An Exploration of Embeddedness: With Special Reference to Japan

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ABSTRACT

This thesis utilises the economic sociology concept of embeddedness as the theoretical underpinning to provide an alternative perspective to traditional explanations of economic growth. In general, the advantages of social embeddedness have been the main focus in the literature on the topic. The main purpose of this study is to explore, with special reference to Japan, how embedded relationships could both enable and hinder growth.

The study examines the operation of embedded ties in four key areas: inter-firm interaction with an emphasis on the auto-industry; embedded relationships within the financial sector; networks in the internationalisation of firms and embeddedness between government and business, including a case study of the construction industry. It finds that while embedded ties have several advantageous facets, they also have the potential to be an impediment to growth, flexibility and adaptability to change. Network ties can expand and become so rigidly structured, especially in a Confucian society like Japan, as to become obstacles particularly in the face of changing economic circumstances. They can atrophy. This finding led to the development of the concluding notion of "atrophied embeddedness".

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Chapter 1

INTRODUCTION

1.1 AIM AND SCOPE OF THE STUDY

Embeddedness is the concept that social structures, such as those of business networks, have a marked effect on economic action, with economic actors governed by more than just price and quantity considerations in their economic transactions. This notion was first postulated by Karl Polanyi and his co-authors, in the book *Trade and Market in Early Empires*, where it was suggested that the "human economy is embedded and enmeshed in institutions, economic and non-economic" (Polanyi, Arensburg, & Pearson, 1957, p. 250). Over a quarter of a century later, the idea was again revived and extended by Mark Granovetter in his paper, "Economic Action and Social Structure: The Problem of Embeddedness" (Granovetter, 1985). This opened a fresh line of inquiry in economic sociology, which asserted that embedded social networks founded on kinship, friendship, trust or goodwill could play a vital role in sustaining economic relations and institutions.

In general, the advantages of embeddedness have been the main focus in a growing body of literature on the topic. However, the role that embeddedness plays in sustaining economic institutions can have both positive and negative outcomes. Adopting the embeddedness conceptualisation as its theoretical framework, the primary aim of this thesis is to highlight both the advantages and disadvantages of embedded ties. The main purpose of the thesis is to explore, using as a background

the East Asian region, how embedded relationships could both enable and hinder growth and prosperity at both the firm and the economy levels.

Since the Second World War much of East Asia has experienced phenomenal economic growth. There was initially Japan, going from war-time devastation to become the world's second largest economy, then the 'Asian Tiger' newly industrialised economies of South Korea, Taiwan, Hong Kong and Singapore. Later still came the second tier newly industrialised economies such as Indonesia, Malaysia, Thailand and the Philippines. From the 1960s, growth in the East Asian economies was more rapid than any other region and absolute poverty too fell dramatically (World Bank 1998). Despite this overall regional success, the Japanese economy was in a perpetual state of stagnation through most of the 1990s. Beginning in 1997 moreover, a downturn that has commonly been referred to as the Asian economic crisis, has hit the region. Focusing on the case of Japan, this thesis in contrast to standard explanations, uses the embeddedness approach as an explanation both of earlier vibrancy and later decline.

Standard explanations of the 'East Asian miracle'[1] have centred on the role of sound macroeconomic policy and economic fundamentals.

> Macroeconomic performance was usually stable, providing the necessary framework for private investment. Policies to increase the integrity of the banking system and make it more accessible to non-traditional savers increased the levels of financial savings. Education policies that focused on primary and secondary education generated rapid increases in labor force skills. Agriculture policies stressed productivity change and did not tax the rural economy excessively. All of these economies

[1] The miracle being a period characterised by very high economic growth, little inflationary pressure on prices, and low unemployment, a period, which began in the 1960s and ended in 1997, with the recessionary epoch of the Asian economic crisis (Wai, 1999).

> kept price distortions within reasonable bounds and were open to foreign ideas and technology (Page, 1994, p. 2).

The role that social factors have played in helping the Asian miracle, however, has not gone unnoticed. In the East Asian context, it is not new to argue that strong social ties have played a key role in the economic operations of both the private and public sectors, although not specifically through use of the embeddedness conceptual framework. For instance, a popular view has been that social networks based on Confucian practices (as briefly delineated in the following subsection, 1.1.1), were instrumental in creating the miracle (Haley, Tan & Haley, 1998). Where this study differs, however, is that it examines the embedded nature and practice of business networks focusing not only the economically beneficial role they play, but also their contribution to economic and competitive disadvantage. The thesis will highlight the negative aspects of embedded ties, showing how they can be damaging to firms, especially when these ties become too strong and how they can affect a firm's outcome when exogenous shocks occur. The thesis provides, therefore, an explanation that supplements and complements the existing literature on the reversal of East Asian economic fortunes. In particular this study argues that embeddedness has been a contributory factor in the lesser performance of Japanese businesses in more contemporary times.

Existing literature regarding the reversal of fortunes in East Asia, such as Krugman (1994), attributes the economic downturn to the fact that much of the rapid growth the region experienced was not through improvements and efficiency gains in total factor productivity, but rather from progressively utilising more and more labour, capital and other resources. Growth of this kind, which gradually employs increasingly more scarce resources, must eventually be impeded by diminishing returns to scale, with these diminishing returns building up to the Asian Crisis. It is contended in this thesis that embeddedness can both supplement and complement such economic explanations.

At the outset however, it must be pointed out that the scope of the thesis is limited by the lack of published and other data on the details of network operations and decision-making in the East Asian region. There is generally an 'informational void' or what is described as 'the black hole of Southeast Asia' even when it comes to understanding the external environments of business operation in the region (Haley, et al. 1998, p. 73). The role of embedded networks in impeding growth and adjustment is thus largely argued through inference and suggestion in the thesis.

1.1.1 The Cultural Premise: A Foundation of Embeddedness

It is argued that a major causative factor in the initial success of nations in the East Asian region is that they follow Confucian business practices (Haley, et al. 1998). *K'ung Fu-tzu* or Confucius (551 – 479 BC) and his main adherent *Mang-tsze K'o* or Mencius (372 – 289 BC) formulated a philosophy based on trust and reliance on five key relationships. These relationships were those between ruler and subject, father and son, husband and wife, elder son and younger son, and elder person and younger person (Backman, 1999, p. 10). Within each of these couplets the junior partner was obliged to obey and respect the senior and likewise the senior partner had the responsibility to protect and give due consideration to the subordinate. Further, both senior and junior partners had a high degree of trust for one another. These relationships were said to permeate through society, affecting business dealings as much as any other social relations.

In recent times, relationships over and above the five key Confucian ties have arisen between companies and also between companies and government. Keeping to the spirit of Confucian relationships, however, these links are still frequently based on a senior to junior ranking structure. This is especially the case in inter-firm connections present in the large conglomerates groups, like the Korean *chaebol* and Japanese *keiretsu*. In

such conglomerates, a large firm or group of larger firms has a self-supporting relationship with smaller firms like subcontractors and suppliers within the group, with these relationships being characteristically embedded. It has been contended that such social networks rooted in Confucian principles have provided much of the dynamism that promoted the "miraculous" growth of the years of the East Asian miracle (Haley, et al. 1998). It is a contention of this thesis however, that under differing circumstances, embedded ties can also be disadvantageous to the groups involved in them. In subsequent chapters it is shown how in several cases embedded links while initially beneficial and advantageous, have later become disadvantageous, as economic circumstances and business conditions have changed over time.

The following section of this chapter elaborates on the theoretical framework of embeddedness adopted in this thesis. It also draws attention to the possible metamorphosis of embedded links from those that are beneficial, to those that are not.

1.2 THEORETICAL FRAMEWORK: EMBEDDEDNESS

The majority of studies on embeddedness, such as Uzzi (1996, 1997) and Granovetter (1985), have largely emphasised the positive impact that embedded networks have had on firms and economies. Little attention has focused on their potential disadvantages. This is thus an intriguing point to pursue, particularly in light of the recent economic downturn in the East Asian region. Could embedded social networks, the celebrated foundation of East Asian economic dynamism, equally have been a factor behind the downfall of these economies and the firms within them? This thesis attempts to provide an answer to this question. Using examples mostly from Japan it suggests that these networks did indeed have some negative repercussions and may have changed as time progressed, from being strictly beneficial to being much less beneficial.

Several studies, adopting standard economic approaches and taking their cue from Krugman's attempts in the early 1990s to alert the world to 'the myth of the Asian miracle' (Krugman, 1994), have put forward explanations for the reversal of fortunes in Asia (e.g. Grimes, 1998 and McLeod & Garnaut, 1998). As has been noted by others however, such studies that utilise traditional economic theory, only explain such significant events as the East Asian miracle and the subsequent reversal of fortunes in the Asian financial crisis, in a relatively limited manner (Krier, 1999).

In an effort to facilitate a better understanding of the decline in East Asia, use of an approach involving an amalgamation of economic and sociological theory, known as the "New Synthesis", is proposed in this thesis (Krier, 1999; Granovetter & Swedburg, 1992; Friedland & Robertson, 1990). A key proposition of this "New Synthesis" is the idea that embedded social networks have a profound impact on economic development and actions (Granovetter, 1985). This idea, which underpins the concept of embeddedness, is a significant theoretical foundation for this thesis.

Embeddedness, the main driver in the "New Synthesis", fuses together two opposing theories. On the one hand there is sociological theory, which maintains that social structures are a key issue in economic behaviour. The sociological viewpoint maintains that people act a certain way because of societal pressures and tradition, with more attention paid to the opinions of peers, rather than to rational choice. This is known as the "over socialised" argument (Granovetter, 1985, p. 483). On the other hand, traditional economic theory holds that social ties have very little impact on economic outcomes and merely create inefficiencies by insulating economic exchange from the market. People are rational, individualistic economic entities, acting largely in self-interest according to this

traditional, neo-classical market model. This viewpoint is sometimes classified as the "under socialised" argument (Granovetter, 1985, p. 482).

Reconciling these two opposing arguments, the concept of embeddedness suggests that all economic action is embedded in social ties, which act to either aid or hinder economic action. What this means is that people are not just atomised, rational, solely self-interested entities, nor are they mere automatons governed by tradition. Instead social networks founded on kinship, friendship, trust and goodwill influence economic actors (Uzzi, 1997).

Embedded relationships are predominantly those where economic actors have a degree of trust and familiarity with one another. This familiarity and trust exists over and above any contracts that might exist between actors and further facilitates economic interaction. Studies have revealed that in those industries characterised by embedded ties, exchange partners, rather than pursuing a goal of profit-maximisation, seek a middle of the road solution of finding a satisfactory and fair price for all concerned (Dore, 1983 & Uzzi, 1997). This consequently leads to the formation of long-term mutually dependent ties between firms on a far more equal footing than could ever be possible given arms length-ties inherent in the neo-classical exchange model (Dore, 1983; Romo & Schwartz, 1995). Clearly, these embedded ties can be very beneficial to firms in the early stages of development, providing a degree of stability that non-embedded firms would not have. The moot point however is whether these same embedded ties can hinder the flexibility, adaptation and competitiveness in times of economic downturn. This latter aspect will be explored in later chapters of this thesis.

1.2.1 Alternative Theories

This section examines some alternative theories to embeddedness that have also attempted to explain the effect of social and business networks

on business dealings and critiques their ability to effectively incorporate network interaction in comparison to embeddedness. One such initiative is the study of transaction costs, with its main premise being that networks are formed between firms to reduce the cost of performing economic exchanges between parties on repeated occasions (Gulati, 1995). Other frameworks often cited are agency and game theory.

While making an important contribution, all these frameworks are deficient as they disregarded the network structure inherent in embedded ties and concentrated on the interaction of individual dyadic pairs within the network. Game theory, for instance rationalises an embedded network, like that of the Japanese *keiretsu*, into one of an N-person game. The numerous pair-wise interactions between N-players are then individually scrutinised, with a conclusion based on actors being motivated only by self-interest. The dynamism of the network as a whole is completely ignored (Uzzi, 1997, p. 37).

Agency theory also pursues the interaction of pairs of solely self-interested parties, using the principal-agent framework. Organisational networks in agency theory are often portrayed as being held together by elaborate formal controls, rather than by trust built through familiarity as in embeddedness (Uzzi, 1997, p. 37). As Granovetter stressed, however, it is not complicated institutionalised regulations, nor an overall sense of morality, which discourages malfeasance or cheating between firms and individuals. Rather, it is the relationships between actors and the reputations they have built through long-standing ties that holds a network together (Granovetter, 1985, p. 490).

Transaction cost theory similarly portrays economic actors to be solely self-interested and pays heed only to the pair wise relationships between actors, ignoring network structures and trust within the network. In the Williamson transaction cost approach (1985), opportunism is incorporated into the behavioural assumptions of network pairs. Opportunism however,

is in direct contrast to trust which features prominently in embeddedness theory. Further, in the transaction cost framework, firms constantly strive to maximise their advantage, no matter the status or standing of their relationships. This again is contrary to the principles of long standing network ties, where a high degree of trust has been built up over time (Ghoshal & Moran, 1996).

A synthesis of the transaction cost and embedded frameworks has been partly achieved by two recent studies however (Jones, Hesterly & Borgatti, 1997; de Bruin & Dupuis, 1999), with both studies to some extent incorporating the role that network structures play in economic interaction. The de Bruin & Dupuis study shows how social networks are used to economise on transaction costs, but acknowledges that certain sociable and altruistic aspects of embedded ties cannot be fully explained by transaction cost theory, recognising that economic actors are not wholly consumed by self-interest in a solely transaction cost based model. Likewise the Jones et al. (1997) study seeks to rationalise network interaction as being one of status maximisation, where a firm's actions are driven by a desire to propel itself forward within the network structure. This however, once again sees economic actors up as being driven by self-interest, which is clearly not true in every instance.

1.3 MAJOR ADVANTAGES OF EMBEDDED TIES

In a study of the New York garment industry, Uzzi (1996, 1997) identified three advantageous features characterising embedded ties between firms. These were trust, fine-grained information transfer and joint problem solving arrangements. Trust, according to Uzzi acts as a kind of governance mechanism in embedded networks. If there is trust between opposite number network operators, it is much more likely that the actions of any one player are regarded in a favourable light and often emulated. Uzzi found that trust between network partners also facilitated the voluntary exchange of goods and services. In the garment trade Uzzi

found that a favoured partner might get special treatment like faster product turnaround when haste was tantamount or extra orders when capacity was slack, thereby aiding their survival in times of lean business (1996, p. 678). Trust in embedded business ties also reduced the risk of the economic exchange, decreasing the uncertainty that was a feature of arms-length, non-embedded exchange in the clothing industry.

In addition, fine-grained information transfer entailed the passing on of more than just price and quantity information like an arm's length exchange does. Rather, valuable production information, market trends (in the garment trade, this means what is fashionable), organisational stratagem and detailed data on a partner's production function was relayed through the embedded link. With this fine-grained information transfer and especially with the exchange of information regarding production functions Uzzi (1997, p. 45 - 46) touched on the possibility that firms might negotiate a fair price between them in the exchange. Thus both benefit, as opposed to the usual arm's-length adversarial bargaining outcome, where there is usually a clear winner after a deal has been struck.

Examining the impact of the social network of CEO-board interlock ties on alliance formation and co-operation, on the basis of a sample of US 'Fortune' and 'Forbes' 500 firms; a recent study has shown that such inter-relationships increase the likelihood of strategic decision making and alliance formation (Gulati & Westphal, 1999). By contrast the study suggests that distrust between corporate leaders when CEO-board relationships are characterised by independent board control, reduces the likelihood of alliance formation.

Joint problem solving arrangements are another advantage of embeddedness. Such arrangements are defined (Uzzi, 1997, p. 47) as mechanisms found in embedded ties that enable actors to co-ordinate resources to solve problems. The idea is that of buyers and sellers

working together to solve problems in the production process. Uzzi (1997) found that certain difficulties that firm's might get in arm's length economic exchanges, such as getting products out of specification are reduced. If an actor was not able to meet the requirements of its embedded customers, for instance due to some form of technical difficulty, a compromise or solution was likely to be devised between the two exchange partners.

Moving to more of an Asian focus, the analysis of the Japanese auto-industry and to a lesser extent the electrical industry by Hagen & Choe (1998) found that similar levels of trust, fine-grained information transfer and joint problem solving, faceted embedded ties existed there too. However, they related a far less rosy picture of ties based not on mutual trust, but rather one based on almost forced trust. This occurred where large manufacturers like Toyota and Mitsubishi acted as masters to a pyramid of component manufacturers under them.

The big carmakers seemed to utilise sanctions to keep their subordinates in line. For instance they found evidence that each subcontractor, from the apex of the production pyramid to its base, graded the suppliers below it. Grading criteria was based on quality, engineering specifications and delivery promptness. Each supplier periodically gets a "report card" with their grade that gave them comments on where they could improve. Firms in the chain with better grades reaped rewards of even more long-term supply contracts and more responsibility. In contrast, when a firm consistently received lower grades, it faced sanctions of less lucrative, shorter-term supply contracts and might find its standing diminished in supplier rankings (Hagen & Choe, 1998). This monitoring arrangement was also efficient for the master firm, since it only has to monitor the larger parts suppliers immediately below it in the supply pyramid and conversely every firm in the chain monitors only the companies immediately below itself. This kind of arrangement may seem restrictive. Taken in the Confucian cultural context that operates in the Japanese economy,

however, it is not so unusual. Nor is it considered overly disadvantageous by the firms that operate within such enforcement frameworks.

Grading of subcontractors alone is clearly insufficient to keep them subordinate. If information about a subcontracting firm's performance were confidential only to the particular network to which it belongs, then it would be a simple matter for the firm to jump ship to another network, since the new network would not be privileged to the information regarding its past performance. However, mechanisms like government sponsored trade associations, horizontal *keiretsu* groupings, and even sometimes social networks like the *amakudari* retirement system, where government bureaucrats retire to private industry, but maintain ties with their original government ministries, can act as a medium for fine-grained information transfer on a number of topics. Firms are less likely to defect since the knowledge of their past performance will be known industry wide through such links (Odagiri, 1994).

Other enforcement powers of the supplier networks in the auto-industry included master firms maintaining dual suppliers for any one product, so the two subcontractors can always be played one against another. This was sometimes initiated under the guise of the parent firm desiring to ensure constant supplies of what have been deemed vital parts, but in reality the measure was merely a leverage tool. Further, supply contracts seldom exceeded 12 to 16 months in length, so a contractor was perfectly within its rights to move to another contractor in short order (Fruin, 1992). In addition firms were often bound together by the tradition of long standing business ties dating back to pre-war *zaibatsu* days and subcontractors moving between different carmakers simply was not done. Moreover, master firms and subcontractors maintain cross-shareholdings between each other. These cross-shareholdings, which are still a critical component of *keiretsu* organisations, will be examined extensively in the coming chapters.

Lastly, joint problem solving was also found in the Japanese *keiretsu* network with many big manufacturers aiding smaller ones with production know how and capital. This clearly served to foster an atmosphere of trust between master and subordinate firms (Nishiguchi, 1994). It also had an aspect of coercion, since subordinate firms were indebted to their masters. Such network structures as those found by Hagen and Choe (1998) clearly have played and indeed still play a vital role in the establishment and efficient running of parts supplier pyramids in the auto-industry. Further examination of this industry will form a major component of the investigations of subsequent chapters of this thesis.

1.4 DISADVANTAGES OF EMBEDDED NETWORKS

In past literature much more emphasis is placed on the positive and advantageous aspects of embeddedness, with very little written regarding its negative attributes. For instance, Uzzi (1997), states that embedded ties promoted "economies of time, integrative agreements, Pareto improvements in allocative efficiency, and complex adaptation" (p. 35), all of which may have been significant in Japan, since the War. However, he points out that these gains only apply up to a point, beyond which "embeddedness can derail economic performance by making firms vulnerable to exogenous shocks or insulating them from information that exists beyond their network" (p. 35). In essence this may be interpreted that after a certain point a firm can become too embedded. Further, just because a network structure like the *keiretsu* is widespread in Japan does not necessarily mean that it is efficient. As DiMaggio and Powell (1983) found structures may exist simply because they are deemed to be legitimately appropriate in a given situation. Thus the prevailing culture may perceive such network forms as accepted business practice even though the said practice may not always be the best for a given situation.

Caves and Uekusa (1976) compared the profitability of a group of 243 Japanese firms. Their sample comprised both *keiretsu* and independent

firms during the period of 1961 to 1970. The basic finding of this study was that *keiretsu* affiliation decreased a firm's profitability when compared to independent firms. There was a negative correlation between group ties and profitability. Their data also hinted at there being less variability in the profits of group-linked firms.

A later study by Nakatani (1984) analysed an assortment of 317 firms, from the period of 1971 to 1982, taking up where the Caves and Uekusa study left off. This study's sample, as with the earlier study, included companies both with and without group connections. Furthermore, in this research a large number of variables were factored in, including net profits, dividend to share price ratio, the ratio of debt to equity, the growth rate of the firm in the form of market capitalisation and employee remuneration, as well as the growth in sales the firms experienced and variations in other factors like interest rates. The findings of this study were similar to that of Caves and Uekusa, with Nakatani noting that profits were largely lower for group companies, yet at the same time mean employee remuneration packages and debt to equity ratios were higher. The group firm's profits, growth rates and interest rates were also far more consistent in comparison to non-group affiliated counterparts. Nakatani concluded that companies traded off lower profitability and growth for the stability provided by group affiliation.

Two similar studies by Lincoln, Gerlach and Takahashi (1992) and Lincoln Gerlach and Ahmandjian (1996) have reinforced the findings of the previous studies of Nakatani and Caves & Uekusa, also finding that stronger firms with network affiliations act to bolster weaker network partners and this in turn proves detrimental to the stronger firm. Admittedly a study by Cable and Yasuki (1985), with overlapping data to the Nakatani research, from the years 1968 to 1978 of 89 large Japanese firms, found no significant relationship between profits and group network links. However, this study was primarily focussed on the link between multidivisional firms and financial performance and examined group

affiliation as an aside. What is more, their regression analysis of network affiliation did not perform nearly as well as their analysis of the relationship between multidivisionality and profitability. By and large though it would appear from these studies of Japanese group affiliated firms that profit maximisation conflicts with the goal of group formation, with *keiretsu* formation enhancing stability at the cost of profitability.

A recent, more microeconomic firm study of managers' networks (Gargiulo and Benassi, 2000) which uses the theory of network closure which stresses cohesion and embeddedness, contrasting it with structural hole theory which emphasises competitive advantage obtained through rapid movement of information, may also be used to highlight possible disadvantage arising from embeddedness. In this study the strength of long-term relationships, lessens the possibilities of structural holes and thus inhibits flexibility and adaptability. The paper uses an interesting turn of phrase in its title, asking the question: 'Trapped in your own net?' This thesis takes up this imagery again in its concluding chapter.

The disadvantages of embeddedness highlighted in this section are elaborated in following chapters, which form the basis of four key areas of investigation in the thesis. Points covered in these main chapters underpin the central assertion that embeddedness has been a significant barrier to economic development of a number of firms, chiefly affecting those involved in *keiretsu* networks.

1.5 THESIS OUTLINE AND MAIN AREAS OF INVESTIGATION

This introductory chapter has provided the background and motivation behind this thesis, and has introduced the concept of embeddedness. Using Japan as the prime example, the thesis attempts to identify the advantages and the disadvantages that embedded ties have caused. While Japan is utilised as the representative East Asian economy, the

discussion to follow may well be applicable to other economies in the region. It is however, beyond the scope of this study to thoroughly investigate this possibility in detail.

The following chapters of the thesis are organised on the basis of an examination of embeddedness as it applies to four key aspects of economic activity: firm interaction and interdependence in the manufacturing sector of the domestic economy; inter-firm relationships in the financial sector of the economy; the internationalisation of Japanese firms and the links between the government and business sectors of the economy.

Chapter 2 discusses the general underpinnings of network operations in the Japanese economy. It utilises examples from the Japanese automobile industry to highlight how embedded ties facilitated inter-firm interaction, especially in regard to automakers and their parts suppliers. The mechanisms that played a vital role in the formation of ties between automakers and suppliers is examined in this chapter and how these mechanisms led to the establishment of trust-based, information-sharing networks between firms is discussed. Chapter 2 also covers the disadvantages of these trusting networks between firms, highlighting how they can, subsequent to the establishment of trusting networks; hinder interaction with new firms, not already in the network. This information isolation thus makes network bound firms inflexible and less able to exploit new and lower cost opportunities.

The second key aspect to be investigated - the financial sector, becomes the subject matter of Chapter 3 of this thesis. The financial sector is a sector particularly important in Japan due to the historical tendency of Japanese firms to pay for their growth with loans rather than through other means like share portfolio offerings. Chapter 3 examines the interaction between Japanese firms and the financial sector. Embedded ties between financial institutions and their client firms play a prominent role in

Japanese business circles and the relationship between *keiretsu* firms and their main banks is particularly vital. This chapter elaborates on how embedded links lead to strong keiretsu networks being established, with central *keiretsu* banks providing direction and financial stability to other firms within the *keiretsu* network. Keeping with the general format of firstly highlighting the advantages of embedded structures in each key area and then discussing how subsequently embedded ties can lead to disadvantages, Chapter 3 goes on to show how the stability of the *keiretsu* system leads to some financial institutions making unwise lending decisions. This bad loan situation of highly embedded banks is contrasted to the less severe bad debt results of less highly embedded banks and inferences are drawn from this.

Overseas markets and internationalisation are another important component of the expansion of the operations of firms, both in providing new markets for products as well as through overseas production facilities. Chapter 4 looks at how embedded ties were instrumental in the global expansion of many Japanese firms, particularly with the assistance of *keiretsu* trading companies, the *sogo shosha*. These advantages that *keiretsu* networks provided in giving firms the resources and contacts necessary for expansion across national borders is analysed. The chapter then goes on to investigate the common tendency for established firms to supplant trading company links with their own internal networks over time. Again the disadvantages that embedded ties can cause are examined, with Chapter 4 covering the effect that they can have on areas of cross border international production and parts supply. The propensity for embedded links to lock firms into dealing with only a few select entities overseas, with which they have pre-existing relationships, is highlighted. How this can make a firms lose out on new opportunities is also discussed.

The final key aspect identified by this thesis is examined when the embedded relationship that exists between business and government in

Japan is discussed in Chapter 5. During Japan's post-war development phase, government ministries like the Ministry of Finance (MOF) and the Ministry of International Trade and Industry (MITI) played an active role in rehabilitating certain targeted industries, deemed vital for the nation's recovery. In this endeavour they were phenomenally successful. Through this proactive role that the government ministries had in developing the economy, a relationship of close embedded ties arose between firms in targeted industries and government. This was certainly advantageous during Japan's post-war development, but since that time, such relationships have become weighed down by corruption and crony capitalism. Chapter 5 employs the construction industry in Japan as a case study. An analysis of embedded ties between construction firms and the Ministry of Construction is shown to affect the nature of business dealings conducted in that sector and is used to illustrate how questionable business practices can increase construction costs.

The concluding chapter summarises the findings on the impact of embeddedness within the broad themes of the four key areas identified by this investigation. Certain negative aspects of embedded ties uncovered by the thesis are elaborated on and it is suggested that these negative aspects arise chiefly as a consequence of what is termed "atrophied embeddedness". Hence a novel contribution of this thesis is the development of the concept of atrophied embeddedness.

Chapter 2

INTER-FIRM INTERACTION

2.1 CHAPTER INTRODUCTION

The interaction of firms with one another is a vital facet of industrial organisation and is the first of the four key aspects in an economy, identified in Chapter 1 (section 1.5). Embeddedness can be a major factor affecting inter-firm interaction and in Japan it has played a very important role in controlling the actions of firms involved in *keiretsu* networks. This chapter explores some of the ways inter-firm embedded links can both facilitate and impede the outcomes of the companies involved in them.

To illustrate the advantages and disadvantages of embedded ties, examples are cited from the Japanese auto-industry, with the relationship between auto-makers and their parts suppliers especially highlighted. The importance of trust as a factor in creating embedded ties is also considered and the effects that this factor has on strengthening network bonds between firms is analysed.

2.1.1 The Nature of Trust in Embedded Networks

According to Granovetter (1985), trust between trading partners is not only influenced by factors inherent to individual transactions, but also by the variability of social culture, political climate, network links and business ethics, as well as other institutional facets in which the transaction and its transactors are embedded. Trust is a factor vital to the formation of long-

standing network ties. In such trusting relationships it is unusual for partners to break confidences between one another, or to take advantage of weaknesses that one or other partner may have.

A number of studies have noted that trust facilitates the exchange of information between network partners, which in turn can enable better co-ordination between them to curtail inefficiencies (Nishiguchi, 1994; Fruin, 1992; Clark & Fujimoto, 1991). Moreover, trust between network partners facilitates the removal of information asymmetry between them, which can be beneficial, with no firm having a major information advantage over another within an embedded network (Uzzi, 1997). However, trust between network partners may also mean that firms within a network are less likely to accept or be provided with information from firms outside of their particular network. Likewise it is far less likely for network companies to have dealings of any kind with extra-network entities, with whom there is not the same level of trust. Therefore, under different circumstances trust based networks can be either beneficial or detrimental.

A network of firms maintains trust through a number of means. In the *keiretsu* context this can mean such things as cross-shareholdings and sanctioning mechanisms like those found to exist in the auto-industry by Hagan & Choe (1998), and noted in section 1.3 of Chapter 1. Trust and trustworthy attributes can also arise through individuals deriving utility from behaving in a honourable or ethical manner (Donaldson, 1990). In Japan, research indicates that longstanding cultural precedents such as Confucianism may also stimulate inter-firm trust (Hagan and Choe, 1998). In the next section of this chapter, the mechanisms that have created these trusting network links are investigated, with the advantages they provide brought to light.

2.2 ADVANTAGES OF TRUSTING MECHANISMS IN THE AUTO-INDUSTRY

In a cross-country study of the auto-industry in Japan, Korea and the United States, the effect that five predefined factors had on trust between car-makers and suppliers was investigated (Dyer & Chu, 1996). These five predefined factors included the level of assistance provided by the auto-maker to its parts suppliers, the length of relationship that had existed historically between the two parties and the continuity of the relationship between parties (that is to say, was there a history of repeated and mostly uninterrupted dealings, on a year to year basis). Other factors examined were the prevalence of one on one personal communication between parties and the influence that stock ownership by the auto-makers in their suppliers had on the level of trust.

According to Dyer and Chu (1996) a trusting relationship can be strongly cemented between two firms if one firm provides assistance to the other. In exchanges between firms of vastly different sizes, such as between a large car-maker and its various smaller parts suppliers, if the car-maker offers free support to the supplier, this support may well be regarded as a visible sign of commitment to a relationship, especially if the assistance is perceived as being altruistic by the smaller firm. Dyer and Chu (1996) found a significant statistical relationship between the level of trust that a supplier placed in its parent auto-maker and the level of assistance which that auto-maker provided. Moreover, this relationship of assistance to trust was most significant in the Asian countries of Japan and Korea and markedly less so in the United States. When a smaller firm receives assistance from a larger company, this is unquestionably advantageous to the smaller firm, especially if technology or business know-how is transferred between the two and can be invaluable if the smaller firm is still establishing itself. Likewise the larger firm can benefit by being supplied more efficiently, perhaps with a better product and at a lower cost, depending on the sort of assistance it provides.

A network tie with a history of a number of years of interaction also has the advantage of minimizing behavioural uncertainty about the actions of one or other player, creating a more stable business environment for the network partners. This property is further enhanced by the Japanese tradition of lifetime employment, which means that the actual people involved in a buyer-supplier type relationship are far less likely to change as well. Dyer & Chu (1996) found that in the Japanese auto-industry, the average length of relationship that existed between suppliers and car-makers was the longest at 41.4 years, followed by the United States at 32.6 years and then Korea at 12.4 years. It was surmised that Korea had average ties of shorter duration due to the shorter history of the motor industry in that nation. While this length of relationship factor was found to have a positive correlation with the level of trust between suppliers and auto-makers, when the institutional environment was controlled for, then the length of the relationship's effect on the level of trust was found to be insignificant, with the practice likely to be a holdover from the nation's post-war development phase (Dyer & Chu, 1996).

Other factors that may facilitate the formation of trusting relationships between network partners are instances where exchange is repeated many times over a long period of time, with very few breaks in that exchange cycle. For instance, the rise of trust in an exchange tie is not helped to any great extent, if a supplier must repeatedly re-bid for a new supply contract every year. This supplier-buyer network tie then becomes a repeated game, as rationalised by game theory. In Japan, 90% of contracts are re-won from contract period to contract period, whereas in Korea and the United States, only 78% of contracts are re-won from period to period (Dyer & Chu, 1996). This is supported by findings from Helper (1991), which also point to the fact that Japanese auto-makers do not usually change suppliers. Repeated exchange in the same study was also found to have a significant positive correlation with supplier trust.

Another factor which may be construed as an advantage of trust in network relationships is the tendency for long-term relationships to assist in the formation of true personal ties between network transactors. This property might well again be enhanced by the Japanese tradition of lifetime employment. It is of course quite natural for transactors to behave in a trustworthy manner toward those with whom they have a personal relationship (Dyer and Chu, 1996). Related to this factor, a finding of Dyer and Chu (1996) was that in the auto-industry, face to face interaction was much higher in Japan and Korea, than in the United States, but it did not seem to have a significant impact on predicting higher or lower levels of trust. Rather it seemed to be a product of the close geographical proximity, especially in Japan, of suppliers to auto-makers. It would seem also that this geographical proximity is a function of the overall embedded links prevalent in Japan and Korea. Thus while face to face interaction is more prevalent in the Asian auto-industries than in the U.S. and while it has likely arisen through embedded institutional norms, such as life-time employment and other Asian business practices, it does not facilitate trust to any great degree. However, it is a contention of this chapter that personal interaction is advantageous in facilitating speedy and amicable business deals between network partners.

The last factor assessed by Dyer and Chu (1996) was the influence of trust between network partners fostered by the existence of cross-shareholdings between them. Historically this has been a key mechanism in cementing together bonds in the *keiretsu* system and has its roots in the 1950s. During this time large manufacturing firms were prompted by the imminent freeing up of foreign investment regulations to heavily invest in their subcontractors to prevent them from falling into overseas ownership and also to assist in the transformation of *zaibatsu* groups into *keiretsu* conglomerations after the occupying forces banned holding companies (Hagen & Choe, 1998).

If a network partner behaves in an opportunistic manner, then the value of their shareholdings in their network partners are likely to diminish, so there is a financial incentive not to cheat on them and to learn to trust them (Dyer & Ouchi, 1993). Japanese auto-makers were found to have by far the highest instance of ownership in their parts suppliers, with Toyota having a 28% stake in its suppliers, Nissan a 30% holding and Honda a considerable 38% stake (Redl, 2000). Interestingly, cross-shareholding mechanisms were not found to facilitate trust to any significant degree (Dyer & Chu, 1996). However, the degree of control that car-makers have over their part suppliers through cross-shareholdings, can certainly be advantageous by guaranteeing a stable supply of quality parts (Hagen & Choe, 1998).

2.3 DISADVANTAGES OF EMBEDDED TIES

To reiterate the findings of Dyer and Chu (1996), as noted in section 2.2, trusting network bonds can be cemented by the larger firm in a network pairing providing benevolent assistance to the smaller firm in the pair. Taking up this thread in the Dyer and Chu argument, this thesis contends that while the provision of assistance by larger firms to smaller ones may prove beneficial in supporting a trusting relationship and in the case of auto-parts suppliers, ensure a continuity in the supply of quality car parts, it may also prove a hindrance, particularly in recessionary times. In such times of economic downturn, it may be necessary to pursue more cost effective solutions and existing network partners may not necessarily provide these solutions.

Dyer and Chu (1996) noted that repeated exchanges between buyers and suppliers can build trust. However, while repeated exchange leads to increased trust, it also means that auto-makers were prevented from interacting with possibly more cost effective suppliers outside of their usual networks. To this end Table 2.1 shows the increasing cost per production unit (an automobile) from the 1997 financial year to the 2001 financial year

(1999 to 2001 are estimates). In 1998, Toyota had the highest per unit material costs of any of the five largest Japanese auto-makers and it is projected to have ever increasing costs. This is primarily due to the fact that Toyota has said that it is committed to maintaining lifetime employment and its existing supplier structures, and thus continuing the trend of repeating exchanges with current suppliers[1]. Nissan on the other hand has adopted a policy of rationalising supplier arrangements and downsizing its workforce[2]. As table 2.1 clearly shows, this is expected to have a pay off in Financial Year 2001, with production costs starting to trend down after these restructuring initiatives have had time to take effect.

Table 2.1

Material Costs Per Domestically Produced Vehicle at Japan's Big-5 Car-makers (US Dollars)

	Dollar Denominated Material Costs/Unit Output (Parent Company)					% Change YoY		
	FY97	FY98	FY99E	FY00E	FY01E	FY99E	FY00E	FY01E
Toyota	$11,698	$11,949	$13,566	$15,155	$15,459	13.5%	11.7%	2.0%
Nissan	$12,052	$11,539	$12,843	$13,081	$12,166	11.3%	1.9%	-7.0%
Honda	$10,203	$9,649	$10,847	$11,999	$12,119	12.4%	10.6%	1.0%
Mistsubishi Motor Corporation	$10,770	$9,632						
Mazda	$10,045	$9,161	$10,197	$11,168	$11,168	11.3%	9.5%	0.0%
Average yen/dollar rate	122	128	115	105	105	-10.2%	-8.7%	0.0%

Source: Redl, 2000, p. 20, Exhibit 20 (FY = Financial Year, YoY = Year on Year)

In addition to increasing the level of trust, the practice of having long standing embedded links between suppliers and buyers, coupled with the tradition of buyers providing assistance to suppliers, meant that during Japan's post-war development period, auto-makers could benefit from flexibility in the implementation of new vehicle designs and parts suppliers were likewise assured of orders and financial stability (Redl, 2000). However, in recent times it appears that this practice has led to a glut of smaller, less efficient firms in the domestic Japanese auto-parts market.

[1] Toyota is able to carry higher costs due to its consistent market leadership and higher profits; however, its costs could still be lower.
[2] Renault acquired a controlling 36.8% stake in Nissan Motors in May 1999 and embarked on a restructuring process (Renault, 1999).

Each auto-maker has its own distinct supplier infrastructure, which results in a large number of smaller suppliers, supplying only a single auto-maker, rather than a smaller number of suppliers servicing more than one auto-maker, as is the case in other markets. Table 2.2 shows a comparison of Japan with Europe and North America with regard to this aspect. For instance, there are 20 car seat suppliers in Japan, to North America's 6 and Europe's 3. Likewise there are more suppliers in Japan than in Europe or North America for airbags, brakes, fuel pumps and climate controls.

Table 2.2

The number of suppliers in Japan, North America and Europe

Vehicle Output/Supplier by Country

	No. of Players			Vehicle Output ('000 Units)/Player		
	Japan	North America	Europe	Japan	North America	Europe
Seats	20	6	4	502	2,673	4,326
Airbags	12	7	5	837	2,291	3,461
Brakes	11	8	7	914	2,005	2,472
Fuel Pumps	10	6	7	1,005	2,673	2,472
Climate Control	8	6	6	1,256	2,673	2,884
Mufflers	7	5	7	1,436	3,208	2,472
Clutches	4	6	5	2,512	2,673	3,461
Car Lights	3	8	6	3,350	2,005	2,884

Source: Redl, p. 11, Exhibit 10

Furthermore, table 2.2 shows how the number of suppliers per volume of vehicles produced is also much lower in Japan than in either Europe or North America in most part types. This trend is likely to be because each car-maker has its own exclusive supplier for every component. Each supplier then forms a dyadic relationship with a single car-maker for the part they specialise in manufacturing. Suppliers then have a guaranteed market for their components, which could lead to inefficiencies arising at the supplier end, since suppliers may have no real incentive to cut costs. This could also be seen as defacto vertical integration by the automakers,

defacto because their suppliers are technically still independent agents. Moreover, the auto-makers can then exert monopsony power over their suppliers, which may be severely disadvantageous to the supplier. Having so many suppliers for similar products can also mean a duplication of resources across the industry and may result in a loss of efficiency gains that economies of scale might otherwise yield.

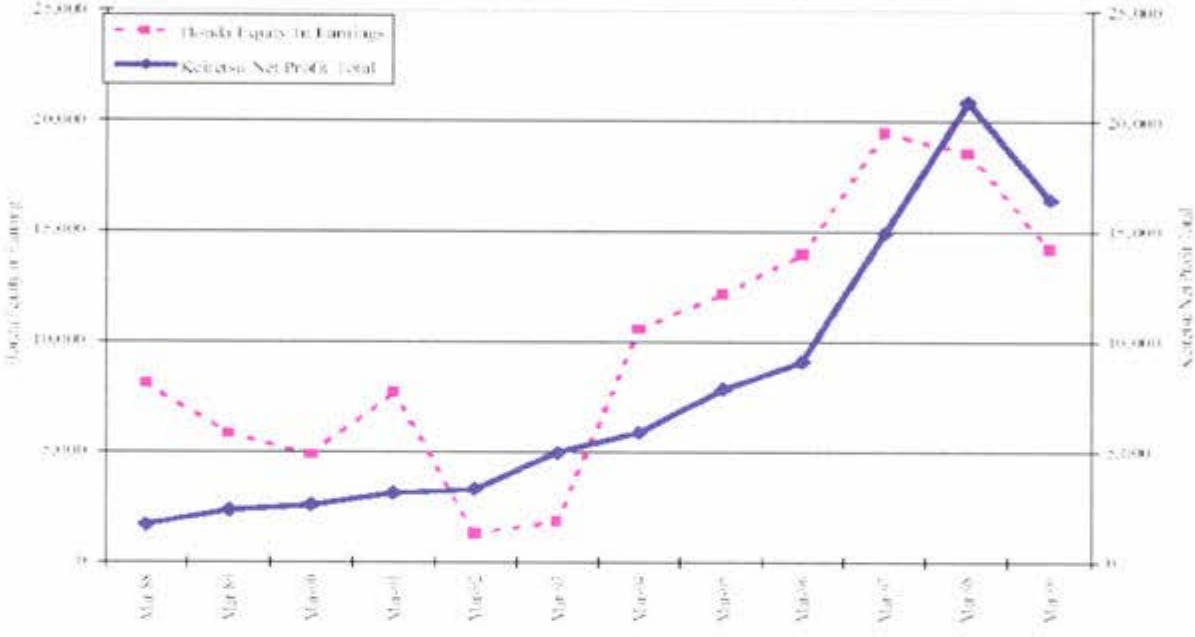
Dyer and Chu (1996) also assessed the value of creating inter-firm bonds through cross-shareholdings. It was found that Japanese auto-makers had the highest level of stake-holdings in their parts suppliers of any of the three countries included in the study. As noted, this shareholding prevalence had very little effect on the level of supplier trust and it was assumed that such holdings were a hold over from the post-war period. Such holdings did seem however, to provide some benefit in the form of creating a very effective instrument for car-makers to exert control over their suppliers (since they usually hold a larger stake in their suppliers, than suppliers hold in the main car-makers). It is a contention of this chapter that the benefits gained from having assets tied up in cross-shareholdings are easily outweighed by the gains that could be realised if these same assets were utilised more constructively elsewhere. The disadvantage of owning one's suppliers is clearly demonstrated by figure 2.1 below, where the Honda, Toyota and Nissan automotive *keiretsu* group's total supplier net profits are graphed versus the respective parent company's earnings from its equity holdings in these suppliers.

Figure 2.1

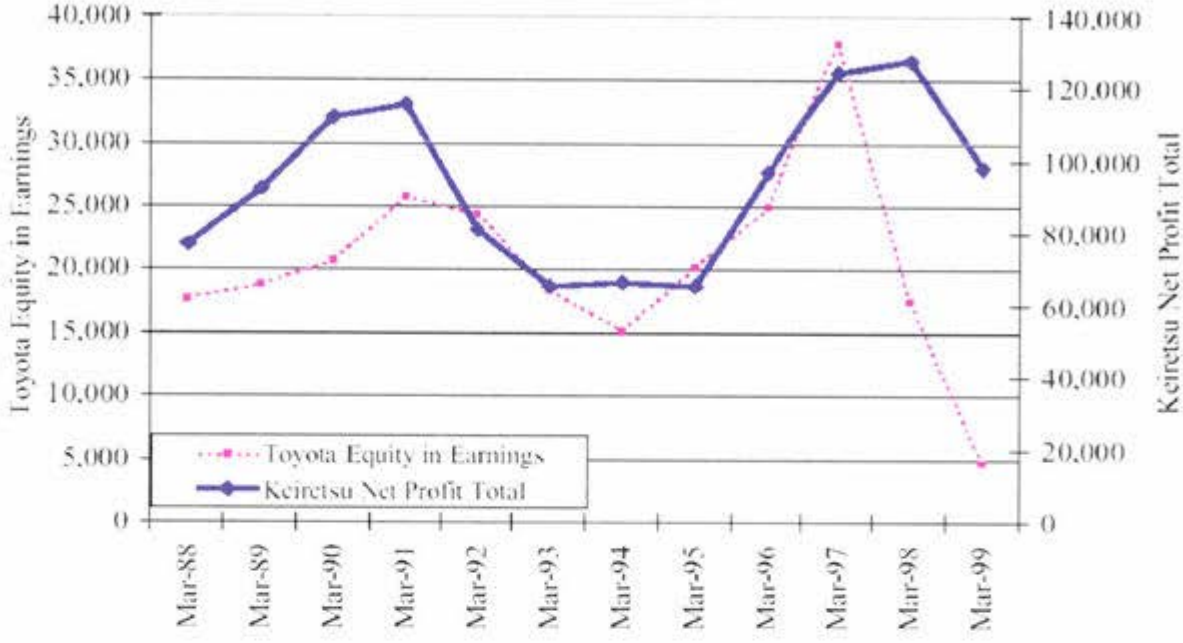
Keiretsu Supply Groups' Net Profit

vs. Parent Company's Equity Income

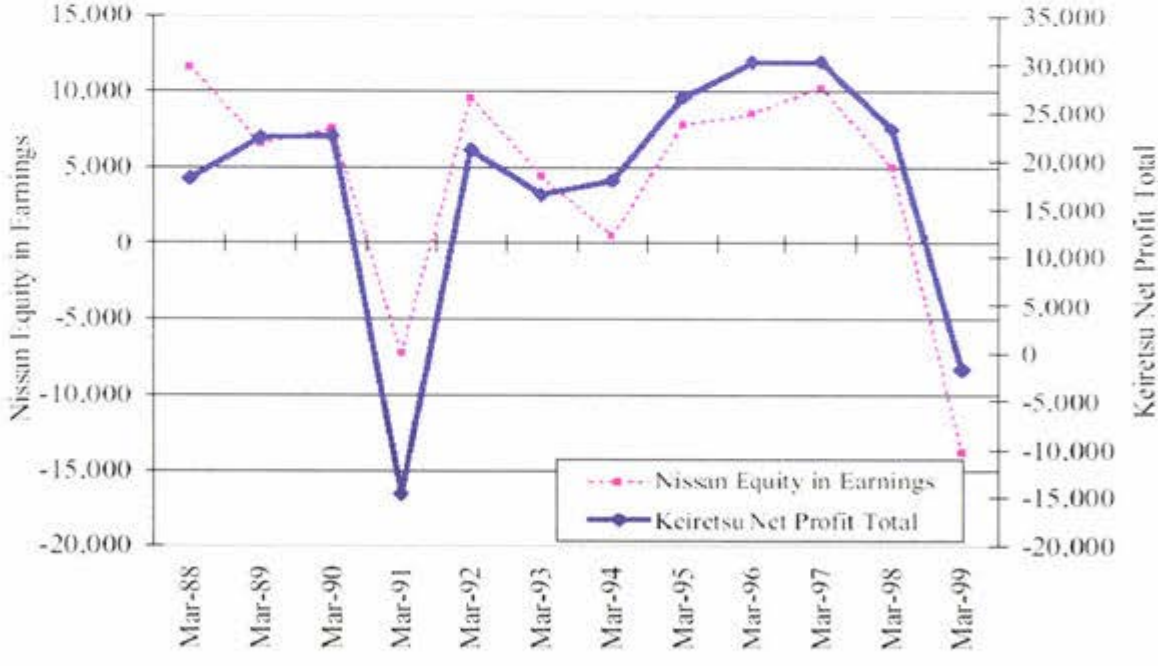
Honda Group



Toyota Group



Nissan Group



Source: Redl, 2000, p. 19, Exhibit 18

As can be seen from figure 2.1, when supplier profitability goes up or down, equity earnings of the parent also increase or decrease, which means that any appreciation or depreciation in the value of the high cross-

shareholdings that automakers hold in their suppliers is strongly influenced by group profitability. Over recent years profitability and earnings have sharply declined, hinting at the possibility that there may be better investments available than cross-shareholdings, which exist only for control purposes and not to build trust. Furthermore, the flexibility in the course of action an auto-maker can take in any procurement cost cutting initiatives are limited by the fact that any money saved by the parent firm, which results in reduced earnings by its parts suppliers, adversely affects the parent's earnings from its supplier equity holdings. This further weakens any advantage that increased control might yield. Given these limitations, therefore, the opportunity costs of auto-makers maintaining shareholdings in their parts suppliers is too high.

2.4 CHAPTER CONCLUSION

In summary, it would appear that there are a number of mechanisms in place to foster trust between auto-makers and suppliers, especially in Japan. These mechanisms were historically important for the Japanese auto-industry to establish itself after the war. Car-makers assisting suppliers, ensured stable good quality parts for their cars, as well as aiding in the development of a strong parts supply infrastructure. Other factors like repeated exchange with the same partner over a long period of time, minimised supplier uncertainty, as suppliers could always be sure of a certain level of business. Also, cross-shareholdings between suppliers and auto-makers aided in *keiretsu* formation and helped car-makers control their suppliers, minimising any uncertainty which the auto-maker might have in a supplier choosing to supply another car-maker.

These mechanisms were undoubtedly crucial in building trust and with trust, strong network bonds during the critical time of post-war recovery. However, as was found by Dyer and Chu (1996), many of these mechanisms have in more recent times become somewhat

disadvantageous, and may no longer facilitate trust to any significant degree. Providing assistance to suppliers may have high opportunity costs, as may the continuation of long standing supply contracts, since there may be lower cost sources of parts available elsewhere. Cross-shareholdings may be similarly wasteful, with more productive investments likely possible.

The auto-industry represents only a small portion of the output of the Japanese economy. However, *keiretsu* cross-shareholding arrangements are common in many sectors and it is a contention of this thesis that similar inter-firm interaction probably occurred in many other industries and resulted in similarly disadvantageous outcomes.

Chapter 3

FINANCIAL SECTOR EMBEDDEDNESS

3.1 CHAPTER INTRODUCTION

This chapter carries further the overall theme of the thesis that embedded ties can help facilitate growth but after a point or under certain circumstances, they may also prove to be an impediment. It examines embedded ties operating in Japan's banking sector in order to determine the extent to which these links yield benefits and yet could act as constraining elements.

Another theme that pervades this thesis is the idea that embeddedness can hamper corporate flexibility. The elements involved in embedded ties can create rigidities that inhibit the ability to react to changing circumstances of the embedded actors. Embedded structures in the Japanese financial system are used in this chapter as examples to illustrate this inherent inflexibility arising from embedded ties.

Banks and finance provided through bank loans have a significant influence in the Japanese business environment. Until the 1980s when the financial sector was deregulated,[1] the Japanese system of corporate finance was different from other developed country systems. It was

characterised by a high dependence on external funding in the form of bank loans rather than finance through equity, bonds or retained earnings (Suzuki, 1987, Hoshi Kashyap, & Scharfstein, 1990a). The 'main bank' was the chief lender, debt holder, and shareholder of a corporation.

There are six main bank-centred financial *keiretsu* - the "big-six". These are: Mitsui, Mitsubishi, Sumitomo, Fuyo, Dai-Ichi Kangyo (DKB) and Sanwa. Toyota for instance, is a member of the Mitsui, with Sakura Bank at its centre group and likewise Nissan is associated with the Fuyo Group, which has the Fuji bank at its core.[2] In addition to the six main *keiretsu* banks, there are a number of other financial institutions of varying size, which also have similar *keiretsu* structures.

This chapter commences by highlighting many of the beneficial facets of the bank centred *keiretsu* formations identified in the existing literature. The chapter then moves on to its main purpose: to draw out the possible financial liabilities that could arise from these embedded interdependencies.

3.2 BENEFITS OF BANK CENTRED *KEIRETSU*

The embedded relationships that exist between *keiretsu* banks and their client firms have a number of positive effects which can lead to added growth and better focus and direction for the group as a whole. This section explores the multi-faceted relationships between *keiretsu* companies and their group banks and highlights the key benefits of these relationships.

---

[1] Deregulation commenced with a decade long process of dismantling a host of rules and regulations relating to corporate financing. It has led to a reduction in the number of firms with a main bank and average debt-asset ratio of large Japanese firms (Schaede et al., 1997).

[2] A recent development is the merger of Fuji and DKB *keiretsu* banks with the Industrial Bank of Japan, forming Mizuho, which asset wise, as at Oct 1, 2000, was the world's largest bank. Burdened with debt and technologically backward, Mizuho is not considered much of a threat by European or American banks (Fulford, 2000). Sumitomo Bank, the main bank of the Sumitomo Group and Sakura Bank, the main bank of the Mitsui *keiretsu*, are also going through merger talks (Retail Banker International, 1999).

Officially members of a *keiretsu* combine are all totally separate entities, however, they may often share the same name, as is the case with many Mitsubishi group companies, have large cross shareholdings in one another and depend on one another for the purchase of a large proportion of their production. Consequently, the performance of one company can have a significant effect on the financial fortunes of others within the group. There is therefore a need for an entity to police the activities of companies within the group structure and bring in check businesses that stray away from group goals or start to become less profitable. Through the finance it provides, and the shareholdings it possesses in its group affiliates, the central *keiretsu* bank is able to exercise a great deal of influence over all companies within its respective combine. For instance, it is not unusual for bank employees to occupy a number of seats on the board or even line management positions in its client companies. Using its role as a provider of finance and also as a holder of equity in its client companies, the central *keiretsu* financial institution is able to facilitate long-term focussed activities which can involve a great deal of collaboration amongst group companies.

Another function of the main bank is providing venture capital. The bank, because of the knowledge it has on market conditions, the intelligence it holds regarding group firms that constitute a particular market and the monitoring mechanisms in place to keep group firms in place, is able to more easily see the investment potentials of its client firms. Whenever a group company needs a large injection of capital for some major research and development project or other expansion, the main bank is there with near complete knowledge of a firm and readily able to provide finance to the companies with which it has embedded ties. Moreover, on the recommendation of the bank, additional capital is also more readily available from other group companies (Miyashita and Russell, 1994).

The *keiretsu* bank acts as a scrutinizer of group company performance and has an important monitoring role (Sheard, 1989; Berglof & Perotti 1994). By removing the barrier between the roles of shareholder and creditor and between investor and customer or supplier, the bank then becomes a conduit through which detailed business intelligence relating to the inner workings of distinct group firms is transferred from one partner to another. This sharing of knowledge that the bank facilitates becomes a mechanism through which group members are able to mutually monitor one another (Berglof & Perotti, 1994). This mutual monitoring arrangement has some distinct benefits as it imposes individual discipline on its members and ensures that both financial and non-financial companies within the *keiretsu* group regularly monitor the situations of other group firms.

Even with the wealth of information that a main bank may hold on its client firms, the knowledge that other *keiretsu* firms, which deal one on one with each other may be even greater. Non-financial firms within a group have the ability to observe such things as the timeliness and quality of finished goods received from other group members, as well as the capacity to have a clearer understanding of market conditions, as they actually deal in the market and are subject to its commercial realities. Further, this in-depth market knowledge that group companies operating in the same market possess, enables them to better distinguish between managerial incompetence and poor market conditions, than would be the case if monitoring was purely left to the central bank (Berglof & Perotti, 1994, p. 276). Thus a firm that is experiencing difficulties due to poor management rather than from market downturns can be dealt with more effectively. Moreover, when there is a main bank there is an overall monitoring process (Diamond, 1984). Since the bank obtains its funds from outside investors, the bank must monitor group members on behalf of these investors. Then the outside investors themselves can realistically be expected to keep a watchful eye on their investment vehicle - the bank.

The bank is also subject to the prudential supervision of the regulatory authorities.

Berglof & Perotti (1994) illustrate the *keiretsu* governance model of cross-share holdings of both equity and debt, with a main bank at its core, by utilising game theory. Their model, which utilised repeated games, showed that a cross-shareholding coalition, with a central role for main bank lending, is an effective collective enforcement mechanism. While in the multiple equilibria situation some inefficient outcomes occur, they show that a sufficiently high level of leverage with concentrated debt holdings by a financial intermediary can mitigate moral hazard and produce controlled benefits which are effective in disciplining managers. A coalition of managers who collaborate through a redistribution of voting rights also discourages opportunistic behaviour. A minimum size of the coalition is however, necessary to support collaboration. Since managers risk losing their control benefits to the group's main bank they have a strong incentive to make debt repayments and perform.

In addition to monitoring group companies and providing loans, the banks fulfil the regular banking services of group companies, holding deposits, managing retirement funds and providing general financial advice. The bank also has a role in co-ordinating the equity cross-shareholdings in a *keiretsu* group through its various monitoring mechanisms. Cross-shareholdings of one firm in another means that group firms have reciprocal voting rights as shareholders in one another. By pooling the sum total of all their voting rights, often in co-ordination with the bank, any firm within the combine can be forced by the collective will of the majority of the group to take actions that may not be in that firm's best interests. Likewise any manager that deviates from the goals of the collective can be dispensed with (Berglof & Perotti, 1994).

For the day-to-day trading of *keiretsu* firms, it is usual to extend credit to customers, who buy on this credit and are then invoiced at the end of each

month. Trade credit is organised such that each member extends trade credits to other members of the group, the main bank then guarantees these credits. Since the bank carries most of the lending risk, the exchange of information concerning financial stability is much more open among group companies. This also has the effect of further magnifying the bank's influence among its client firms. As such, it is able to intervene at the smallest sign that a firm may be experiencing financial difficulties (Berglof & Perotti, 1994). With stringent control mechanisms such as these in place, the costs incurred by all parties when a company gets into difficulty are much lower. Significant benefits arise from shared liability arrangements and early intervention in times of distress, which produces a more stable, yet lower level of group profits (Nakatani, 1984; Hoshi, et al., 1990b; Berglof & Perotti, 1994). It is however, contended in the following section that this lowered level of profits could well prove to be a liability in difficult economic times.

Supplementing the findings of Berglof & Perotti (1994), a number of additional studies have identified advantages that the financial *keiretsu* system yields in addition to stability. For example the Caves and Uekusa study (1976), found that the system tends to act as a conduit through which bilateral trade is encouraged and through which various investment strategies can be co-ordinated. Other studies have found that the leadership provided by the bank-centred system acts to provide procedures through which a group can protect itself from encroachment and hostile takeover from outside entities, and in addition, enable mechanisms that allow the burden of any risks to be shared among many group members (Aoki, 1988; Sheard, 1989, 1994). Uzzi (1997, p. 52-54) provides a discussion of the benefits of risk taking and sharing. This is seen as a benefit that comes from embedded ties, whereby the collective resources of firms within an embedded network are able to share the burden of risk particularly of major investments. Uzzi also elaborates on how sharing investments acts as a mechanism to bolster already existing networks ties. Generally it is asserted that overall, the Japanese main

bank system has been of benefit to the development of the economy (Aoki & Patrick, 1994).

3.3 DISADVANTAGES OF FINANCIAL *KEIRETSU*

In general, the group central bank serves as a co-ordinator of financial resources in times of economic downturn, acts as a provider of venture capital to firms starting out and generally provides leadership within the group. However, it is a contention of this chapter that the mutual monitoring system and other mechanisms focussed on central *keiretsu* financial institutions can also prove to be a disadvantage. While the bank monitoring service ensures that group firms follow the intended direction of the overall group, it can also mean that promising opportunities for individual firms, which may perhaps go against the overall direction of the group, are not always fully exploited.

Easy access to capital and the banks willingness to lend it, due to its cosy embedded relationship with its client firms, can lead to the bank and group firms over-extending themselves and making less than wise decisions. Lax reporting standards from and poor enforcement by Japanese banking authorities can likewise lead to less than desirable outcomes. Indeed, in March 1998, all Japanese deposit accepting institutions held a total of 87.5 trillion yen in problem debt, which constituted 11% of all loans (Zielinski, 1998). While other factors were no doubt also responsible, the embedded structure of the Japanese banking system must surely have been a major contributing factor to this substantial amount of problem debt.

Table 3.1 below provides a detailed breakdown of the loan status situation. This table reveals that the major banks have a higher bad loan percentage of 11%. Interestingly, group 1 regional banks, the more substantial grouping of larger banks not based in the big cities with fewer *keiretsu* affiliations have a somewhat smaller sub-standard bad loan

percentage of 10%. Group 2 regional banks have on the other hand, a higher bad loan percentage of 12%, but this group is made up of a large collection of smaller regional institutions that while they are less encumbered with embedded ties, lack the resources of the larger regional banks and it is a contention of this chapter that they may have in many cases had to accept higher risk borrowers. The following section 3.3.1 comments on the outlook of these regional banks.

Table 3.1

Loan Breakdown of Japanese Financial Institutions as at March, 1998

Trillions of yen	Total Credits	Category 1	Category 2	Category 3	Bad Loan % incl. Cat. 2 & Cat. 3 loans
Major Banks (19)	452.3	402.0	45.4	4.8	11%
Regional 1	145.5	130.2	14.4	0.8	10%
Regional 2	50.6	44.3	5.9	0.4	12%
All banks	648.5	576.5	65.7	6.1	11%
Cooperatives	146.6	130.9	14.8	0.8	11%
Shinkin	74.6	64.4	9.8	0.4	14%
Credit Coop	15.3	12.8	2.2	0.3	16%
Agri Coop	30.0	28.6	1.3	0.0	4%
Total	795.1	707.5	80.6	6.9	11%

Definitions as follows:

Category 1 (Sound): Good Loans. Category 2 (Substandard): Loans that might go bad but are not yet bad. Category 3 (Doubtful): Loans where banks expect losses, not yet estimated.

Source: Zielinski, 1998, p. 3, Figure 1

The entrenched ownership patterns in the banking sector, coupled with the bank centred cross-shareholding system lowers the possibility of shareholder censure of the conduct of banks. As seen from table 3.2, overleaf, in a seven-year period, from March 1992 to March 1999, the percentage of shareholdings of the top ten shareholders in the main city banks remained largely unchanged. This is despite the fact that during this period, many of these banks posted significant losses.

Table 3.2

Top ten shareholders of the main City banks

	March-92	March-98	% Change
DKB	22.0	22.2	0.2
Sakura	21.8	22.3	0.6
Bank of Tokyo Mitsubishi	28.4	26.6	-1.8
Fuji	23.6	23.0	-0.6
Sumitomo	26.9	25.9	-1.0
Daiwa	21.4	20.1	-1.4
Sanwa	23.2	22.9	-0.3
Tokai	24.3	23.4	-0.9
Asahi	22.1	22.8	0.6
Average	***23.7***	***23.2***	***-0.5***

Source: Zielinski, 1998, p. 9, Figure 6

Most of the top ten shareholders in these financial institutions are fellow *keiretsu* members and these *keiretsu* ties can endear considerable loyalty among group members, such that even in the face of mounting losses, caused by loans going bad, they maintain their not inconsiderable shareholdings. Although difficult to document, several casual accounts suggest there is a strong possibility of:

> a continuation bias, i.e. non-viable firms may be kept alive longer than they should be. Since creditors are also long-term suppliers and/or customers (as well as shareholders), they may have sunk interests in the firm different from those of a 'pure' creditor (Berglof & Perotti 1994, p.281).

While the long-term ownership commitment facilitated by embedded ties has usually been considered an advantage in recent years, it now may be argued to be more of a hindrance to the financial recovery of Japan's fragile banking system. This shareholder loyalty prevents the financial institutions from being bought and restructured by entities outside of the *keiretsu*, and in addition, means that existing management faces very little pressure from its shareholders to take action. Even if a bank's shareholders know the full extent to which a bank is suffering financial distress, because of the loyalty they have to embedded ties, they are unlikely to act. Moreover, due to the persistent ownership of bank stock by these loyal *keiretsu* members, the stock prices are prevented from falling

to levels that might attract new investment. Furthermore, due to the commitment the bank's have to their *keiretsu* affiliates they are prevented from issuing new stock in order to recapitalise, since that would diminish the value of their affiliates equity holdings (Zielinski, 1998).

Another detrimental effect of long-standing embedded relationships in the *keiretsu* context, is that it can lead to a stifling of growth of firms that do well, while at the same time propping up group firms that are not doing as well. This results in a levelling out in performance of group members. A key reason for this performance levelling is the fact that group firms are obliged to bailout one another in times of difficulty. Should a group firm get into trouble, other *keiretsu* companies will almost certainly increase the amount of shares they hold in that company, as well as write-off some or all the intra-group debt such a company holds. For instance, Sakura bank, the main bank of the Mitsui group had in 1998, a total of US $5.6 billion in securities losses and US $10 billion in bad loans. To help bolster its dire financial situation, the bank sought to raise US $2.6 billion through a share issue that group members were expected to subscribe to. The bank expected Toyota, Japan's number one carmaker, to be the largest subscriber. This was a move strongly resisted by Toyota, which cited the fact that it had already invested US $1 billion into other ailing Mitsui group members in the last year alone (Thornton, 1998). Another instance occurred in the Mitsubishi group in 1999, when troubled wire maker the Dai-Ichi Denko Company received a US$150 million cash infusion from Mitsubishi Electric and had a total of US $92 million in debt written-off by the Mitsubishi main and trust banks (Bremner, Thornton & Kunii, 1999). Clearly if *keiretsu* groups were not bound together by embedded ties and if the members were instead independent companies like they technically were supposed to be, it would have been unlikely such large scale financial bailouts would ever have occurred.

From a perspective of economic theory, it may be argued that each of the financial *keiretsu* is operating within a self-contained monopoly market

when servicing their group clients. Research findings on the impact of market structure in the banking industry have shown that increased banking competition has an impact on risk taking by banks (Gehrig, 1996; European Central Bank, 1999). There is thus a trade-off between competition and financial sector stability. This implication would, however, run contrary to the argument implied here: that embedded ties and the monopoly market therein is detrimental to financial stability and contributes to banking losses. Nevertheless a very recent study has shown that there is no trade-off between competition and financial fragility (Koskela & Stenbacka 2000). The study demonstrates that there are definite gains from competition in the banking industry. It concludes that the introduction of lending rate competition into the credit market both reduces the lending rates and generates higher investments without an increased risk of bankruptcy. This also confirms the inference that the monopolistic financial *keiretsu* operations are both costly and a threat to stability.

3.3.1 Innovative Regional Banks

Not all banks in Japan are beleaguered by embedded *keiretsu* ties. While in the big cities like Tokyo and Osaka, the troubled *keiretsu* banks undergo massive mergers and restructuring, there are some banks in the regions which are doing comparatively well. Among them are the Suruga Bank and the Bank of Fukuoka. Suruga whose base of operations is in the eastern Shizuoka Prefecture and Fukuoka, based in the Fukuoka Prefecture, are in areas apart from the main centres.

The Bank of Fukuoka has embarked on an aggressive strategy to rid itself of bad debts, writing off loans and divesting itself of much of the cross-equity holdings it once held in other firms within its sphere of influence. It has embraced technological initiatives and has invested in telephone and Internet banking, something the larger city banks have been slow to do. Suruga bank has similar drives in progress and was also an early adopter of Internet banking (Retail Banker International, 2000).

Suruga bank has also made advancements in the promotion of its employees, promoting managers based on their performance, rather than seniority in the firm, the practice in Japanese business circles. Likewise Suruga has taken steps to distance itself from *keiretsu* ties and instead relies on its aggressive business plan to keep it ahead of the competition. Instead of depending on *keiretsu* ties to provide a captive market for its products and services, the bank has a number of marketing drives to forward its brand name and research projects to find what its potential customers really want. After several fact finding visits to North America, circa 1995, the management team at Suruga implemented a sophisticated client tracking database that enabled them to keep track of the latest developments of its current and potential clients. With this database infrastructure in place they were able to formulate a strategy that involved aggressively targeting small and medium sized companies as well as individuals who were not necessarily previously involved in any embedded *keiretsu* ties with the bank. This is something that the main city banks have been slow to do (Retail Banker International, 2000). The innovative stance of these regional banks thus is illustrative of adaptability and greater flexibility possible when embedded ties are loose.

3.4 CHAPTER CONCLUSION

In line with the central theme of this thesis, this chapter has pointed to possible negative consequences of *keiretsu* affiliations despite the benefits that accrue to such bank-centred agglomerations. The chapter referred to the high degree of bad debt carried by the majority of banks, likely caused by their eagerness to lend to fellow *keiretsu* members. By contrast, regional banks, with weaker embedded ties, had a greater degree of flexibility in that they were more innovative in seeking more profitable new business and adopting technology than their big city counterparts.

The chapter also highlighted that the bank-centred structure appears to instil a high degree of loyalty in its group members. Group members maintain shareholdings in their bank even in the face of increasing bad debt and reduced profitability. This begs the question that surely in times of economic downturn such equity holdings could be placed in something superior to an under-performing bank? Additionally, cross-shareholdings throughout the *keiretsu* group prevent firms from recapitalising via portfolio offerings. The property of embedded ties that leads to the stifling of growth among group firms was also investigated. This was often caused by the obligation of firms to prop-up weaker ones. In some cases, as in the case of the Mitsubishi group, that weaker firm could well be the main bank. Finally, it was asserted that the monopoly nature of the financial *keiretsu* system could well be a factor that adds to financial fragility.

As a concluding comment it may be stated that the situation appears to be bleak for the Japanese banking system, dominated by institutions shackled by their embedded *keiretsu* ties. The banks themselves are poorly managed, unprofitable, largely backward and uncompetitive on a worldwide scale. They carry trillions of yen in bad debt, run up by their *keiretsu* affiliates, who in the past, with virtually free access to funds, over-invested in marginal projects, which yielded a poor return on capital. Recently there have been efforts to consolidate bad debts, with the merger of a numbers of banks now in progress. Sumitomo and Sakura banks, and the main banks of the Sumitomo and Mitsui *keiretsu* are set to merge to form a new banking entity to be named Mitsui Sumitomo (Makino, 2000). Likewise Dai-Ichi Kangyo Bank of the DKB group, Fuji Bank of Fuyo and the Industrial Bank of Japan, are set to form Mizuho Bank (Fulford, 2000). Despite these fledgling mergers, much work still needs to be done before these *keiretsu* centred giants are globally competitive. For instance Mizuho has been likened to three drunks in a ditch who are trying to stand up and estimates do not have it shaking its debt burden until at least 2005 (Fulford, 2000).

Chapter 4

THE IMPACT OF EMBEDDEDNESS IN GLOBAL MARKETS

4.1 CHAPTER INTRODUCTION

This chapter moves the discussion of embedded ties into the international arena, investigating how embedded links affect the operation of multinational firms. In Japan large firms, just like other large firms around the world, have a multitude of concerns, both production and marketing oriented, throughout the globe. In this chapter some of the relationships between Japanese firms and their associates on a worldwide scale are examined. The main proposition put forward will be that embedded ties can make a multinational firm less flexible and responsive to change than its global opposition. In this regard the relationships cultivated by multinational firms will be examined and the way in which embeddedness can either facilitate or impede a multinational's actions will be investigated.

Increasingly the global operations of many large firms are beginning to amount to ever-greater proportions of their total revenue and sales volumes. Correspondingly the overseas plants and production facilities of these same firms, due to such factors as lower labour costs and more accessible raw materials, are accounting for progressively more of their production capacity. This trend is especially marked in countries like Japan, which have a crowded and highly competitive (at least between

industrial groupings, if not within them) domestic market and must in many cases rely on overseas expansion for further growth.

During the expansion of their global operations, multinational firms often face regulatory barriers in the domestic markets they attempt to enter. Using mostly examples from the motor vehicle industry, this chapter will investigate aspects of the embedded links between large parent auto companies, their overseas subsidiaries and their ties with parts suppliers and component makers, both domestic and foreign. The advantages that these networks provide in the facilitation of globalisation will first be examined, and the various aspects of the *keiretsu* infrastructure that assist in global expansion and growth, such as the trading company system, will be looked at. However, it is then argued that the predilection for confining business to network associates may also be at the expense of reduced flexibility.

4.2 BENEFITS OF EMBEDDEDNESS IN GLOBAL MARKETS

The existing literature has stressed the importance of business networks in the internationalisation of manufacturing firms (e.g. Johanson & Mattson, 1988; Chetty & Blankenburg Holm, 2000). Existing business ties act as a bridge to enter new international markets (Blankenburg Holm et al., 1997).

Networks have played a key role in the global spread of the activities of Japanese auto-makers. Faced with a crowded, extremely competitive domestic market and with high domestic production costs, these firms long ago found it necessary to explore opportunities overseas, both for new markets for their cars and also for expanded production. In their various endeavours to set-up production and distribution ventures, the auto-makers encountered a number of obstacles in the countries they expanded into. For instance, in order to support local industry, automobiles

sold in some countries may require that a certain percentage of a vehicle be produced in that country. They might also have trade policies such as tariff barriers in place to discourage the import of foreign vehicles that might otherwise compromise that country's already established car industry. Malaysia for example has a 70% tariff on some components and car kit sets (Reyes, 2000).

To ensure the stable supply of components for their vehicles, Japanese auto-makers have a network of suppliers with whom they have longstanding production arrangements, as noted in Chapter 2. However, when faced with such regulations in a country into which they desire to enter, alternative domestic suppliers and supply agreements with them must be arranged. Moreover, even in cases where regulations do not force auto-makers into securing local suppliers, it may be more cost effective due to logistics and transportation costs to use parts supplied by local manufacturers.

Further, on the supplier side of the equation, it is becoming increasingly necessary for suppliers commonly in the service of a single automaker to diversify and secure parts orders from other vehicle manufacturers on an international scale. Having only a single customer has inherent disadvantages, as covered in section 2.3 of Chapter 2, and international expansion for a parts supplier can be a solution to having a limited domestic customer base.

4.2.1 The Trading Companies

Initially, when companies begin to establish international links, they are generally moving into unknown territory, into markets in which they may have little or no experience. To aid firms in such global expansion, there are often government agencies that may help fill this knowledge gap. Added to this, it is likely that established firms will also act as sources of expertise and intelligence relating to these unknown markets. In the

keiretsu system, the trading companies or *sogo shosha* facilitated the early global expansion of many *keiretsu*-linked firms.

The *sogo shosha* are a key component of the big-six financial *keiretsu* and within each *keiretsu* there is a trading company as a core firm. Mitsui has Mitsui & Co., Mitsubishi has Mitsubishi Corp., Sumitomo has Sumitomo Corp., Fuyo has Marubeni, Sanwa has Nissho Iwai and the Dai-Ichi Kangyo Bank Group has Itochu. These organisations seem distinctly Japanese and occupy a vital role in the distribution of finished goods and the securing of raw materials for other *keiretsu* firms. In addition to these large trading houses servicing the big-six, there are numerous smaller such entities that do business for the hundreds of lesser industrial groupings throughout the nation. Just as the main bank provides group financial leadership and co-ordination, the trading company provides leadership for the group in all aspects of commerce.

Most group company finished products will pass through the well-connected, international offices of the *keiretsu* trading companies. There, the general traders, utilising their vast array of contacts and their understanding of many varied global markets, will match the right buyers to the right sellers and add value in the process. It should be noted however, that in addition to this international trade, there is also a large volume of domestic Japanese trade, also brokered by the *sogo shosha* (Miyashita & Russell, 1994).

Interestingly, while these trading companies generate an extremely large amount of revenue, they have a very small profit margin. For instance, of a total revenue of US$176 billion in 1995, trader Mitsubishi Corp. garnered a mere US$218 million in profit, which converts into a percentage margin of 0.12% (Kano, 1995). The other big-six traders also have similar low margins. Profit maximisation for these companies is not their main driver and the need to cultivate contacts that boost the total volume and value of trade are far more important (Miyashita & Russell, 1994). This unusual

focus is very beneficial to clients of the traders, who profit from the traders' many network contacts and the sheer volume of trade that passes through them.

4.2.2 The Trading Company as Secondary Group Financier

In addition to their main role of brokering *keiretsu* products, the traders have another important duty, which is that of the secondary financier for the many smaller companies on the periphery of the main combines, too small to be dealt with by the main banks. Much the same way as they act as go-betweens in the trade of goods, the *sogo shosha* act as financial intermediaries between the main banks and the smaller client *keiretsu* firms. To the main banks, the traders represent a far less significant lending risk than do the numerous smaller peripheral *keiretsu* companies. This is advantageous to the banks, since they benefit through the reduction in overall risk they are exposed to. The smaller firms also gain an advantage through this system, as they receive more favourable lending rates, with less burdensome stipulations, like smaller minimum levels of collateral, than if they approached the main banks directly. Likewise, if smaller firms get into difficulty, the trading companies are often able to more discreetly deal with such situations than the giant city banks ever could (Miyashita & Russell, 1994).

Just as described in section 3.2 of Chapter 3, where the main banks extend trade credits to the larger group companies, the main traders guarantee the trade credits of the lesser group firms and thus exert similar controls to those of the banks. Furthermore, the influence they have on the smaller group firms yields similar benefits, co-ordinating the smaller firms to common group goals that can be advantageous to all firms within the *keiretsu*. Combined with the banks, the *sogo shosha* exert great influence over all group firms, both large and small. Indeed in some cases, it is the trading company that exerts the most influence. In the Mitsubishi Group for instance, the President of Mitsubishi Corp., the general trader, is

considered the head of the entire group (Bremner, Thornton, & Kunii, 1999).

By absorbing lending risk, the *sogo shosha* are invaluable in financing firms when they are too small for the main banks to bother with, as many a domestic firm can be before expanding globally (Miyashita & Russell, 1994). Indeed the traders are almost like venture capitalists in some cases, so as well as acting as a conduit for global expansion with their international links and distribution muscle, they are also able to fund that expansion. Furthermore, without them acting as secondary group financiers, expansion might not be possible at all, due to the traditional debt funding approach used by most companies, as cited in Chapter 3. Some smaller companies who otherwise might not be able to get funding are thus able to expand.

4.2.3 Other International Links

Trading companies are clearly invaluable to small Japanese firms during their initial stages of global expansion. However, over time many firms have ceased to use the services of the traders and have set up their own international offices, as they either desire more control over the marketing and distribution of their products or perceive that they could run their international operations more efficiently. This section examines how embeddedness has affected these direct company run operations.

In addition to the trading ties established on behalf of the *keiretsu* by the trading companies, larger firms within the combine often set-up their own overseas manufacturing and trading concerns, as many of these large firms are the central players in their own more vertically oriented groups. When a firm internalises international transactions by setting up overseas subsidiaries, they reduce the transaction costs inherent in arms length transactions with unrelated foreign firms. With such impediments as language barriers, local business customs and unique local laws, it can be

advantageous to have wholly owned operations or joint ventures, with which by definition there exists an embedded tie with the parent. An example of this might be the Proton cars that Mitsubishi Motors was involved in producing, in Malaysia. There are significant tariff barriers to protect the local auto-industry in Malaysia and Proton is the main producer (Reyes, 2000). The link with Proton enabled Mitsubishi Motors to tap into the Malaysian market.

The existing literature points to the fact that when an embedded tie exists between international transactors, the monitoring and control costs between them are diminished. This is especially true in matters where intellectual property, trade secrets and technological processes are part of the equation, which can mean issues of agency can arise, where the loyalties of foreign players may be divided. In such instances, it is often best for the firm entering the foreign market to deal with subsidiaries, rather than independent foreign firms (Rugman, 1981; Caves 1982, cited in Hackett & Srinivasan, 1998).

Furthermore, the embedded links between Japanese firms and their suppliers have unique features not found in the relationships between similar US and European firms and their respective suppliers. To some extent these properties manifest themselves not just in domestic embedded links, but also across national boundaries, in international embedded links. Cross-shareholdings lend themselves to co-ordination of efforts and the sharing of risk in international ventures, just as they do in domestic links as discussed in Chapter 2. International embedded ties also facilitate the transfer of information from one country to the other in the form of technological transfer. This transfer takes place on the terms of the international parent, rather than being passed on through less reliable means, as might be the case in a non-embedded transaction. Also, with the lessened risk and inferred stability of an embedded link in place, a parent firm will likely devote more time, expertise and more capital into an

overseas venture, which will in turn benefit the whole local economy (Hackett & Srinivasan, 1998).

4.3 DISADVANTAGES OF INTERNATIONAL EMBEDDED TIES

It is a general contention of this thesis that beyond a certain point embedded links can become an impediment to the firms involved in them. This section pursues this point with regard to international embedded ties and it will be suggested that beyond a certain point such ties can be detrimental to the actions of multi-national firms and impede their flexibility and responsiveness in comparison to their global competitors.

Chapter 2, section 2.3 examined the disadvantages, from an embedded standpoint, of inter-firm interaction on a domestic level. One of the disadvantages highlighted was the tendency for firms to deal repeatedly with the same supplier over a long period of time, which cemented trusting bonds between the main firm and its supplier, but at the same time limited the flexibility of the main firm. This tendency has similar implications in the international arena and the production subsidiaries of Japanese multi-national firms often prefer to deal with the same suppliers as their parent firms and are less likely to do business with local suppliers than comparable US or European production subsidiaries (Krenin, 1988). Furthermore, in the early stages of global expansion, Japanese firms tended to first establish affiliates in countries that had some cultural commonality with Japan. This cultural preference currently persists to some extent and could be another possible limiting factor, impeding flexibility, by reducing supplier choice for the embedded Japanese producer (Srinivasan & Mody, 1994, cited in Hackett & Srinivasan, 1998).

This preference for dealing with the same suppliers can also impede flexibility by limiting the choices of country an embedded firm can expand

into. For instance, local laws in a prospective host country may require a certain local content for the finished products produced by an overseas affiliate, or restrict the flow of imported components from the parent country. A reluctance to employ local suppliers because of the pre-existing embedded relationship between a domestic Japanese supplier and a producer could mean that an embedded firm may be forced to forgo an opportunity that a non-embedded firm might not.

A study by Hackett and Srinivasan (1998) found evidence of this reluctance by Japanese firms to enter foreign markets where such restrictions apply. Utilising statistics on foreign direct investment by Japanese and US firms, as well as the level of import restrictions and local content manufacturing requirements for thirty countries, Hackett and Srinivasan (1998) had some notable findings. Although both US and Japanese firms had lower levels of investment to countries with more restrictive policies, there was a statistically significant difference between the level of investment by Japanese and US firms. The level of investment by the Japanese firms was clearly more influenced by the amount of restrictions on content and imports in the host country. The study inferred that the greater sensitivity of Japanese firms to the magnitude of restrictions in a prospective country they were investing in, and their general reluctance to enter countries with tighter controls was indicative of the higher switching costs inherent in their supplier structures. After all, why invest heavily in a country that will require you to make drastic changes to your supplier structures? US firms invested less in countries with more stringent regulations also, but what they did invest was significantly more statistically, indicating their supplier structures were far less entrenched. It is a contention of this thesis therefore that in instances where restrictive regulations have discouraged the full-scale entry of Japanese firms, but not US firms, opportunities to exploit markets have been lost. These lost opportunities are then due primarily to the restrictiveness of embedded structures in Japanese firms, structures which US firms do not have to the same degree.

4.3.1 Compromised Flexibility of Domestic Japanese Suppliers

Just as Japanese international firms are hampered in the countries they can expand into and the suppliers they choose, because of the embedded *keiretsu* links they have with domestic suppliers, suppliers themselves are likewise limited in their ability to deal with overseas firms. In an industry where margins are getting tighter, like the auto industry, a cost cutting measure often employed by many auto-makers is to source parts for their vehicles from the most value for money supplier, no matter where in the world it may be located. European and US parts suppliers have developed a reputation for seeking out new customers above and beyond their traditional automotive partners. The same however, cannot be said for Japanese auto-parts suppliers, who have nowhere near the amount of global exposure that their Western counterparts do, when their overseas sales percentages are corrected for the size of their home market.

Table 4.1 overleaf shows this trend in greater detail.

Table 4.1

The Adjusted Overseas Exposure of Japanese, European and US Car Parts Suppliers

Japanese Supplier	Main Product	Regional Base	Reported Overseas Sales %	Adjusted Overseas Sales %
Yorozu	Suspensions, Pressed Parts	Japan	44.1%	17.4%
Showa	Hydraulic Shock Absorbers	Japan	40.2%	14.8%
Keihin	Car AC's, Fuel Injection Systems	Japan	39.5%	14.3%
Denso	Car AC's, Fuel Injection Systems	Japan	37.2%	13.0%
Nissin Kogyo	4W&2W Brake Systems	Japan	35.6%	12.2%
CalsonicKansei	Car AC's, Radiators, Mufflers, Meters, Wire Harnesses	Japan	32.6%	10.6%
FCC	Clutches for Cars & Motorcycles	Japan	30.7%	9.8%
Koito Mfg.	Car Lamps	Japan	26.2%	7.8%
Tachi-S	Seats, Interior Systems	Japan	24.5%	7.1%
Exedy	Clutches, A/T Parts	Japan	23.4%	6.8%
Fuji Kiko	Seat, Steering & Body Parts	Japan	22.3%	6.3%
Aisin Seiki	Body Parts, Engine & Transmissions	Japan	17.6%	4.7%

Japanese Supplier	Main Product	Regional Base	Reported Overseas Sales %	Adjusted Overseas Sales %
Lucas Varity*	Braking & diesel fuel injection	USA	51.3%	42.9%
Lear	Interior systems	USA	51.3%	42.9%
Autoliv	Safety	Europe	41.9%	39.8%
TRW*	Safety, steering suspension	USA	47.2%	36.5%
Magneti Marelli	Engine control systems, lighting, instrumentation, electronics	Europe	38.0%	33.8%
Federal Mogul	Engine mgmt. systems, lighting, pistons and chassis products	USA	43.0%	30.8%
Robert Bosch	Safety, fuel injection, electronics and brakes	Europe	31.3%	25.1%
Jonson Control	Interior systems	USA	36.1%	23.1%
Valeo	HVAC systems, lighting, clutches, automatic trans. Components	Europe	25.0%	18.4%
Brembo	Braking systems	Europe	19.1%	13.0%
Visteon	Chassis, climate control, electronics, engine mgmt. systems, electronics	USA	23.5%	12.5%
Borg Warner	Transmission and powertrain assemblies	USA	23.2%	12.4%
Dana	Drivetrain, structural, engine, chassis, sealing and filtration products	USA	22.7%	12.0%
Delphi	Steering, chassis, electrical, thermal, energy and engine management	USA	18.8%	9.4%

*Notes: Adjusted overseas sales ratio calculated as follows: (overseas revenues/rest of the world vehicle output)/(home country revenues/home country vehicle output). *Lucas Varity & TRW numbers are pre-merger.*

Source: Redl, 2000, p. 12, Exhibit 11

In table 4.1 the percentage of sales to global customers of a number of major Japanese, European and US car parts suppliers is compared. Percentages are corrected for the size of a supplier's respective home market. Although in pure percentage terms Japanese, US and European suppliers seem to have similar percentage ranges for global exposure, when the size of their home markets is taken into account we see that the Japanese firms rely more heavily on a smaller market. For instance, in Japan there are approximately 10 million new vehicle sales per year. However, the European market is 60% larger, with 16 million new vehicle sales. A company like Nissin Kogyo, maker of brake components, gets 35.6% of its revenue from overseas sources, but when this percentage is normalised against the size of its home market, it rates only 12.2% for global exposure. In contrast, European supplier Robert Bosch, maker of safety equipment, fuel injection systems, car electronics and brakes, makes 31.3% of its sales revenue from sources outside of its European home market. This figure is less than that of Nissin Kogyo's, but due to the company operating in a bigger home market, its corrected overseas sales percentage is 25.1% (Redl, 2000). Japanese firms exploit overseas customers for a large proportion of their sales, but the remainder of their sales revenues are derived from a much tighter domestic market, making their global exposure much smaller than comparable firms in other nations. This is a trend that in the long run could prove disadvantageous, by reducing their overall flexibility and leaving them too dependant on the Japanese domestic market.

4.4 CHAPTER CONCLUSION

This chapter showed the possibility that *keiretsu* ties may not only inhibit the flexibility of firms to adapt to change at a domestic level (as examined in Chapter 2), but can also hinder their global actions. The next step for a large and growing national firm is often expansion beyond its home country's national borders and Japanese firms are by no means unique in

their desire to expand into international markets. Over the years, during the process of expansion they have encountered numerous barriers relating to cultural differences and local regulatory barriers. To overcome these barriers in the initial stages of expansion, the *keiretsu* trading companies or the *sogo shosha*, played a vital role and their network of contacts and international offices proved of great value in driving *keiretsu* expansion. In addition to their primary trading role, the *sogo shosha* performed other functions. Provision of finance to the smaller companies in the group, and their leadership and co-ordination efforts on behalf of the group bank, are invaluable services.

In time some group firms formed their own international links, with their own marketing and manufacturing initiatives in foreign markets. These overseas operations have a tendency to have stronger links with their parent companies than do comparable operations from other countries, relying much more heavily on parts and other materials provided by their home company's suppliers. This tendency seems to have led to reluctance by many Japanese firms to enter into markets in which they perceive the barriers to entry as being too high. Thus international embedded ties prevent the aggressive seeking out of opportunities, since there is a reluctance to pursue possibilities in contexts where proven networks have not been established.

It was a finding of this chapter that barriers to entry that may exist in a new market, like tariffs on imports, local content restrictions and cultural differences, can deter the entry of many firms, not just those from Japan. However, Japanese firms often exhibited an even higher reluctance to enter a new market than similar firms with other national origins. This could well result in a loss in global flexibility, with Japanese firms losing valuable opportunities to their less embedded counterparts. Furthermore, even once established in a foreign market, many Japanese firms had a tendency to deal only with suppliers with whom they have already set-up embedded ties. Once again this may impede their flexibility. These

suppliers are very often the same suppliers that the home firm deals with, militating against sourcing from more cost effective alternative suppliers.

In summation, it seems likely that embedded ties can act as an impediment to the global flexibility of Japanese *keiretsu* firms, in comparison to their foreign competitors. There is a lack of flexibility and adaptability mainly arising from the rigidly structured and formally entrenched inter-firm networks of Japanese firms that operate at the international level. This also limits their ability to enter new markets, when faced with local restrictions. Once in a new market, they are limited from finding cheaper sources of raw materials and components. Likewise, firms tend to overly rely on domestic customers and do not seek out business from overseas, non-group associated sources. This however, does not belie the fact that many Japanese firms have been extraordinarily successful in tapping into global markets through use of their embedded ties and therefore the qualified conclusion of this chapter is that Japanese firms would be even more globally successful and responsive to changes than they already are, were it not for rigid embedded ties hampering them in later stages of their global expansion.

Chapter 5

THE EMBEDDED RELATIONSHIPS BETWEEN GOVERNMENT AND PRIVATE INDUSTRY

5.1 CHAPTER INTRODUCTION

Previous chapters have examined a number of different aspects relating to the impact and scope of embeddedness on various facets of Japanese business culture. Several issues have been covered, such as how embedded ties can affect a company's intra-*keiretsu* dealings with other group firms. Other factors that have been scrutinised include how embeddedness affects Japan's banking and financial system and the role that embedded ties have played in facilitating international trade. In this penultimate chapter, the strong embedded relationships that exist between the public and private sectors and how these relationships have both assisted and hindered economic development at various times will be analysed. In later sections the construction industry will be utilised as a case study to illustrate some of these points.

5.2 THE ADVANTAGES OF GOVERNMENT TIES WITH INDUSTRY

During the post-war period Japan went through a dramatic transformation, becoming an economic superpower. Throughout this transformation government initiatives played a crucial role. Overall, the steps that the government took corresponded to the developmental state theory, as outlined by Johnson (1982). In this research Johnson identified a chain of events that were instrumental in the export driven, rapid growth that Japan experienced in its post-war recovery phase. Firstly, there was the creation of a climate of overall, long-lasting political stability that the many decade reign of the Liberal Democratic Party (LDP) fostered. From this stability a bureaucracy came into being with a meritocratic structure that largely supplanted the politicians in policymaking decisions. National wealth was distributed, often through increased public spending on public works and producer subsidies, so that no section of the community was overly disadvantaged. Thus a degree of social stability was created, since everyone was relatively content and no group was overly disadvantaged or endured undue hardship. This was necessary, because in the thrust for economic growth, the interests of private industry often supplanted the interests of individuals. Lastly, there was the establishment of an interactive framework between government and business, which facilitated the creation of an overall strategic vision of growth for the economy, with specific market driven goals for the private sector.

Two of the major players in state initiatives to foster economic development were the Ministry of International Trade and Industry (MITI) and the Ministry of Finance (MOF). The MOF was a major instigator of macroeconomic development, whereas MITI served as the overseer of development on a more microeconomic level (Murphy, 1997). In Japan to this day, both ministries wield exceptional power and have had a huge

influence over the Japanese economy, with the MOF being especially powerful.

The MOF's sphere of influence is exceedingly far reaching, with the Japanese State's sources of revenue and its defence largely under the control of the Ministry. The National Tax Agency is a division of the MOF and ministry officials devise the nation's budgets, with Diet approval for them being little more than a legal formality. Likewise, the Japanese Defence Agency is staffed with MOF officials in key posts, so the military is largely under its control too. Interestingly, while being extremely powerful and influential, the MOF keeps a low profile. Other agencies like MITI may often formulate government development strategies, but they usually depend on the MOF to implement them (Fingleton, 1995).

5.2.1 A Developmental Brief

The brief of government ministries like MITI and MOF was to develop industries deemed as being of strategic importance to the rehabilitation of the economy. To achieve this brief they were given sweeping powers with which to authorise numerous programmes to reinvigorate private industry. Added to these formal powers, the Ministries exercised considerable informal power when they provided "administrative guidance" to businesses, which really usually amounted to compulsory directives (Woodall, 1996).

The ministries offered various incentives to the private sector industries that they targeted. These incentives included tax breaks and import duty rebates on certain pieces of machinery employed in the production process. Other incentives may have taken the form of accelerated depreciation schedules, so the book value of capital items could be written off faster, favourable interests rates on business loans and the creation of tariff barriers on competing overseas products. Also, tax deductibility for

Research and Development expenses often supplemented these incentives

Moreover, as part of the economic rehabilitation that took place, government-industry liaison groups were established, through which industry development strategies could be better co-ordinated. Government bureaucrats formed working relationships with influential members of the private sector and constructed various plans that envisaged long-term strategies for the way ahead. These strategic plans influenced a number of industries including the textile, computer and electronics industries, as well as heavy industries such as shipbuilding, steel, automobiles and trucks (Woodall, 1996). In the construction and implementation of these visionary strategies in these various industrial sectors, the influence of the elected members of parliament in the Diet, was of secondary importance to the decisions made by the civil servants employed in the ministries.

The bureaucracy also maintained many ties with businesses, through the placement of officials in senior positions in private corporations when they retired. This process is called *amakudari* and is a practice that still persists. These former officials maintain contacts with their former ministries and facilitate co-operation between their new private employers and the bureaucracies they originally came from. Another avenue of influence that persists is the selective enforcement of restrictive regulations by the bureaucracies, such that they may turn a blind eye to favoured corporations, but strictly enforce the regulations with firms they desire to punish. This is especially true when Japan's restrictive tax code is considered (Fingleton, 1995). Regulations can also be used to protect domestic firms from foreign competitors, as was the case in 1987, when Californian company Etak established an effort to electronically map Japanese cities. A year into the venture, the requirement of a licence was suddenly imposed on the company. The ensuing delay meant that there was sufficient time for a Japanese competitor to move in and grab the lead (Faltermayer, Solo, Kano, & von Brachel, 1992). Another example of

bureaucratic protectionism is the well-known case of the official government policy to support the rice growing industry, with various subsidies for growers and tariffs on imported rice put in place over the years (Faltermayer, et al., 1992). Overall, the bureaucratic powers exercised by the Government ministries have in many cases proven to be very restrictive and to favour some companies over others. This is advantageous from the point of view of the firms that are favoured, which are in the case of foreign firms competing with domestic Japanese firms, invariably the domestic firms.

5.2.2 Government Influence over the Financial Sector

Another major group of strategies used by Japan during its post-war recovery stage was the steps that the government took in managing the financial system to help facilitate the recovery. Household savings was encouraged and consumption was penalised. A complicated taxation system, import restrictions, tariffs, a poor welfare system and artificially high prices on certain essential items like food and housing all served to discourage consumption by the Japanese consumer, who was then prompted to increase savings, mostly through bank deposits and post office savings schemes. With an abundance of funds at their disposal from the increased savings, the bankers then used these finances to provide loans with attractive interest rates to targeted industries that were nominated by the government ministries.

Firms in the initial stages of development were given the opportunity to develop with favourable access to loans. This had the advantage of giving firms a chance to expand even if they were not initially profitable. Firms in the early stages entering an industry or creating an entirely new industry are often unprofitable due to investment in such things as expensive plant equipment and marketing costs. Cheap and plentiful access to credit gave them the ability to overcome this initial unprofitability and to establish

themselves and their brand and it was one of the major factors responsible for Japan's astronomical post-war growth.

5.3 THE DISADVANTAGES OF GOVERNMENT TIES WITH INDUSTRY

A strong bureaucracy was an essential component in the recovery of Japan after World War 2. However, it seems likely that elements of that bureaucracy have become entrenched and inflexible, with too much invested in embedded ties with the industries they support. As noted in section 5.2.1, one of the main links that the civil service has with private sector industry is the retirement system for ministry officials known as *amakudari* or "the descent from heaven", where private sector companies employ retired officials.

This system serves a dual role, providing both a kind of welfare safety net for bureaucrats, who very often take earlier retirement, as well as providing a conduit through which the private sector and government ministries can liase with one another, using the retired officials as go-betweens. This benefits the private sector, which gains the ministry contacts that the retired officials provide and the public sector likewise benefits by then having well placed individuals in the private sector who are likely receptive to their policy goals. However, a clear disadvantage of *amakudari* is that public officials are always reluctant to jeopardise their future private sector job opportunities and may be unwilling to enact any policy detrimental to their favoured private sector firms (Fingleton, 1995).

Apart from *amakudari* there are often cases where private industry has felt it necessary to "grease the wheels" of bureaucracy with bribes and favours. To illustrate examples of this behaviour, the next section of this chapter will employ the construction industry as a short case study. The interaction of the Ministry of Construction with the private sector

construction firms that are its main clients will be investigated and both the advantages and disadvantages inherent to the dealings of the Ministry of Construction will be scrutinised to show the underlying corruption in many parts of that sector.

5.3.1 A Case Study of the Construction Industry in Japan

The Japanese construction market is one of, if not the largest construction market in the world. For example, investment in construction projects as a percentage of gross national product was at a level of 18.2 % in 1992. The USA, France, Germany and England had much smaller construction investment percentages of 8.5%, 10.8%, 11.7% and 12.4%, respectively at the same time. Consequently, the Ministry of Construction, which is the government body in charge of regulating Japan's construction industry, is a very influential and powerful Ministry. The Ministry of Construction operates an *amakudari* system, with former ministry officials often employed by private sector construction firms. This is a similar situation to what exists in most other ministries involved in the regulation of private industry and there is a very close working relationship between bureaucrats and companies in the private sector within the construction sector.

Construction is an industry with a distinct hierarchy, with six giant firms that dominate it, the *zenekon*, much a like a smaller version of the "Big-Six" financial *keiretsu* that dominate in wider Japanese business circles. These firms are Shimizu, Taisei, Kajima, Takenaka and Obayashi Corporations and Kumagai Gumi. The majority of the *zenekon* have strong ties to the big-six financial conglomerates. For instance, Shimizu is part of the DKB group, Taisei is a member of Fuyo, Kajima Corporation is close to, but not officially part of Sumitomo and Obayashi is part of Sanwa. The *zenekon* themselves have a network of subcontractors that work under them, forming their own mini *keiretsu* groups much like the carmaker-supplier networks in the auto-industry as examined in Chapter 2.

Construction in Japan is an industry where a number of questionable business practices often take place. One notorious feature of this industry is the *dangô* system of collusive bid rigging for public works projects. This is where a group of constructors collude in the prices they tender for public works projects. Trade associations are often used as a cover for these price fixing cartels (Woodall, 1996).

Representatives from the major constructors tendering for a particular contract will meet under the auspices of the trade association. Their meetings will determine whose turn it is to win a tender, by bidding the lowest amount in a government public works contract tendering round. This is a process that the Ministry of Construction takes an active role in by certifying who can be a member of the bid rigging cartel, by only allowing firms who they determine as being "qualified" to bid on a particular works project.

In such projects, usually 10 qualified firms are invited to bid on a project, thus reducing competition in the bidding process. The reasonableness of their tenders is assessed against an estimated maximum cost for the job, as determined by officials within the Ministry. Complicity with the price fixing regime by the Ministry manifests itself in two ways. First, the Officials tend to set a reasonably high-assessed maximum construction cost and second, they often leak the cost estimate out to bidders. Bidders are then able to comfortably under cut the over-inflated maximum cost without compromising their profit margins. Officials go-along with this process either to feather their beds post-retirement by shoring up their connections with possible employers by granting them favours, or because of the levels of inducements like bribes and gifts they are given by prospective bidders. When given the appropriate inducement, officials have even been known to intervene on behalf of a company and direct an illegal *dangô* as to which construction company will make the lowest bid and win the contract (Woodall, 1996).

Co-operation from Construction Ministry bureaucrats enables a very effective cartel mechanism to be set-up. Even defectors can be punished, because if they cheat on a tender, a friendly official will be able to relay the contents of all sealed tenders back to the Cartel who can then punish the defecting firm by having the Ministry disqualify it from further bidding on future projects. The system is made possible by the long-standing embedded ties that were formed between government bureaucracy and private industry to co-ordinate their efforts during the post-war recovery phase. It was certainly advantageous to construction firms in its day and facilitated rapid growth in construction and building, an industry crucial to the development of many other industries.

What were once useful links that created rapid development have now however, deteriorated into corrupt crony capitalistic networks that artificially drive up the cost of public works in Japan. Illustrative of this corruption ridden system, one of the biggest scandals surrounding the *dangô* structure was the notorious *Zenekon* scandal, centred on the local precincts of Sendai City and Sanwa Town. The scandal began in 1993 when it was revealed that senior officials in the LDP, as well as a number of local government officials were involved in a giant web of corruption that accepted bribes in exchange for public works contracts. The scandal resulted in the prosecution of a number of private sector managers and public officials. As far reaching as the scandal was, it was thought to represent only the very tip of the iceberg of corruption in the construction industry (Woodall, 1996). The increased costs of public works, arising from embeddedness, have had a flow-on effect that makes Japanese construction costs some of the highest in the world, with the costs of corruption included in the price of new buildings (Woodall, 1996). It is estimated that the cost of public construction in Japan is inflated by as much 50% through price fixing and bribes (Jin, Murakami, & Ito, 1981, cited in Woodall, 1996). Furthermore, revenues created by over-inflated tenders have been estimated to account for between 16 and 33% (US $50

- $100 billion per annum) of the total revenue that the entire construction industry generates (McMillan, 1991).

5.4 CHAPTER CONCLUSION

In Japan the bureaucracy played a vital role in the rehabilitation of the country after the war. Without the active intervention and targeting by ministries like MITI and MOF, it is quite likely that the development the country experienced would not have been nearly as rapid. In the facilitation of the recovery, an intricate web of links between private industry and government was established, with such practices as the *amakudari* retirement system ensuring that these links stayed strong. In their time such embedded links were necessary to co-ordinate recovery efforts and were beneficial despite their ethically questionable downsides. However, in the present situation, such intertwined networks have become largely obsolete. Weighed down by corrupt practices, these embedded ties between government and private industry do little more than inflate production costs, as illustrated in the construction industry case study, and currently may be regarded as more of a hindrance than a help to economic growth. The bid rigging *dangô* system found in construction represents one of the worst cases of the type of corrupt embedded tie that hinders rather than helps. Such ties are present to some degree across a broad spectrum of Japanese industries and until such time as these government-industry ties are reformed, Japanese businesses face a very serious impediment to their future prospects.

Chapter 6

CONCLUSION

6.1 SUMMARY OF THEORETICAL EXPLORATION AND KEY THEMES

This thesis utilised the economic sociology concept of embeddedness as the theoretical underpinning to provide an innovative alternative to traditional explanations of economic growth. Embeddedness represents a valuable conceptualisation for the incorporation of social network interaction into economic theory. The thesis explored the impact of embedded network interaction in four key areas. These were: inter-firm embedded interaction, embedded relationships within the financial sector, international embedded ties and embeddedness between government and business.

Drawing together the threads of the examination and interpretation of embeddedness in this thesis, it is worthwhile to stress that the term was used not only to mean the formalised *keiretsu* networks in Japan which might be said to epitomise the operation of embeddedness. The embeddedness perspective that the study adopted was not confined to formal *keiretsu* links that involve financial ties and cross shareholdings but also included long standing business relationships. For instance, the following anecdote illustrates this aspect:

> ...when Sony developed its videocassette recorder in the early Seventies, Chairman Morita relates, it needed a new, high-quality recording tape. At the time, a major U.S. chemical company passed up Sony's invitation to supply the tape because it was reluctant to invest in new production equipment. Sony enlisted two Japanese companies that, Morita says, "invested money at their own risk." To this day Sony holds no equity stake in these suppliers, he adds, "but once they invest money and make a good product, that situation is a keiretsu, and we feel some kind of obligation" (Faltermayer, et al. 1992, p. 38).

In addition to long-term corporate relationships, embeddedness in this thesis also was interpreted as involving government-business links and this was examined in Chapter 5. Furthermore, the Confucian cultural premise underpinning embedded ties in Asia was addressed in the thesis, and the way these ties are founded on a rigid social structure that inhibits flexibility was highlighted.

The general approach taken in this study was to highlight that while embeddedness conferred certain advantages, which feature so prominently in the literature, it could well also have disadvantages. Five major themes emerged here.

The first theme that this thesis emphasised related to trust. Trust is viewed as integral to the operation of beneficial embedded ties. Historically, these trust building ties were invaluable in co-ordinating intra-*keiretsu* growth initiatives during Japan's post-war period. The thesis argued that while there is a predisposition for firms to deal repeatedly with the same supplier over a long period of time, which cements trusting bonds between the main firm and its supplier, this at the same time can

limit the flexibility of the main firm. Chapter 4 pointed out that similar implications can operate in the international arena with the production subsidiaries of Japanese multi-national firms often preferring to deal with the same suppliers as their parent firms and hence less likely to do business with local suppliers who could well be more cost effective. Furthermore, despite the underpinnings of trust, stringent control may be wielded over subordinate affiliates, as highlighted in Chapter 2 in the case of automakers who exert strict controls over their parts suppliers. Especially in the Japanese automotive industry, embedded ties are thus used as a control and co-ordination mechanism.

A second broad theme focused on information transfer and information gaps. An advantage usually cited, is the idea that embedded networks form an efficient information conduit, passing on more that just price and quantity information that would characterise simple arms-length transactions. This concept of fine-grained information transfer (Uzzi, 1997, p. 45), was contrasted with a major proposition of this thesis: the contention that at times a situation may arise where firms within an embedded network have a tendency to be isolated from information sources outside their network, with actors involved in the network exhibiting a predisposition to ignore, or be blocked from ever receiving information from sources outside their own peers. This proposition was examined in Chapter 2, specifically in the context of the Japanese auto industry, and it was illustrated how embedded ties failed to facilitate the transfer of vital business intelligence from sources external to a firm's usual set of network contacts. It resulted in "information isolation".[1]

The third prominent feature of embeddedness noted in the literature was that firms form networks for reasons such as stability in growth (both in

[1] This point is alluded to very briefly in Uzzi (1997, p.59), but of course it is not illustrated from the East Asian perspective.

sales and market capitalisation), and also to lessen variability in their income streams (e.g. Caves & Ukeusa, 1976; Nakatani, 1984). By acting in this manner, firms sacrifice the maximum profit that might be realisable in any given situation. These studies predated the long stagnation of the Japanese economy throughout most of the 1990s and the thesis, examining more recent evidence, argued that this reduced profitability becomes a liability in situations of sustained decline over a number of years. It proposed that in situations such as those experienced by Japan in the 1990s, the embedded network rationale of exchanging profitability for stability has proven to be more of a hindrance than a help to firm welfare. This stability versus profit trade-off constraint imposed by embedded ties was argued to be unnecessarily costly in times of economic slowdown and heightened competition.

The fourth constraining aspect of embedded networks that was discussed concerned the high level of dependence of firms within such networks. This dependence usually took the form of an obligation by network partners to purchase each other's goods and services. As with the stability-profitability trade off, while it is true that in times of high economic growth such network links may lead to efficiency gains in resource allocation and economies of scale, in recessionary conditions this same high degree of dependency can prove detrimental, with the high reliance of firms on one another resulting in inflexibility and the inability to react in a timely manner to external shocks such as the Asian Crisis. This characteristic of over-dependence in embedded networks was explored in this thesis especially in the context of the internationalisation of firms covered in Chapter 4.

The fifth theme was a corollary of the over-dependence of the constituent parts of the networks on each other, giving rise to another unfavourable outcome where reciprocal ties within network groupings oblige financially secure firms to prop up less secure network counterparts. Stronger firms

increase their shareholdings in beleaguered ones and the *keiretsu* financial institutions arrange favourable loans (again underwritten by stronger firms in the group) for the troubled businesses. It is evident that such resources might be better utilised by the stronger firms themselves and to some extent because of this obligation to weak and possibly even non-viable firms, the growth of the better performing firms within the network web is hampered. Once again this reciprocal safety-net arrangement is exacerbated in situations of long-term economic stagnation and decline, as there must be a limit as to how long a poorly performing network member can be supported. This factor that reciprocal ties hinder strong firms within a network, as much as they aid weaker ones, was dealt with particularly in relation to the operations of the financial sector discussed in Chapter 3.

6.2 Atrophied Embeddedness

Complementing the five broad themes outlined above, the underlying premise of the thesis was that embeddedness could impede growth, flexibility and adaptability to change. It was contended that the advantages of strong embedded ties which have usually also intertwined with the cultural fundamentals of the society, with time and changing economic circumstances can transform from growth inducing and beneficial ties into impediments to growth and flexibility (or disadvantages may outweigh the advantages of embeddedness). Network ties can expand and become so rigidly structured, especially in a Confucian society, as to become hindrances. Firms become too intertwined and enveloped in an all-encompassing web, so that they are caught in their own web of network ties. During the post-war period in Japan in particular, embedded ties conferred various advantages in the form of growth enhancing, beneficial aspects, but as time progressed, the links between network partners often became too cemented and became less beneficial or even detrimental to

the network transactors involved in them. In order to provide imagery to capture this feature of progressive deterioration of embedded networks I suggest the term 'atrophied embeddedness'.

For instance, this thesis showed that the embedded ties between firms such as those between auto-makers and parts suppliers have atrophied. In the auto-industry these ties in recent times appear to have reduced flexibility and caused progressively escalating parts costs for car-makers and evidence also points to parts suppliers losing their global edge from the guaranteed, stable market which results in each auto-maker having a separate parts supplier network. This guaranteed market that Japanese parts suppliers now have, while vital in fostering growth in what was an infant industry has resulted in a glut of less competitive, higher cost suppliers in the present era. Similarly, the intertwined nature of cross-shareholdings between auto-parts suppliers and auto-makers has resulted in lower profits for the parent auto-makers as cross-shareholdings, originally intended to prevent foreign incursions after the war and to re-form the *zaibatsu* structures, have resulted in some disadvantages arising over time. Valuable assets are tied up that could be invested elsewhere. Furthermore such cross-shareholdings reduce flexibility by limiting any cost cutting measures an auto-maker can take in cutting parts supply costs, since any action that reduces the value of their supplier's stock also reduces their earnings from the equity holdings they have in any particular supplier. The auto-industry provides an example, which fits well with my notion of 'atrophied embeddedness'. Similarly, in some instances, as shown with the construction industry detailed in Chapter 5, once successful, strategically beneficial public-private embedded relationships may also become atrophied, deteriorating to an intricate web of corruption[2].

[2] It may also lead to the propping up of private firms with public money (Mutsuko, 2000)

6.3 Concluding Comments

This thesis has shown that the concept of embeddedness and the new typology of atrophied embeddedness that was suggested, provides a useful framework on how the operation and evolution of networks, both supplements and complements mainstream economic explanations of growth in the Japanese context. It could also be a fruitful area for further research in other industry and country contexts. Additionally, research by Madhavan, Koka, & Prescott (1998) has brought to light another theoretical line of investigation in the field that could form the basis of research from the foundations that this thesis has set. Looking at how networks change and adapt over time, Madhavan et al. discuss how industry events can affect network structure, differentiating between those events that facilitate and those events that hinder networks. Using the international steel industry as the basis of investigation, this research examines the impact on network structure in that industry of two significant events or shocks to the system, with one shock being a significant change in regulations governing the industry and the other being a sizeable shift in the technologies the industry employed. This study classified significant industry events as being either 'structure-reinforcing' or 'structure-loosening' toward network ties over time. This theoretical approach could be useful in supplementing the atrophied embeddedness framework put forward in this thesis. The Japanese country focus of this thesis has already highlighted how major events such as those set in place by the occupying forces after the Second World War facilitated network formation, and how over time, as economic situations changed, these networks could well become less advantageous. Industry network event analysis could be both revealing and interesting.

In conclusion it is reiterated that embedded ties can both help and hinder and the Japanese network structures, particularly the formal *keiretsu* ties need to evolve to better suit the global conditions of the 21st century. Perhaps the transition of atrophied networks to revitalised and rejuvenated

ones necessitates striking an appropriate balance between the trust, commitment, reliability and stability of strong embedded ties and the loosening of these inter-organisational networks to enable flexibility so as to secure greater competitive advantage. Achieving such a balance is hardly easy but is essential in order to escape from being, 'trapped in your own net' (Gargiulo & Benassi, 2000).

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