremantle and the scientific and medical equipment industry in Melbourne. 81 Yet as the BIE study indicates, fully fledged clusters are difficult to locate in Australia.

An example of a service network is the National Spinning Industry Training Centre, or Texskill, which is a specialist training facility utilising state-of-the-art technology. The Centre involves the Federal government, industry and the Melbourne College of Textiles. 82

INTER-FIRM NETWORKING, THE FLEXIBLE SPECIALISATION THESIS AND THE THIRD ITALY IN AUSTRALIA - A CRITIQUE

From this rather lengthy review of the state of Australian research and policy initiatives, it is clear that the flexible specialisation thesis and the Third Italy model have been prominent in shaping the views and policies of the Australian trade unions and tripartite bodies. My concern is that the flexible specialisation thesis and the Third Italy model have been imported and adopted in Australia in an uncritical fashion, both politically and intellectually. The extensive critique developed of the flexible specialisation thesis, developed in Chapter Two outlined a wide range of criticisms of the flexible specialisation thesis, and also provided a less than optimistic account of the Third Italy and other industrial districts. Yet these important criticisms appear not to have filtered through, to any great extent, to the mainstream inter-firm networking debate in Australia. What follows are a number of criticisms of the promotion of Australian inter-firm networking which derive from the flexible specialisation thesis

80 Burke, J., and Cox, I., "Italian Fashion", op. cit., p. 19
81 Pappas, Carter. Evans and Koop/Telesis, op. cit., p.173
82 DIMAID Victoria, "Networking and Industry Development", op. cit., p.113
and the Third Italy, small firm industrial district model. These criticisms restate some of the arguments made in Chapter Two, but also raise some specific issues about the adoption of these ideas in the Australia context.

**The Third Italy Through Rose Coloured Australian Glasses**

The vision of the Third Italy constructed and disseminated by government agencies, researchers and trade unions has been very attractive, and much in line with its portrayal by Piore and Sabel. Most of the Australian literature has ignored the intense debate about the sources of competitive advantage of the Third Italy which was reviewed in Chapter Two. In the few instances where critical interpretations of the Third Italy model of industrialisation are acknowledged, they are either completely dismissed or conveniently forgotten. The AMC Networking discussion paper, for example, makes a very brief note of the debate, but does not pursue the issue. 83 Similarly, Mathews and Weiss in their praise for textile industry in the Third Italy dismiss any criticisms that the success of the 'Prato model' might be based on low wages and conditions, the black economy, protection or government subsidisation.

"Such claims turn out to be based either on a misreading of the evidence, or a hostility to the very existence of small-firm districts that do not conform to the dominant model of large-scale industrialisation, as shared by many socialist-sympathising and conservative analysts alike." 84

Quite simply any critical perspective of the small firm Third Italy model has been absent from the Australian agenda. 85 The marginalisation of such criticisms is particularly dangerous when there is such a strong effort to promote the Third Italy model in Australia.

83 Burke, J., Networking, op. cit. p. 3
84 Mathews, J., and Weiss, L., op. cit., p. 25
85 Admittedly, the less attractive features of the Third Italy have been identified by some Australian academics. For example, see Stilwell, F., "Regional Economic Policy and Local Enterprise", Journal of Australian Political Economy, No. 25, 1989, pp. 84-85) Yet such work either has not focussed on the issue of inter-firm collaboration, or has been marginal to the debate in Australia.
From Chapter Two it is evident that there continues to be conflicting opinions about the sources of competitive advantage of the Third Italy. However unlike Mathews and Weiss, and several others, I am remain unconvincing about the virtues of the Third Italy. Yet what Mathews, Weiss and I would agree on is that the communist dominated local councils and trade unions have an important role to play in regulating the working, social and economic environment in the industrial districts and ensuring that small firms do not adopt cost minimisation strategies. A comparison between the 'Red' (PCI) and 'White' (Catholic) areas of the Third Italy supports this view. In 'White' areas where there is an absence of strong unions and levels of unionisation are not as high, and there is evidence of poorer working and living conditions.86

A study commissioned by the Italian General Confederation of Labour (CGIL) based on a comparison of three industrial districts, 'Red' Bologna in Emilia-Romagna, 'White' Bassa Veronese in Veneto and Barletta in Southern Italy on the Adriatic coast indicated substantial variation in working conditions between these industrial districts. For example, workers in the 'White' and southern industrial districts workers were in a weaker bargaining position compared with workers in Bologna, and as a result there was evidence of extensive over-time, use of under-the-table payments, lower wages and black labour in Bassa-Veronese and Barletta.87 The comparison between industrial districts also highlighted that the Southern industrial district was worse with respect to working conditions than either the 'Red' or the 'White' regions of the Third Italy. The study concluded that;

"To a large extent, working conditions in a particular district reflect the local political and social context. In regions where unions are traditionally strong, such as Lombardy, Emilia and Tuscany, working conditions are markedly better than in other regions."88

88 Ricoveri, G., Cilona, O., and Focker, F., op. cit., p. 62
Another study comparing 'Red' and 'White' industrial districts confirmed substantial differences in levels of unionisation and varying degrees of the regulation of wages and working conditions. In the 'Red' industrial district, Valdelsa in Tuscany, 80% of workers are members of the Communist and Socialist union (CGIL), while 48% of workers in Bassano were unionised belonging mainly to the 'White' union (CSIL). Wages and working conditions were negotiated in more cases in Valdelsa and were regulated more thoroughly. This is not to suggest that the 'Red' areas are necessarily free of exploitative work practices or a black economy, just that the 'White' areas are worse, and the Southern areas are even worse again. These examples indicate the vital role of the local political culture in the micro-regulation of the industrial districts. To this end both the 'White' and 'Red' areas exhibit far greater regulation of working conditions and wages than the Southern regional industrial districts. In the 'White' areas the family, and the Catholic church play a role in the local regulation, but in the Southern industrial districts no such processes are entrenched.

Yet the Australian policy discussion about the industrial success of the Third Italy is derived almost exclusively from 'Red' Emilia–Romagna and Tuscany. This is no doubt comforting for some trade unionists and sections of the political Left. But is it reasonable to expect that future small firm networks in Australia would be regulated by the same type of political forces as those in 'Red' Emilia–Romagna? Or would future Australian industrial districts be pink or white in colour, or even worse lacking any local political culture? If so, what would be the consequences? These vital questions, however, have not surfaced in the Australian inter-firm networking debate because there is no acknowledgement of the less attractive features of the Third Italy.

90 The region of Marche is also part of the 'Red Belt' of the Third Italy, and Michael Blim's study of the shoe industry indicates extensive exploitation and black labour in this region. (Blim, M., Made in Italy, op. cit.)
industrial districts, and therefore no recognition of the importance of political forces regulating the districts. The dominance of the optimistic vision of the Third Italy has meant that trade unionists and others have not had to address the question of whether, the current Australian political climate (and the likely election of an ultra-conservative Commonwealth government in the near future) would prevent the development of the necessary micro-regulation of small firm networks. The Italian Communist Party (PCI) were forced to address this same issue.

"(I)f post-war governments had championed neo-liberal strategies, the PCI would very likely have conceived decentralised production as inimical to labour's interests and, in all likelihood, neither Italy's small firm "miracle" nor extensive economic devolution would have seen the light of day. Fortunately for Italy, then, the individualistic tenets of the radical right find little social resonance." 91

However in Australia, Mathews, Weiss, the Australian Manufacturing Council, and the ACTU are advocating the adoption of small firm industrial districts without any real consideration of the Australian political forces and culture which might give rise to a more exploitative and oppressive system of small firm networks. Mathews states that trade unions have an important role to play to prevent small firms backsliding into cost-minimisation strategies. 92 This is a truism. What is more important and less clear is whether Australian trade unions currently have the strength to prevent small firm networks becoming 'sweatshops', and whether trade unions at this time, if ever, should be actively encouraging small firm industrialisation? This is particularly the case when the protection of working conditions and wages by national awards is being eroded by the shift to enterprise bargaining. Another important question is whether the individualism of Australian small business, and its hostility to trade unions and the public sector, prevent the building of Third Italy style industrial districts.

Instead of uncritically accepting and reproducing the idealised Emilia–Romagna

91 Wiess, L., "Regional Economic Policy in Italy", op. cit., p.124
92 Mathews, J., "Towards a new model of industry development in Australia", op. cit., p.15
model in Australia, it may be more useful for trade unionists and policy-makers to consider a less attractive and less fashionable Italian industrial district, say the shoe industry in Marche, and ask whether the political and trade union forces exist to prevent such an outcome occurring in Australia. Such a process might be a sobering experience for advocates of small firm networks and industrial districts.

It is also interesting to contrast the idealised vision of the industrial districts of Emilia-Romagna with the picture of Australian small business provided by David Beddall, chairperson of the recent small business Parliamentary inquiry.

"The small business sector tends to have lower qualification requirements, less unionisation and lower pay. This can provide greater labour market access to groups which are under-represented or excluded for other sources of employment. Growing female participation rates and an increasing preference for part-time employment will boost the supply of labour to small business. On the demand side, the growth of sub-contracting will provide more employment opportunities in small business. Evidence was given that sub-contracting, once confined to the building and construction sector, may be increasing rapidly in Australia and overseas as large firms reduce overheads and privatisation of public sector activities takes place." 93

It is worth pondering whether Beddall's description of small business in Australia indicates a foundation for a system of progressive, innovative and internationally competitive small firm industrial districts, or instead, whether small firm industrialisation opens the way for new forms of exploitation. This question demands attention.

In addition the idealised Emilia-Romagna model has been promoted in Australia with little recognition of the numerous cultural, industrial, and political preconditions that were required for the establishment of Emilia-Romagna's industrial districts. From the account of the industrialisation of Emilia-Romagna provided in Chapter Two, it is evident that the Third Italy industrial districts are grounded in hundreds of years of

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industrial history and culture. For example, the ceramics district of Sassunolo has been a proto-industrial district since the 1500s and the textiles industry in Prato has a history of six hundred years. The absence of these foundations suggests that Australia may lack the historical and cultural preconditions for establishing Italian style industrial districts. This does not suggest that Australia cannot learn anything from Italy, rather the Third Italy can only provide very general lessons. One such lesson that can be learnt from the Third Italy is that local and regional policies and a strong local government can play an important role in industry development.

Yet for more specific directions and lessons, the Danish experience may be more relevant to Australia because Denmark, like Australia, lacks many of the background factors which assisted in the formation of the Italian industrial districts. The challenge for the Danish government has been to develop policies and programmes to substitute for the hundreds of years of Italian industrial history and culture. A central question for the Danish government has been what elements of inter-firm networks and industrial districts can and cannot be created through government policy and action? These same issues confronts the Australian government's attempts to develop inter-firm networks.

A further concern with the Australian debate is that it is not acknowledged that the industrial districts of Emilia-Romagna are unique within the Third Italy. The other Italian industrial districts outside Emilia-Romagna are craft-based and generally utilise traditional tools and techniques, not computer based technologies. The technology based manufacturing industries utilising flexible manufacturing systems are very much confined to Emilia-Romagna. The point here is that the industrial districts of Emilia-Romagna are not representative of the larger Third Italy region.

94 This same issue confronts governments attempting to develop Porter's diamonds of national competitiveness - if an industry has three points on the diamond can government industry policies substitute for the fourth point of the diamond? The answer is no for Porter, but it is a significant question for a more interventionist policy stance. (Porter, M., The Competitive Advantage of Nations, op. cit.)
The problem that arises is that image of high-tech industrial districts is projected well beyond what is actually the case.

**The Flexible Specialisation Thesis and Misguided Industry Policies**

As has already been demonstrated in Chapter Two, the flexible specialisation thesis is based on highly questionable assumptions about market structures, production systems and technologies. Yet the flexible specialisation thesis continues to inform the inter-firm networking policies of the ACTU, TCF unions, the Australian Manufacturing Council, the City of Melbourne and others. Below I demonstrate that the flexible specialisation framework is a very poor guide for developing industry policies for these organisations, and for Australia.

The flexible specialisation thesis argues that the paradigms of mass production and flexible specialisation are mirror images. The following table summarises these differences. 95

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<th>Mass Production</th>
<th>Flexible specialisation</th>
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<td>Internal Economies of scale</td>
<td>Economics of scope</td>
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<td>Product Standardisation</td>
<td>Product Differentiation</td>
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<td>Unskilled labour</td>
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<td>Dedicated technology</td>
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<tr>
<td>Resource driven</td>
<td>Demand driven</td>
</tr>
<tr>
<td>Large inventory</td>
<td>No inventory</td>
</tr>
<tr>
<td>Vertical integration</td>
<td>Small firm networks</td>
</tr>
<tr>
<td>Cost minimisation</td>
<td>Quality production</td>
</tr>
</tbody>
</table>

Hirst and Zeitlin and several others would probably object to this characterisation of flexible specialisation. The version of flexible specialisation that they develop is undoubtedly more sophisticated and recognises, for example, the continuing role for product standardisation.\textsuperscript{96} Yet such academic subtleties are lost as the flexible specialisation thesis is translated into the policy and political arena. This is how the flexible specialisation thesis is popularised.

This thinking is clearly reflected in the working paper of the Economic and Employment Division of the City of Melbourne.

"Market segmentation with shorter product life cycles, smaller unit batches and greater product offerings, has presented small firms with the opportunity to gain a competitive advantage over large, vertically integrated concerns with their inflexibility and bureaucratic structures."\textsuperscript{97}

There are a number of significant problems with developing industry policies based on this framework. Firstly, the overburden dualism, flexible specialisation and mass production diminishes the continuing importance of internal economies of scale, the need for some production standardisation and vertical integration. The flexible specialisation thesis suggests that in crossing the 'industrial divide' to the era of flexible specialisation, scale, vertical integration and standardisation are unimportant and merely a historical remnant of an old industrial paradigm – mass production.\textsuperscript{98}

The question of economies of scale only arises in considering external economies of scale in areas of administration, marketing and technical intelligence generated through inter-firm networks, such as trade association.\textsuperscript{99} The need for internal

\textsuperscript{96} Hirst, P., and Zeitlin, J., Flexible specialisation versus post-Fordism, \textit{op. cit.}, p. 6

\textsuperscript{97} City of Melbourne, \textit{Collaboration between firms: Collective Advantage or Competitive Threat?}, Working Paper 15, Part I, City of Melbourne, Melbourne, June 1989, p. 56

\textsuperscript{98} This problem of periodising history and overly emphasising the differences rather than the continuities is a failure of much recent social theory which presents the old and the new as binary opposites. For example, modernity - post-modernity, industrial-post-industrialism and Fordism and post-Fordism (see Harvey, D., \textit{The Condition of Post-Modernity}, Blackwell, Oxford, 1990. p. 174) For more on the problems with theorising social and industrial change as revolutionary or transformism, see Miles, I., Rush, H., Turner, K., Bessant, J., \textit{Information Horizons}, Edward Elgar, Aldershot, 1988

\textsuperscript{99} Brusco, S., "The Emilian Model", \textit{op. cit.}
economies of scale in production are viewed as far less relevant to the new era.

Secondly, the flexible specialisation thesis encourages the view that small firms are inherently flexible and large firms are inflexible and bureaucratic. This is clearly not the case. A feature of Japanese industrial production is very large and flexible firms. Indeed in general new management techniques, organisational structures, and information technologies are making large transnational corporations more flexible. This is what Sabel describes as the decentralisation corporation. It is surely fanciful to suppose that a few small firms collaborating will necessarily be able to compete with decentralised (and for that matter centralised) transnational corporations as is suggested by the previous quote from the City of Melbourne.

A third criticism is that any advantages to small firms due to emerging flexible technologies and fragmenting markets may be insignificant relative in comparison with the new found capabilities of large firms. The actual shift will depend entirely on the structure and economics of specific industries. For example, the flexible specialisation thesis supports strategies aimed at local niche markets. Yet the problem with such strategies is that the internationalisation of markets means that these niche markets are internationalised as well, and flexible mass producers are increasing likely to target these niche markets.

"The celebration of specialist niche markets as the basis for the flexible small firm, on the hand, has proved somewhat premature. The relentless competitive edge of the large flexible retailers illustrates the dangers of fetishising 'economies of scope' as against 'economies of scale' as a new paradigm of growth." 102

How well small firms compete in niche markets will depend largely on the economies

of production in specific industries. Yet the flexible specialisation thesis presents a
general or universal production strategy. There is little or no consideration of the
specific nature of national economies or industry sectors. There is a clear need to take
far more account of national and sectoral conditions. 103

A fourth criticism is that the flexible specialisation thesis ignores the significant
capital costs involved in purchasing flexible computer based manufacturing
technologies. 104 This puts such technologies outside the scope of many small firms,
and prevents such firms from entering the world of flexible specialisation. 105 The
availability of capital for small Australian manufacturing firms is also a further
probable barrier to entry in this regard.

A further concern with applying the flexible specialisation thesis regards the
possibility of differing definitions of what small firms are between nations. The OECD
currently has no definition of a small firm. 106 As a result the idea of a small firm
means different things in different national contexts. For example, in Germany a small
manufacturing firms is taken to be an enterprises with fewer than five hundred
employees. 107 Whereas the Australian Bureau of Statistics (ABS) definition of a
small manufacturing firms is a firm with less than one hundred employees. Clearly,
such differences suggest the need for caution in translating small firm strategies
between nations.

In short, as was demonstrated in Chapter Two, the flexible specialisation thesis over

103 For an example of such an approach see Katzenstein, P., Industry and Politics in West Germany:
Toward the Third Republic, Cornell University Press, Ithaca, 1989
104 Williams, K., Cutler, J., Williams, J., and Haslam, C., "The End of Mass Production- A Review of
the Second Industrial Divide", Economy and Society, Vol. 16, No. 3, August 1987
105 Schonberger, R., "Frugal Manufacturing", Harvard Business Review, Vol. 87, September/October,
1987, pp. 95-100
106 Personal communication, Mark Hopkins, Small Business Section. Australian Bureau of Statistics.
The OECD are holding a meeting to develop a definition in March 1992.
exaggerates claims about the changes in production, market structures and technology. As a result the theory is of limited assistance in the development of practical industry policies. The concept of flexible specialisation does however serve as a useful foil to an uncritical belief in the imperative of industrial giantism. Yet this is hardly sufficient for the flexible specialisation thesis to be considered a useful guide for industry policy in Australia.

THE DISCOURSE OF 'NETWORKING' AND CONSENSUS POLITICS

A further problem with the inter-firm networking debate in Australia relates to the dominance of the terminology of 'networking', 'inter-firm networks' or 'enterprise networks'. This terminology or discourse is not as prominent in the main stream flexible specialisation or other post-Fordist literature, but has been adopted by the supporters of flexible specialisation in Australia. A significant consequence of adopting the term 'networking', as I demonstrate below, is that the concept of industrial organisation is depoliticised. 'Networking' or 'networks' is an over-generalised metaphor which is analytically underspecified, but serves to legitimate all forms of inter-firm linkage through blurring the distinction between organisational forms. (See Chapter One for a typology of inter-firm relationships.).

Several commentators have pointed to the fact that the terminology of 'networking' obscures the ideological and political aspects of industrial organisation.

"Most seriously, the concept of 'network' lends itself to silence on the question of relations of power and control." 109

108 For example see the following Australian Manufacturing Council publications Burke, J., Networking, op. cit., and Mathews, J., and Weiss, L., op. cit., Also note that the national seminar series organised by the Australia Manufacturing Council, where Bruce Herman provided the keynote address was titled "Networking our way to Competitiveness Seminar Series' April 22 - May 3, 1991 Interestingly, following the seminar, in conversation Herman expressed his dislike for the term 'networking' but accepted it was the dominant discourse in Australia.

"One interesting aspect of the analytical concept of network is that it has very little ideological load."\textsuperscript{110}

"In particular there is a move away from what might be termed 'power-based' relationships in which there is some kind of hierarchical dependence and towards more of a network model in which there is a sense of mutual development within a partnership."\textsuperscript{111}

The argument here is that the terminology of networks suggests an impression of harmony, collaboration and equity, which is possibly false.

"It is inaccurate, however, to characterise networks solely in terms of collaboration and concord. Each point of contact in a network can be a source of conflict as well as harmony. Recall that the term alliance comes from the literature of international relations where it describes relations among nation states in an anarchic world. Networks also commonly involve aspects of dependency and particularism."\textsuperscript{112}

"The deverticalisation of large firms into networks of specialised firms may be the answer to this challenge. But this deepening of the social division of labour (that is, between economic units) does not entail a parallel de-concentration of capitalist control and hierarchy"\textsuperscript{113}

The adoption of the terminology 'networking' and the depoliticisation of industrial organisation may bring with it quite undesirable consequences.. The example outlined below highlights some of the problems of adopting the 'networking' to describe all types of inter-firm linkages.

The steel industry in Wollongong is dominated by BHP (Steel) which is surrounded by a number of small engineering and fabrication shops. These small firms are entirely dependent on BHP for maintenance and engineering contracts, and have in the past been fiercely independent in competing against each other to win BHP tenders which

\textsuperscript{111} Bessant, J., Fifth wave manufacturing, April 1990, Working draft, p. 284
\textsuperscript{112} Powell, W., "Neither market nor hierarchy: Network forms of organization", Research in Organizational Behaviour, Vol.12, 1990, p. 305
\textsuperscript{113} Leborgne, D., Lipietz, A., Ne Technologies, new modes of regulation: some spatial implications, CEPREMAP Paper, p. 20
are awarded purely on the basis of price. There has been no transfer of expertise or
technology between BHP and these small engineering and fabrication companies.114
The inter-firm relations between BHP and these small engineering shops are
essentially market-based, and there is little or no vertical collaboration, or trust. The
relationship could be accurately described as dependent sub-contracting. This is the
type of inter-firm linkage which is supposedly a characteristic of 'Fordist' industrial
organisation.

This dependent sub-contracting between BHP and these small engineering firms
cannot be usefully considered an example of networking. There is little or no evidence
of collaboration or a long term strategic relationship between BHP and the small
engineering firms. However a recent publication of the Department of Industry,
Technology and Commerce (DITAC) goes against this view and argues that;

"BHP is a typical example of this type of production network (vertical
organisation). Its many divisions serves as a market for some 18,000 supplier firms"115

Used in this manner the term 'network' has been reduced to an over-generalised
metaphor to describe all forms of linkage between firms including purely market
based exchange. This discourse of 'networks' obscures the asymmetries of power
between BHP and these engineering companies. The relationship of dependent sub-
contracting has kept these engineering companies "lean and hungry" (I would suggest
a euphemism for dependent) and prevented any diversification of the Illawarra's
industrial base.116 Indeed the OECD Technology / Economy Programme indicates
that this relationship between BHP and the small engineering firms is typical of the
relationships between large and small firms.

114 Personal communication with Chris Lloyd, formerly National Research Officer, Metal and
Engineering Workers Union, 14 January 1992
115 DITAC, "Networking the theme for the 1990s". Small Business in Australia. Australian
116 Rowbotham, J., "Enterprise Networks Draw New Strength from Numbers". Business Review
Weekly, August 16, 1991, p.76
"Industrial case studies suggest (however) that there is little evidence of "new partnerships" between large and small firms. The relationships are best described as being those of a subordinate role within the context of differentiated mass-production systems, which remain firmly in the hands of the large firms..."

Yet the over-conflated category 'networking' or 'inter-firm networks' fails to distinguish different forms of industrial organisation, and in the Australian context all linkages and forms of exchange are 'networks'.

In this example of 'networking' (dependent sub-contracting) there is a downward pressure on the wages and working conditions of workers in the small engineering and fabrication firms which is supposedly absent from the flexible specialisation thesis' concept of networks. The purely priced based competition between the small firms for BHP tenders places pressure to cut costs which in turn put pressure on wages and working conditions. In effect exploitative inter-firm relationships encourage and promote more exploitative intra-firm relationships involving lower wages and poorer working conditions. However in this example, the strength of trade unions and local political culture in Wollongong and the metal sector has ensured regulation of wages and working conditions and prevented these shops back-sliding in to sweatshop conditions. However this raises the question whether unions should support this form of networking, particularly in areas (sectorally and regionally) where trade unions are weaker, and where strong political institutions do not exist to regulate wages and working conditions. The policy of the ACTU (outlined above) would indicate that trade unions should support the formation of the networks, but the policy

117 OECD, Technology / Economy Programme. Chapter 5 - New Forms of Corporate Organisation. p.14
118 The bulk of debate about introducing Just-in-Time (JIT) techniques also ignores asymmetries of power and control between large and small organisations. The costs of JIT are generally borne by small dependent firms.
119 The flexible specialisation thesis argues that local political institutions have an important role to play to ensure that firms compete on the basis of innovation and quality, and not primarily on a the basis of costs. Piore, M., and Sabel, C.. The Second Industrial Divide. op. cit., pp. 268-272
120 Personal Communication. Chris Lloyd. 14 January 1992
fails to distinguish these different sorts of networks. It is clear from the example above, that inter-firm networks in general do not necessarily promote more benevolent firms and organisations. Some trade unionists have recognised these problems with the dominant conception of 'networks', and have stressed their opposition to forms of industrial organisation which are also based on the super-exploitation of labour. Yet while the benign language of 'networking' predominates, asymmetries of power and exploitation are obscured under the apparent neutrality of the term. There is a clear need to develop a set of concepts and terms to differentiate the types of inter-firm relationship, so that the dimensions of power and control are made very visible. This is taken up later in this chapter.

Interestingly, there has been a recent attempt by the small engineering and fabrication shops in the Illawarra to form a collaborative inter-firm network amongst themselves to break free of their dependency on BHP (Steel). The network, Illawarra Engineering Association (IEA) includes the general engineering company WGE Pty Ltd and the fabrication and machining companies Garnock Engineering, LJC Fabrications and Transtate Pty Ltd and aims to bid collectively for engineering contracts domestically, and then internationally.

It remains to be seen how this network of small engineering and maintenance workshops develops, and whether the individual companies will be able to act collectively and break their reliance on BHP. It is still unlikely that these small firms, even collectively, will have the technical capacity, managerial skills, the quality, and the general economies of scale to extend beyond contracting to the steel works, irrespective of what supporters of the flexible specialisation thesis would like to believe. I would argue that what is required to overcome these problems is the

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121 For example at the AMC Networking Seminar in Sydney. Mark Lennon from the NSW Labour Council identified types of 'networking' unacceptable to the trade union movement. AMC Networking Seminar, Rosehill 29 April 1991
122 Jackson, B., "Illawarra seeks a viable future", Engineers Australia, 1 November 1991, p. 32
participation of a medium sized, technology based engineering firm with international connections to increase the engineering capacity of the region. (The firm Asea Brown Boveri could potentially play this role. Yet then the question arises whether there would be technology transfer from these international firms to the smaller local companies.) There is also still some concern that there will not be sufficient collaboration to keep the small network together, given their history of fierce independence and cut-throat competition.123

An article in Australian Left Review provides a further example of the depoliticisation of inter-firm relationships.124 The article titled "Italian Fashion" presents a summary of Australian Manufacturing Council reports based on the flexible specialisation thesis, and details a number of 'successful' networks in Australia. Networking is presented as an organisational panacea for Australian manufacturing, and the politics of small firm industrialisation and sub-contracting are not even mentioned: "Italian Fashion" is, as Amin and Robins might say, "a good example of a technoinstitutionalist approach masquerading as political economy."125

Although, within the flexible specialisation thesis and post-Fordist literature more generally the term 'networking' is not so prominent, the depoliticisation of industrial organisation and inter-firm linkages is also a feature of post-Fordist theories. The analytic focus of both the flexible specialisation thesis and Scott's theory of the new industrial spaces do not highlight forms of exploitation that may arise from small firm industrial districts, and the language of 'industrial districts' and 'new industrial spaces' fosters an image of co-operative artisan production (yeoman democracy) – an account not sensitive to the unequal power relations between firms. Both these post-Fordist theories draw attention to new forms of industrial organisation with little consideration

123 Personal communication Chris Lloyd, formerly National Research Officer, Metal and Engineering Workers Union, 14 January 1992
124 Burke, J., and Cox, I., "Italian Fashion", op. cit., pp. 18-19
of distribution and exercise of power and inter- and intra-firm exploitation. As Graham argues post-Fordist theories, including flexible specialisation, give a wealth of insights into capitalist accumulation and manufacturing, but offer little knowledge of exploitation and class. Pollert draws the same conclusions and suggests that post-Fordist theories, like post-industrial theories before them, are based on assumptions of social equilibrium and convergence. In short it is not surprising that the discourse of 'networking' is commensurate with the post-Fordist theories of decentralised industrial organisation (and vice versa), both share a perspective which obscures the dimensions of power and control between firms. Not only does this failure to recognise the dimensions of power and control obscure the existence of, and potential for greater exploitation of some workers, but it also prevents the development of successful industries policies. As Harrison argues power and control;

"...are precisely the aspects of the relationship among firms and production units that we must understand if we are (a) to predict and (b) to use policy to help reshape the strategic trajectory of business in socially constructive and productive directions".

Understanding the political economy of industrial organisation and networks is a crucial element in developing effective industry policies. A technicist perspective does not help in this project.

**The Flexibility Debate and the Award Restructuring Process**

This depoliticisation of industrial organisation and discourse of 'networking' has a very clear parallel with another area of post-Fordist debate. In the realm of industrial relations and labour process restructuring, the term 'flexibility' has emerged as the

126 Ibid.
129 Harrison, B., "Concentration without Centralization: The Changing Morphology of the Small Firm Industrial Districts of the Third Italy", p. 22
ideal in a similar manner to 'inter-firm networking'. With brief reference to the Australian award restructuring debate it is possible to demonstrate the damaging consequences of the highly amorphous notion of 'flexibility'. 130

Award restructuring, which has been a major focus of industrial relations negotiations through the late eighties in Australia seeks to develop new industrial or award classifications and training systems that provide a career path for workers, encourage skill acquisition, increase functional flexibility and multiskilling, and reduce direct supervision of workers. 131

The image of a post-Fordist era was highly congruent with the process of award restructuring. Many of the arguments advanced by Piore and Sabel in The Second Industrial Divide, about higher skilled artisans using flexible manufacturing techniques and forms of work organisation to produce customised and complex products, were consistent with the political demands of award restructuring. As a result several researchers in Australia developed or shaped a hybrid post-Fordist theory that recognised award restructuring as a central plank in establishing a supposedly post-Fordist industrial system. 132 This relationship is widely recognised within Australian industrial relations circles. For example, Iain Campbell observes:

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130 For a fuller description and analysis of the award restructuring debate see Ewer, P., et. al., Politics and the Accord, Pluto, Sydney, 1991 and for an alternative view from the Right see, Costa, M., and Duffy, M., Labor, Prosperity and the Nineties: Beyond the Bonsai Economy. The Federation Press, Sydney, 1991. These two works offer analysis of the award restructuring process from different political perspectives. Politics and the Accord is largely the product of the ex-Metal and Engineering Workers' Union research officers, and outlines the 'derailing' of their version of award restructuring, and the failure of the Accord. Labor, Prosperity and the Nineties: Beyond the Bonsai Economy, in contrast is from a NSW Right wing union perspective and advocates a more free-market version of trade unionism. (Trade unions compete again one another for members like any other service organisations.) Also see Campbell, I., "The Australian Trade Union Movement and Post-Fordism". Journal of Australian Political Economy. No. 26. 1990

131 Amalgamated Metal Workers Union. Award Restructuring-Guidelines for Organisers (The Red Book), AMWU. Surry Hills. 1989

"The ideas (post-Fordist theory) played a prominent role in the initial impulse towards award restructuring and continue to exercise an influence in the subsequent negotiations. From this point the ideas have spread well beyond a number of individuals and they have come to inspire the efforts of a broader layer of activists involved with the work of the government as well as trade unions." 133

However the role of post-Fordist theory in shaping the award restructuring agenda has led to some undesirable and unforeseen outcomes. There are now two agendas of award restructuring. The more politically progressive agenda is based on national accreditation of skills and training, multiskilling, an articulated career path, industry based awards and a continuing role for some industry based or centralised wage fixing. This vision of award restructuring was promoted by the Amalgamated Metal Workers' Union, (now the Metal and Engineering Workers' Union) primarily through the Metal Industry Award. The other award restructuring agenda is based on enterprise bargaining, plant specific training systems, enterprise unions and uncertain links to national accreditation of training. This vision is championed by the Business Council of Australia (BCA).134 Yet post-Fordist arguments support both these agendas of award restructuring, because post-Fordist theories fetishise 'flexibility' and on the surface the Metal Industry Award and the Business Council's 'workplace culture' both enhance 'flexibility'.135

"They (post-Fordist informed researchers and consultants) neglect, however, to tease out the politics of skill, and in particular the battle between a national training agenda and enterprise-specific skills. Praise for the Metal Industry

133 Campbell, I., "The Australian Trade Union Movement and Post-Fordism", Journal of Australian Political Economy, No. 26, 1990, pp. 10. This might be slightly overstating the influence of post-Fordist ideas. It might be more accurate to consider that post-Fordism legitimated the award restructuring agenda, rather than initiating it. Also see Hampson, I., "Post-Fordism, the French Regulation School and the work of John Mathews", Journal of Australian Political Economy, Vol. 28, 1991 For evidence of the influence of post-Fordist ideas on the trade union movement see Carmichael, L., "After the revolution; (Micro) Chips with everything", Australian Left Review, May 1988
Award, which falls within the national framework of restructuring, is matched by favourable reference to leading exponents of the Business Council strategy—ICI Botany, Alcoa, and BHP." 136

Similarly, post–Fordist theories fail to differentiate industry based unionism and enterprise unionism. This situation arises because post–Fordist theories fail to differentiate these various forms of flexibility and thereby fails to recognise the exploitative features of some forms of flexibility.

"(M)any users of the term (flexibility) have either deliberately or unintentionally overlooked the double–edged, value–laden character of the word: flexibility in the abstract sounds agreeable but not always when considered in the concrete—e.g., the debilitating effects of working alternate blocks of day and night–time shifts." 137

It is true that John Mathews and other Australian post–Fordists recognise the possible emergence of an exploitative version of industrial restructuring (neo–Fordism) which is based on an intensification of Fordist principles and further deskilling of labour. 138

Yet the two analytic categories, neo–Fordism and post–Fordism, do not enable a differentiation of BCA 'workplace culture' restructuring and the Metal Industry Award. For example, the BCA agenda of enterprise based restructuring does seek to improve the skill level of the workforce and to foster functional flexibility through multiskilling, and therefore could be interpreted positively as post–Fordist. Yet this agenda of restructuring also seeks to weaken the power of organised labour through the establishment of enterprise unions and the introduction of plant specific training to reduce the external mobility of labour. 139

This example illustrates that the 'flexibility' sought by the BCA is very different from the 'flexibility' desired by Left wing unions, and post–Fordist theories analytically slide over the differences between these forms of flexibility. The imperative of 'flexibility'

136 Ewer, P., et. al., Politics and the Accord, op. cit., p. 47
138 Mathews, J., Tools of Change, op. cit.
139 Ewer, P., et. al., Politics and the Accord, op. cit., p. 127
which underpins the post-Fordist theories is not sensitive to questions of class and exploitation. For these reasons post-Fordist theories (as they evolved in Australia) have served as a poor guide for the union movement.

**Politicising The Flexibility and Networking Agendas**

This brief review of the discourse of 'flexibility' in the Australian award restructuring debate shows very clear parallels with the 'networking' discourse. In both cases a political consensus has been achieved and 'flexibility' and 'networking' are accepted as imperatives for successfully restructuring Australian manufacturing industry. This consensus however, is achieved through a discourse which depoliticises the processes of industrial restructuring. At the plant level, 'flexibility' and 'networking' may translate into labour market deregulation and sub-contracting which are highly politicised along class lines. Yet in the tripartite discussions which the Australian Manufacturing Council, and the National Industry Extension service, consensus between unions, manufacturing capital, and the government can be secured around the categories 'flexibility' and 'networking'. To repeat as Narelle Kennedy from the Australian Chamber of Manufacturers points out – "The idea of networks strikes a chord between a wide range of ideological positions".

Yet ultimately how these overarching and abstract categories of flexibility and networking will translate into the concrete restructuring of firms and businesses will largely depend on the relative strength of political forces at the firm or plant level. The problem that this raises for the labour movement is that the amorphous categories 'flexibility' and 'networking' present restructuring as a technical process, not a political one. Moreover, the over-conflated nature of the categories makes it more difficult for


workers and job delegates to readily discriminate between 'restructuring for labour' and 'restructuring for capital'. This situation is particularly apparent through the award restructuring process where Mathews' version of post–Fordist ideas conflates the flexibility of the Metal Industry Award and the BCA's enterprise restructuring agenda.

To politically intervene in the process of industrial restructuring in Australia, there is a need to unpack the over–conflated and depoliticised concepts of 'flexibility' and 'networking' to clearly and unambiguously articulate what forms of flexibility and networks are acceptable or tolerable to the labour movement, and what are unacceptable. For example, at a simple level functional flexibility must be distinguished from numerical flexibility. Functional flexibility involves increasing the range and scope of tasks and thereby offers the prospects of more interesting and better paid work, whereas numerical flexibility means extending the capacity of the employers to 'hire and fire' which is clearly unacceptable from a trade union point of view. Likewise labour flexibility must be distinguished from enterprise flexibility. The recent publication of Politics and the Accord demonstrates that sections of the trade union movement do make these distinctions of different forms of flexibility very clearly. 142

There is a similar need to deconstruct the concept of 'networking' to recognise power and control, however, so far within the inter–firm networking debate such distinctions have not been made. The typology offered in Chapter One began to differentiate some forms of networking, but did not focus on power and control. Some attempts to deconstruct the concept of networking are offered below based on the work of Pyke and Storper and Harrison.

Frank Pyke develops a four fold typology of forms of inter–firm relationships between

small and medium sized establishments; 143

* Trusting co-operation – Autonomous, non-competitive. The establishments being tied to one another by mutual dependency.
* Forced co-operation – One firm dominates, dependent sub-contracting
* Dependent co-operation – A mix of co-operation and competition
* Specialist independent co-operation – Co-operation between firms that are not mutually dependent.

A similar approach is offered by Storper and Harrison.144. They investigate whether a network has a core firm, or whether it is a ring of firms or some combination of both. The alternative are:

* All ring – No core – There is no hierarchy
* Core – ring with co-ordinating firm – There is a co-ordinating firm, but it cannot function on its own, nor determine the existence of other firms
* Core – ring with a lead firm – There is a asymmetry of power. The lead firm can determine the existence of the ring.
* All core – no ring – Vertical integration

Both these classifications highlight the power relationships between firms. However a further and more important distinction between types of inter-firm networking is on the basis of what is competitive advantage that a specific network arrangement confers on a firm? Does a network exist to enable the sub-contracting of work to secondary labour market as in some cases in Japan? Or does the network improve the flow and speed of information and ideas between firms? On this basis, I would suggest distinguishing 'exploitative inter-firm networking' and 'development inter-firm networking'. Exploitative networking referring to networking which is based on greater exploitation of labour through sub-contracting. This could also involve externalising costs on to the environment, workers or the broader community through an intermediate firm. By contrast, 'development inter-firm networking' refers to improving the core capacity of a firm through networking which is not based on the externalisation of costs on to other firms, workers or the environment. Specific

examples of networking could also be distinguished on the presence or absence of strong and effective trade unions, and other institutions which regulate wages and working conditions.

These are only preliminary categorisations, however they do provide a means to distinguish different forms of inter-firm networking on the basis of power and control. So far in the Australian inter-firm networking debate such a distinction has not been made. From these classifications it is evident that trade union movement should oppose forms exploitative inter-firm networking that derive a competitive advantage from the super-exploitation of labour, such as the use of a non-unionised and segmented workforce. Furthermore it could also be argued that dependent co-operation and core - ring networks with a leading firm should be opposed because these structures are based on the domination of one firm (generally smaller) firms by another firm. It is likely that these forms of inter-firm exploitation promote intra-firm exploitation through forcing cost-cutting and putting pressure on the wages and conditions of the workers in the dependent firm. A similar distinction is evident in the flexible specialisation literature. Piore and Sabel argue that there is a need to regulate working conditions and wages in industrial districts to ensure that firms compete on the basis of innovation and quality, not cutting wages and cost minimisation strategies.

By contrast networking strategies could be supported where there is 'development networking' with strong and effective trade unions, and local institutions to regulate wages and working conditions, and there is not a substantial asymmetry of power between the firms involved in the network.

*Sharpening the 'Networking' Policy Agenda*

In addition to distinguishing between exploitative networks and development networks, several other elements are required to give the inter-firm networking

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agenda the sharper political focus to enable political intervention in this policy agenda. Firstly, there is a need to distinguish between simple and systemic networks. Secondly, the concept of networking and inter-firm collaboration has to be used as a lever to undermine economic rationalism. Thirdly, inter-firm networking should not be pursued as an isolated policy, it must be integrated into a broader and stronger industry policy framework, particularly in relation to regional policy. Fourthly, trade unions should play a more significant role in identify possible networks, and acting as a broker.

Hidden beneath the dominant category of 'networks' there are two different notions of networking evident in Australian industry policy circles. The AMC report on the networking seminar programme drew out these two different versions of networking. The following table is taken from the AMC report. 146

<table>
<thead>
<tr>
<th>Simple Enterprise Network</th>
<th>System Wide Networks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basis</strong></td>
<td>A web of relationships between firms, and firms and institutions which form an integrated, collective system</td>
</tr>
<tr>
<td>Inter-firm collaboration</td>
<td></td>
</tr>
<tr>
<td><strong>Time frame</strong></td>
<td>Medium-longer term</td>
</tr>
<tr>
<td>Short term</td>
<td></td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td>Much broader in potentially fostering new products / industries</td>
</tr>
<tr>
<td>Limited, in focusing of particular impediments e.g. training/export marketing</td>
<td></td>
</tr>
<tr>
<td><strong>Approaches</strong></td>
<td>More strategic</td>
</tr>
<tr>
<td>Tendency to be ad hoc</td>
<td></td>
</tr>
<tr>
<td><strong>Participants</strong></td>
<td>Multiple firms linked to a variety of institutions</td>
</tr>
<tr>
<td>Small number of firms</td>
<td></td>
</tr>
<tr>
<td><strong>Institutional support</strong></td>
<td>Development of institutions to facilitate linkages</td>
</tr>
<tr>
<td>Generally absent</td>
<td></td>
</tr>
</tbody>
</table>

For industry development it is important that the system wide version of networking is promoted in Australia. Many of the employer groups view inter-firm networking as primarily as simple enterprise networks, and exclusively firm driven. However by focusing on the system wide network, there is a more significant role for public sector institutions in shaping and supporting the formation of inter-firm networks, and a more strategic view is taken. This systemic view of networking calls for significant changes by Australian manufacturing firms as to how they view competition, collaboration, product development and the public sector. Potentially, this systemic view provides the basis for industry development strategies, and also provides the opportunity to develop region industry policies.

The idea of inter-firm networks and collaboration also has the potential to undermine the ideology of the naturalism and primacy of market based exchange – one of the pillars of economic rationalism and neo-classical economics. The ideas of networking and collaboration between firms stresses the role of cultural, institutional and non-market forces in shaping competitiveness and industrial structures. The image of an economy as atomised firms fiercely competing in a sea of market relations is replaced with a more institutional view of market and non-market forces, regulated competition and collaboration, private firms and public sector institutions all combining as equal elements in industry development. This provides an space (albeit a small one) for institutional approaches to oppose the 'logic' of the 'free market' which has dominated Australian industry policy debates over much of the last decade. 147 However this more institutional perspective is generally not highlighted by the supporters of the flexible specialisation thesis in Australia, and is not promoted in Australian industry policy circles.

147 Garnaut, R., Australia and the Northeast Asian Ascendancy: Report to the Prime Minister and the Minister for Foreign Affairs and trade. AGPS. Canberra. 1989
A third means of increasing the potential of the inter-firm networking agenda is through connecting inter-firm collaboration initiatives to other industry policies. As has already been noted, the dominant view of networking in Australia has been 'simple enterprise networks'. This view suggests that networks are firm driven and there is little role for the state, possibly only as a 'broker'. In this guise, inter-firm networking is of only limited potential as an industry development strategy. Instead what is required is the development of regional and local policies of which inter-firm networking is only one component. For example, instead of the simple small firm network of engineering and fabrication shops in Wollongong, there is a possibility of establishing local institutions and infrastructure to support the engineering industry. This might involve developing closer links to Wollongong educational institutions, particularly TAFE, establishing a service centre for the industry, and a loan guarantee consortium. This systemic form of networking opens up possibilities of industry development which are clearly not present in simple enterprise networks. However currently inter-firm networking in Australia appears more like a pseudo-industry policy which is aimed at placating manufacturing capital, and sections of the trade union movement at a low cost. Connecting the inter-firm networking agenda to regional policy would also re-open regional policy as an important area of industry policy, and politicise inter-networking in the process. On this point, one important lesson can be learnt from the Third Italy experience – regional policies and the local state can play an important role in industry development. This is a lesson which should be transferred to Australia.

CONCLUSION
This chapter has provided a review of the current state research about inter-firm networking in Australia and has detailed the positions of the main organisations and institutions involved in the promotion of inter-firm networks. It was demonstrated that the both Third Italy model and the flexible specialisation thesis have been influential in shaping the policies and views of the Australian Manufacturing Council, the City of
Melbourne, DITAC, the ACTU, the TCF unions and other unions. Yet it was shown that there are numerous problems with the role of the Third Italy, and the flexible specialisation thesis shaping the policies of these organisations.

The use of the Third Italy as an ideal of localised inter-firm networking for Australia was criticised on a number of grounds. Firstly, the Third Italy industrial districts have been presented in Australia in an overly optimistic fashion with little regard for the critical literature. Secondly, the popular account of the Third Italy draws almost exclusively on the industrial districts of Emilia–Romagna with little or no consideration of the uniqueness of these industrial districts with respect to their history, industry sectors, level of technological sophistication, or local political culture. It has been demonstrated that other industrial districts in other regions of the Third Italy provide a far less attractive image of small firm industrialisation. It was concluded that the danger of this Australian vision of the Third Italy is that it ignores the crucial role of trade unions, local authorities and political culture in regulating the small firm economy. Even if the PCI, and communist and socialist trade unions can regulate the industrial districts of Emilia–Romagna (which some critics doubt anyway), it remains to be seen whether Australian unions and organisations could achieve the same level of local regulation in the current political environment of unemployment and a declining trade union membership.

Drawing heavily on the criticisms developed in Chapter Two, it was suggested that the flexible specialisation thesis is a poor guide for industry policy for the Australian tripartite bodies and trade unions mentioned above. The flexible specialisation thesis presents a highly questionable view of market structures, production systems and the benefits of small firms. The critique outline in this chapter suggested that emphasis on the benefits to small firms of market fragmentation and flexible technologies ignores the restructuring of transnational corporations along more 'flexible' lines. Furthermore there are several barriers to firms entering the high-tech world of CAD/CAM, and
FMS which the flexible specialisation thesis conveniently ignores. Also due to the binary opposites (flexible specialisation and mass production) which underpins the flexible specialisation thesis, it exaggerates the extent of changes of production, technology and markets. Based on an overburden dualism, the flexible specialisation stresses the transformation, and ignores the continuity.

However the rejection of the optimistic Third Italy account and the flexible specialisation thesis as guides to Australian industry policy does not mean that the strategy or goal of promoting inter-firm collaboration and networking should also be rejected, or that nothing can be learnt from the flexible specialisation thesis and the Third Italy model. The flexible specialisation thesis provides a valuable antidote to the ideology of industrial giantism which has too long dominated theoretical and policy discussions about industry development. In addition the Third Italy model provides an important lesson about the potential role of local or regional industry policy.

However inter-firm collaboration can stand on its own as a industry policy, and firm or business strategy without the flexible specialisation thesis or the Third Italy model. Inter-firm collaboration or networking could clearly assist in the development of the local industry, and help overcome some of the well-known problems which plague Australian manufacturing industry, which have been described previously in this chapter. Yet if the inter-firm networking path is going to be pursued by the trade union movement, (which it currently is being) there is a need to develop a more explicit political analysis of inter-firm networking and collaboration. Firstly, the discourse of 'networks' and 'networking' must be modified since these categories depoliticise industrial organisation and obscures asymmetries of power between firms, and exploitation within firms. Trade unions and progressive organisations need to articulate a description of inter-firm collaboration which highlights, not obscures questions of power and control. The two categories of 'exploitative networks' and
'development networks' have been suggested. It is important to highlight the dimension of power, not only to prevent further labour exploitation, but also to provide the basis for effective industrial strategies. A technicist approach is not very helpful for understanding the political economy of industrial organisation. The term 'networking' could possibly be retained as a short hand expression, so long as it is not used to obscure possible exploitative and unattractive features of these forms of industrial organisation.

From this more politicised view of inter-firm networks and collaboration, there is also a need to argue for a strong role for the public sector in the promotion of collaboration, and utilise the theme of networks as means to undermine the neo-classical view that the economy is a series of isolated production functions within a market. Inter-firm networking initiatives also need to be integrated more thoroughly into industry policies, rather than being a cheap and pseudo-industry policy intervention.

In the end, I am advocating a more cautious approach to the promotion of inter-firm networking. The Third Italy model, as presented in Australia, and flexible specialisation thesis have been used to present small firm networks as a panacea for Australian manufacturing. This is not the case. Vertical integration, internal economies of scale are still important, and flexible technologies are generally expensive and only so flexible. Also small is not necessarily beautiful, and in some instances it is plainly ugly. For these reasons local small firm networks need to be approached with caution, and each specific 'network' needs to be measured against some criteria, similar to that developed in this chapter. Does it derive its advantage from increased exploitation of labour, the environment or the community? Is there a relationship of dependence between the firms? Does the network lack strong trade unions and local political structures? If the answers, to any of these three questions is yes, the 'network' should be opposed. So instead of embracing networks and industrial districts in the abstract as has happened, there is a need to consider the specific forms
inter-firm networks and collaboration take. Also the inter-firm networking agenda is of limited industry development, and political potential unless it can be given a sharper focus through developing regional and local industry policies, involving the public sector, and developing strong regulatory structures. Clearly, this direction forward has some limitations, but I consider it to be a significant improvement on the current approach to inter-firm networking by sections of the trade union movement.
CHAPTER 5

CONCLUSION

*The Limitations of the Flexible Specialisation Thesis and Scott's Theory of the New Industrial Spaces as Accounts of Industrial Organisation*

This thesis has highlighted the theoretical, empirical and political limitations of two post-Fordist account of industrial organisation – the flexible specialisation thesis and Scott's new industrial spaces. The flexible specialisation thesis was revealed to be constructed in three different modes – as an ideal-type, a normative political claim and as an empirical phenomenon. In Chapter Two it was demonstrated that each of these three different ways of understanding the flexible specialisation thesis has serious limitations. The ideal-type is not intellectually productive because it is based on a binary view of production and history which fails to comprehend the diversity of production strategies and forms of industrial organisation. In addition this ideal-type presents flexibility as a over-conflated category which is used indiscriminately – a rigid past is contrasted with a flexible future.

The view of flexible specialisation as empirical phenomenon was even more severely criticised. It was demonstrated that the theory lacks a 'criteria of dominance' to enable empirical testing. A further serious criticism of understanding the flexible specialisation as empirical phenomenon is that it is based on a dubious view of production strategies, technology and markets. Finally, the empirical cases drawn on by supporters of the flexible specialisation thesis, such as the Third Italy, Silicon Valley, and Sakaki are also contentious. The flexible specialisation account of the Third Italy is challenged by numerous researchers who suggest that the competitive foundation of the industrial districts is not flexible specialisation, but 'sweat-shop conditions, a sizeable black economy, and government support. Other critics also point to evidence which suggests that the Third Italy is a transitional phenomenon. Yet
because of problems of representativeness and interpretation it was difficult to assess this evidence and determined the nature of the 'real' Third Italy. However in comparing the 'industrial districts' of Third Italy with Silicon Valley, and Sakaki it was clearly demonstrated that these three different production arrangements could not be properly comprehended within the flexible specialisation framework. In the final analysis the flexible specialisation thesis provides an account of Third Italy much in line with Alfred Marshall, but brings with it a lot of unwanted baggage.

The other mode of constructing flexible specialisation is as a normative political claim. Two major political directions have evolved from this view of the flexible specialisation, namely labour reformism and yeoman democracy or associational socialism. Both these political strategies were found to be wanting. It was argued that there are significant limitations with the localist and non-statist politics that the flexible specialisation thesis promotes.

The other predominant post-Fordist perspective of the decentralised and localised industrial organisation has been developed by Allen Scott. Scott provides an explanation of the rise of the new industrial spaces based on a theoretical synthesis of transaction-cost economics and an incomplete rendition of the French Regulation School. Scott's framework of industrial organisation was found theoretically unacceptable primarily because it was based on an efficiency or cost-minimisation explanation of industrial organisation, and dichotomised markets and hierarchies as two competing mechanisms of organising transactions. In addition, Scott isolates economic uncertainty as the factor which is promoting vertical disintegration and spatial agglomeration. This is a reductionist explanation because Scott fails to recognise other economic and non-economic pressures on the boundaries of the firm.
The Need for a Alternative Theoretical Approach – A Tentative Direction Forward

Both the perspectives of the flexible specialisation thesis and Scott's new industrial spaces share a localist account of industrial restructuring. At one level this is important and refreshing because it forces consideration of decentralised industrial structures and small firms, which have too long been considered irrelevant to theories of industrial capitalism. Yet this localist focus is also seriously limited. The flexible specialisation thesis and the work of Scott fail to comprehend the global level of capitalist restructuring. For example, it is interesting to contrast the industrial and spatial organisation of the U.S. shoe producer, Nike with the Piore and Sabel's vision of craft production in the Third Italy.

Nike just did it! The Nike corporation co-ordinates an elaborate system of production where virtually all production is performed by sub-contractors, and the basic R&D and product development is performed at Nike's Beaverton facilities in the U.S. The sub-contracting system is based on two tiers. The first tier of sub-contractors located are involved in the final assembly of footwear, where the second layer of sub-contracts supply material, components, and sub-assembly.¹ Most of the sub-contractors (both tiers) are located in South-East Asia, yet there is a spatial division of labour between the first and second tier sub-contractors. The first tier of sub-contractors are located in South Korea and Taiwan, and the second layer in cheaper wages countries such as Thailand, Indonesia, and China. The first tier of sub-contractors organise the second tier. In some ways the organisation of Nike is compatible with the 'New International Division of Labour' (NIDL) thesis, however there are also important differences.² Nike sub-contracting has not simply gravitated to the lowest labour cost locations, the inter-firm linkages are much tighter and closer than the NIDL thesis suggests, and the NIDL thesis gives little attention to the

competitive strategy of multinational corporations which is a significant factor in the case of Nike. How then do we understand the global strategy of Nike?

The industrial district model is clearly inadequate. Neither can it be suggested that Nike's strategy is simply Fordist — The Nike corporation produces high quality differentiated products and is demand driven with high volumes. Moreover, Nike have a well devised marketing strategy which exemplifies post-modernity.

"By linking its name with maverick heroes such as Bo, Jordan, Agassi, McEnroe and Spike Lee, Nike has made its product synonymous with self-expression, you-can-do-it-all mind set predominant in the late 80s and early 90s."4

Clearly neither the flexible specialisation thesis or Scott's theory of the new industrial spaces can adequately explain Nike's corporate organisation and production strategy. Supporters of the flexible specialisation thesis might attempt to argue that Nike have adopted a strategy of hybrid form of mass production with extensive sub-contracting linkages. Likewise, Scott could try to argue that the behaviour of Nike can be explained through transaction cost economics, and is a remnant of Fordism. Yet both these explanations are unsatisfactory. There is however a post-Fordist theory which better captures the global dimension of Nike's operation. Phil Cooke has developed a post-Fordist theory which centres on the concept of flexible integration. This was very briefly outlined in Chapter One. Unlike flexible specialisation or Scott's flexible accumulation, Cooke's flexible integration does not offer a localist account and instead stresses the integrative aspects of emerging forms of industrial at a global and local level. Cooke identifies five key elements of flexible integration:

1- Internal integration of marketing, production and R&D
2- Use of flexible computer based technologies
3- Pursuit of internal and external economies of scope by engaging in joint production internally and strategic alliances externally

3 Donaghu, M., and Barff, R., op. cit.
4 INGI Labour Working Group, "Unjust but doing it! Nike operations in Indonesia", Inside Indonesia, June 1991, p. 7
5 Donaghu, M., and Barff, R., op. cit.
4- Diagonal integration – large firms undertake key aspects of production in-house while sub-contracting to or creating specialist small and medium-sized firms

5- Restructuring the labour market with the formation of a dualised comprising a highly skilled core (functional flexibility) and semi-skilled periphery (numerical flexibility)

An analysis of Nike's corporate strategy and organisation suggests that these five components of the concept of flexible integration provide a good account, possibly with the exception of the use of flexible machinery. Similarly, the concept of flexible integration provides a useful explanation of the Benetton's system of decentralised, but globally linked production, and the global strategic alliances and joint ventures between telecommunication and computer firms. The removal of the localist focus is an important step in developing a more useful theory for understanding current patterns of spatial and organisational restructuring. Amin and Robins and Leborgne and Lipietz adopt similar approaches which recognise the global as well as the local level of capitalist industrial organisation.

The OECD's Technology/Economy Programme reaches similar conclusions as well. The OECD coins the term 'techno–globalism' to described the tighter linkages between the economy and technology and the proliferation of inter–firm co-operative arrangements.

"The emergence of firms that are called 'global' because they operate on the world market from a number of units installed all over the world market from a

7 Donaghu, M., and Barff, R., op. cit., p. 548
8 Cooke, P., "Flexible integration, scope economies, and strategic alliances: social and spatial mediations", op. cit., pp. 292–293 The development of such strategic alliances at the global level suggests that in many industry sectors, transnational corporations as they presently exist are not established for competing in truly global markets in technology base industries. Indeed it could be argued that the established structure of the firm as a legal and organisational vessel for capital is not effective in this new economic environment. The costs and risks of R&D are too high for any single firm. Yet whether alliances are temporary strategy or a permanent feature of capitalism remains to be seen.
number of units installed all over the world, with remaining relatively autonomous yet linked to the rest, and each reaping rewards of local competitive advantage (labour skills, quality of the industrial fabric, access to scientific and technological resources, and so on). Here techno-globalism would appear to owe its very existence to the very nature of the innovation process, since these firms are counting on the interaction and accumulation of skills worldwide.

These arguments are not to suggest that the capital is 'footloose' or 'placeless'. Clearly this is not the case. The process of incremental innovation, among other elements of production is very much place bound, and space remains a fundamental category of political economy.

"..the spatial picture is one of locationally relatively unconstrained networking of information, R&D, marketing, and distribution, much of which is tied together by the burgeoning trend towards forming strategic alliances. But where concentrations of innovation are found, then there are often tightly knit subcontracting networks localized by the existence if such clusterings, providing the sub-ordinate—though not necessarily routine—production of components and services' required by the dominant local innovator."  

However we are witnessing the integration of global and local firms and markets. Indeed Sabel is correct in asserting that corporations are decentralising functions to exploit local competitive advantages, but what he does not stress is that these decentralised units are integrated into a global whole. Decentralised transnational corporations integrate small local firms in the global capitalist space-economy. Therefore neo-Marshallian industrial districts do not represent a return local economies and a resurrection of the 'community', instead they represent mechanism where small firms are integrated in the operation of global markets. And as this process continues, local economies lose their autonomy. To quote Amin and Robins again—

"In the late 20th century, the local economy can only be seen as a node within a global economic network; and it can have no meaningful existence outside this context. If we consider that this global arena is shaped and informed by formidable relations of power, then the scope for local autonomy and proactivity becomes considerably narrow."  

12 Cooke, P., op. cit., p. 296
13 Amin, A, and Robins, K., op. cit., p. 28
The challenge is to theorise these changes recognising both the global and local levels of restructuring and the relationships and contradictions between these levels, and the uneven nature of capitalist development. Rejecting the localism of the flexible specialisation thesis and Scott's theory of the new industrial space is an important start in this intellectual project, and the work of Cooke, Amin and Robins, and Leborgne and Lipietz is a step in the right direction.

In setting out this theoretical project there is also a need to reject the universality or totalising nature of both the flexible specialisation thesis and Scott's account of the new industrial spaces. Scott's theory of the new industrial spaces reduces all localised agglomerations to the same structural dynamic, and the same is true of the meta-paradigms of flexible specialisation and mass production. Any viable theory must define the limits of its scope and applicability, and be cautious of totalising or universal claims. This is not to support the postmodernist claims for ever greater complexity and specificity. It is simply to offer a caution about the problems of generalisation – A caution that theorists of a concept such as flexible integration must address.

The Australian Inter-firm Networking Debate

Beyond the theoretical critique of the flexible specialisation thesis and Scott's new industrial spaces, this thesis also investigated the inter-firm networking debate in Australia. It was demonstrated that there has been a lot of interest in inter-firm networking and collaboration in Australian industry policy circles. Three main theoretical approaches have shaped the inter-firm networking debate in Australia – the flexible specialisation thesis, transaction-cost economics, and Michael Porter's work on clusters. The Third Italy model has also been a prominent exemplar in the promotion of inter-firm networking in Australia. The flexible specialisation thesis and

the Third Italy model have been particularly influential among sections of the trade union movement and the Australian tripartite manufacturing bodies.

In Chapter Four it was demonstrated that the Third Italy model and the flexible specialisation thesis are a poor guide for developing industry policies. The flexible specialisation thesis is based on simplistic assumptions about changing market structures, production systems, industrial organisation, and technologies. These assumptions overestimate the potential of small firms. As a result industrial policies based on the flexible specialisation thesis are likely to neglect the continuing importance of mass markets, vertical integration and very large firms. The flexible specialisation thesis does however serve as a useful foil to claims about the logic of industrial giantism and market determinism.

Chapter Four also criticised the presentation of the Third Italy model in Australia. Through the Australian research and government literature, the Third Italy has been presented in an overly optimistic fashion. There is little serious consideration of the evidence which suggests the success of the small firm industrial districts of the Third Italy is based on low wages, poor working conditions, a substantial black economy and government subsidisation. The validity of these claims of 'unfair' advantage remains unclear, but there are significant political consequences from not examining the less appealing accounts of the Third Italy. Without a sense of the possible forms of exploitation that do (or might) underpin 'successful' small firm industrial districts, trade unions and other groups are poorly equipped to deal with the promotion and possible emergence of these forms of industrial organisation. There is a vital role for unions and groups to regulate the industrial districts, however this is not fully appreciated because the Third Italy is presented in such a positive light. The relevance of the experience of the industrial districts of Emilia–Romagna for Australia was also questioned. Australia and Italy have very few similarities in this regard. Beyond very general lessons, such as the possible role of the local state, it was suggested that it
might be more relevant to look to other nations, perhaps Denmark.

The inter-firm networking debate in Australia was also criticised because the discourse of 'networking' depoliticises industrial organisation and inter-firm relationships. Like the concept of 'flexibility', 'networking' is increasingly presented as an imperative of industrial restructuring. Australian firms must be networked and flexible! Yet these two categories are over-conflated and fail to provide useful insights into understanding the nature of specific forms of production and organisational arrangements. (Chapter One provided a typology of the wide variety of forms of inter-firm networks.) Moreover, these categories fail to highlight their potentially exploitative dimensions. Some attempt was made in Chapter Four to deconstruct the idea of inter-firm linkages to highlight asymmetries of power between firms and increased exploitation within firms. It was also argued that post-Fordist theories provide insights into the new forms of capital accumulation and manufacturing strategies, but provide very little knowledge of class and exploitation.

In rejecting the flexible specialisation thesis and the overly optimistic account of the Third Italy, it does not necessarily follow that the inter-collaboration or networking policy initiatives should be also rejected. The inter-firm collaboration can stand as a strategy without the flexible specialisation thesis and the Third Italy. Chapter Four sought to provide a sharper political focus to the inter-firm networking policy agenda. I argued that the public sector has a crucial role in facilitating and supporting inter-firm networks, and the idea of inter-firm collaboration and industrial districts can be used to undermine economic rationalism and neo-classical economics. The idea of networks brings to the fore non-economic forces, culture and institutions shaping economic development. The world can no longer be considered isolated production functions. It is also vital that the inter-firm networking policy initiatives be linked to broader industry and regional policies and that trade unions take a more active role in the development and regulation of inter-firm networks.
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