

SEMINAR FÜR WIRTSCHAFTS- UND SOZIALPOLITIK
UNIVERSITÄT FREIBURG / SCHWEIZ

SMALL AND MEDIUM SIZED ENTERPRISES
BUSINESS NETWORKS IN TAIWAN

von Pascale Güllner

FREIBURG 1999

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¹ This working paper is also available on the Swiss Asia Foundation website <http://www.saf.ethz.ch/>.

SUMMARY

Taiwan claims to have one of the best manufacturing bases in the world. It is known for its flexibility and for low prices. Taiwan's manufacturing base is made up of networks of small and medium sized enterprises (SMEs). Taiwan's SMEs have played an important role in Taiwan's 'economic miracle' and continue to dominate Taiwan's economy today. For these reasons they represent an interesting case study for analyzing business networks.

The present study analyzes Taiwan's SME business networks from an economic perspective using instruments from the New Institutional Economics. Networks are organizations ruled by informal institutions that are implicitly enforced by the network members. Modeled as implicit principal agent relationships, it is shown that networks are agency-cost-saving contractual arrangements.

According to the field data, SME business networks in Taiwan are especially important for access to scarce resources such as capital, labor and technology. For exchanging these property rights different types of business networks were identified: capital, human resources, production, marketing and foreign investment networks. Strong and weak ties, family and friends, both are dominant actors in business networks.

The most particular business networks in Taiwan are the subcontracting networks. The characteristics of Taiwan's subcontracting networks show that the contracting partners are very dependent on each other. This dependency can favor mutual cooperative behavior but exposes the relation between contractors and subcontractors to high contractual risks. Reputation, reciprocity and trust are the mechanisms making contracts self-enforcing. They reduce the costs for the contract enforcement supported by the network members. The business networks can additionally draw on Taiwan's social capital, in which (meta-) Confucian norms such as mutual obligation are very strong and socially sanctioned.

Taiwan's business networks look like a response to cope with scarce resources and inadequate formal institutions. Furthermore they provide an informal institutional arrangement that produces allocative results much like the market with comparatively lower transaction costs for the enforcement of the network contracts. They seem critical to Taiwan's economic development.

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INTRODUCTION

“Asian economies espouse different institutional logics from those of Western economies, logics rooted in connectedness and relationships [.]. Although relationships are manifested in multiple ways at the interpersonal level in Asian business, they are seen dramatically and most importantly in business networks linking Asian firms. It is impossible to overestimate the importance of business networks – sometimes called enterprise or business groups - to the development in Asian capitalism” (Biggart/Hamilton 1997:37) Evidence shows that the Japanese economy is dominated by *kigyo shudan* (former *keiretsu*). These are networks of large firms in unrelated businesses, mutually owned through overlapping shareholding, and decentralized economic control. They include Mitsubishi, Mitsui, Sumitomo, Fuji, Dai-Ichi, and Sanwa. South Korea’s economy is dominated by *chaebols*, networks of large firms owned or controlled by single persons or families but managed by a central staff and organized as holding companies. They include Samsung, Hyundai, Lucky-Goldstar, and Daewoo. Taiwan on the other hand is dominated by networks of small family firms or family owned conglomerates, called *jituanqiye* or *guanxiqiye*.

These institutional features challenge both the *market* explanation and *statist* (Wade 1990) explanations of East Asia’s successful economic development (see World Bank 1993) as well as the evaluation of Asia’s recovery perspectives after the regional financial crises (World Bank 1998).

Evidence on Asian business networks has so far been provided by institutional sociologists (Hamilton/Biggart/Orru 1997, Hamilton 1996) and management scholars (Redding 1990, Clegg/Redding 1990). Asian business networks have not yet been analyzed by economists (Herrmann-Pillath 1997). Economists are therefore often criticized for failing to acknowledge the different institutional foundations of Asian markets or for explaining them simply as market failures (Biggart/Hamilton 1997:35). The present study aims at analyzing Asian business networks from an economic perspective using instruments from the New Institutional Economics (Furubotn/Richter 1997). Networks between firms are analyzed as an alternative institutional arrangement to the market and the firm. This paper is an attempt to describe networks as special contractual arrangements and to assess their contractual characteristics. It is argued that New Institutional Economics is applicable to the analysis of

Asian business networks and that it provides useful instruments for explaining microeconomic phenomena in non-Western settings.

The theoretical conceptualization of inter-firm networks will be confronted with evidence from Taiwan. Taiwan claims to have one of the best manufacturing bases in the world (FEER: February 11, 1999). It is known for its flexibility and for low prices. Taiwan's manufacturing base is made up of networks of small and medium sized enterprises (SMEs), owned by families or by socially related shareholders. Taiwan's SMEs have played an important role in Taiwan's 'economic miracle' and continue to dominate Taiwan's export economy today. For these reasons they represent an interesting case study for analyzing business networks, which might also provide interesting insights into why Taiwan was not so severely affected by the Asian financial crises as, for example, South Korea.

The field research in Taiwan was conducted with the help of the Swiss Asia Foundation. I was able to make a five-week field study as a visiting student at the Center of East Asian Economies and Societies at Tunghai University in Taichung, Taiwan. I would like to thank the Foundation and the Center directed by Prof. Chen for making this field research possible. They allowed me to gain insights into Taiwan's economy by interviewing its entrepreneurs and to learn about Taiwan's economic development through their business histories. It was also an opportunity to experience Taiwan's outstanding hospitality.

During an interview, a Taiwanese entrepreneur told me the following story, which I think requires no further comment: When he graduated from his university, the Dean of the Trade Department asked the new graduates who they thought would be their most important future competitor. Everybody answered USA, Japan, or Korea. The Dean replied: "*You are all wrong, your biggest competitor is standing beside you*".²

² Interview on March 13, 1999.

PART I: THEORETICAL FRAMEWORK

The research field of my Ph.D. thesis is the role of networks as a social order principle from a New Institutional Economics perspective with empirical evidence of business networks in Taiwan. The following theoretical section is based on and developed in my Ph.D. thesis, on which I am still working. The second and third section will present the research questions and method.

1. Networks from a New Institutional Economics perspective

Generally, a network consists of actors and the relationships between them. From a New Institutional Economics perspective, a network can be viewed as an ‘organization’ or as a ‘governance’ structure. In both cases networks are based on contractual arrangements.

1.1 Networks as organization: a definition

According to North (1990) an organization is made up of *institutions* (property rights, contracts and their enforcement) and their *actors*. The content of these contracts is the exchange of material or immaterial property rights such as information, goods, services, power, or influence. The exchanges can be horizontal between independent actors or vertical between dependant actors. Contracts can be formally enforced through litigation or arbitration or informally enforced through alternative mechanisms such as reciprocity, trust and reputation, either as socially sanctioned norms and internalized values, or as private (self-enforcing) mechanisms.

Business networks are defined here as *organizations consisting of horizontal and informally enforced contract relations between actors*. The actors of business networks are enterprises.

1.2 Networks as governance structure

Compared to markets and firms, networks are an intermediate or hybrid organization, (1) with a limited number of independent actors, (2) with competitive pressure and inter-firm division

of labor much like the market but (3) with long-term cooperation and high specialization much like the hierarchy.³

Following Williamson's (1985) transaction costs economics, networks can be viewed as governance structures based on *relational contracts*. Relational contracts are incomplete contracts and to prevent potential opportunism - *ex ante* or *ex post* - they are embedded in a long-term personal relationship.

According to Williamson, relational contracts are an efficient (transaction cost minimizing) governance structure compared to markets and hierarchies, when transactions are uncertain, repeated and when investments are transaction-specific.⁴ Transactions in networks are uncertain and likely to be repeated and can imply transaction specific investments.

1.3 Contractual risks and their contractual solutions

The contractual nature of business networks can be further specified by the type of risks caused by the incompleteness of contracts. Because of the incompleteness of contracts, information asymmetries can occur. Information asymmetries can be used against other contract partners and can cause negative external effects (externalities) on the latter. Agency theory distinguishes three types of information asymmetry: *moral hazard*, *adverse selection* and *hold up* (Furubotn/Richter 1997).⁵ These create contractual risks, resulting from incomplete information about the behavior of the contracting partner. Using these asymmetries, the incentive structure of contracts can be specified. Agency theory offers a number of contractual solutions implying differing agency costs:

³ Williamson (1985) distinguishes market and hierarchy as two poles on a continuum of possible governance structures. Markets have decentralized decision structures and hierarchies have centralized decision authorities such as in firms.

⁴ Transaction specific investments are sunk costs that cannot be recovered after ending the transaction. Because of the sunk costs the transaction partner is locked into the relationship (Williamson 1985).

⁵ Adverse selection, moral hazard and hold up will be explained later.

Table 1: Information asymmetries and contractual solutions

<i>Information asymmetries/ Contractual risks</i>	<i>Adverse selection</i>	<i>Moral hazard</i>	<i>Hold up</i>
Causes of risks	Hidden characteristic	Hidden information Hidden action	Hidden intention
Before or after concluding the contract	<i>Ex ante</i>	<i>Ex post</i>	<i>Ex post</i>
Contractual solutions	Screening/Signaling - reputation - personal experience - general experience - social capital	Monitoring Explicit incentives - reputation - guarantees - standards - payment schemes Implicit incentives - norms and values* - reciprocity** - trust**	Vertical integration Norms/values: - reciprocity*** - trust***

* Values are understood as internalized norms.

** Reciprocity understood as game theoretic *tit for tat* strategy/trust based on reciprocity

*** Reciprocity and trust understood as norms.

The identified asymmetries and risks with their contractual solutions are a useful tool for modelling network contracts.

1.4 The network contract as implicit principal agent relationship

The network contract is a contract between two network partners. In the following section the network contract will be specified and compared to the market contract by using agency costs as the efficiency criterion. The network contract is based on three assumptions:

1. The network contract is an incomplete contract. Network contracts are similar to *principal agent relationships* but between independent contract partners. The actors, the principal and the agent, have asymmetric information. The agent typically has private information which he can use to the harm of the other contract partner causing externalities.
2. Interactions in networks have a long-term horizon. This implies that repeated interaction (iterated games) is very likely and that the time of the end of the relationship is not known (infinite games). The contracts are therefore *implicit* (self-enforcing).

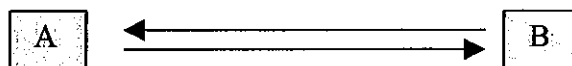
3. The specialization benefits realized in networks can be of two types: economies of scope and/or economies of scale.

Two kinds of network contract are possible: (1) a contract between actors within the network (insider) and (2) a contract between one actor in and one actor outside the network (outsider) with the help of an intermediary or a broker. In the following examples reputation is chosen as explicit incentive.

1.4.1 Network contracts between insiders

Contracts within the network are bilateral contracts. Let us assume that A and B are actors inside a network. They must have had a successful transaction in the past in order to build a network. An honoured past transaction is a constitutive element of an insider contract.

Figure 1: Network contracts between insiders



During a transaction, actor A can face the three possible risks:

- (1) Actor A chooses a dishonest partner (adverse selection): In a network contract, this asymmetry is not present as in a network information about the honesty of a member is quickly and cheaply communicated. In a network the members are limited in number and it is in the interest of every network member to know about the reputation of the others and therefore to communicate their experiences with other members. As networks are rather transparent, there is no need to devote resources to *screening* or *signaling* (of) the transaction partner. Thus screening or signaling costs can be saved.
- (2) If B is hiding information or actions that could affect A (moral hazard), B's behavior causes externalities. An example of moral hazard would be hiding information about poor product quality. In networks the reputation mechanism ensures that the contract is self-enforcing. Losing one's reputation means losing all future business opportunities with the network members. Actor B will only cheat A if the utility of cheating now is higher than the discounted lost opportunities in the future. In networks B will have to carry the costs

of honoring his (good) reputation. The cost of reputation is equal to the cost of behaving honestly, even in cases where it is not otherwise advantageous to do so in the short term. The need to preserve one's reputation is an explicit incentive to ensure honest behavior of the other partner. Reputation thus becomes a 'hostage'.⁶ The condition required for the reputation mechanism to work is that the transactions should be repeated. In networks, they are very likely to be repeated.

- (3) If actor A has to make an 'irreversible' investment, there is another possible risk for A: A can be locked into the relationship (hold up).⁷ While renegotiating the contract, B could offer less after the first order has been concluded - the irreversible investment has already been made - and A will have to accept a second order at a lower price if he wants to recover any sunk costs for the machinery. B can expropriate the quasi-rent of A. To avoid this problem A can refuse to make the initial investment. Then his contract opportunity with B is forgone. Or he can invest in protecting himself from the hold up risk, for example through common ownership (Williamson 1985). In a network the reputation mechanism also deters dishonest behavior. B will have to carry the costs for keeping his (good) reputation. The findings are summarized below:

Table 2: Contractual risks in a network contract between insiders

<i>Asymmetries/risks</i>	<i>Risk</i>	<i>Contract solution</i>	<i>Agency costs</i>
Adverse selection	No	Reputation of B as signal	No signaling/screening costs
Moral hazard	Yes for A	B's reputation as hostage	Costs to B for honoring his reputation
Hold up	Yes for A	B's reputation as hostage	Costs to B for honoring his reputation

Compared to market contracts, network contracts save agency costs for reputation building each time an exchange with a new partner is about to take place. The costs are divided among all members. Because of the high probability of repeated interaction, the network contract can use trust and reputation as low cost enforcement mechanism to prevent moral hazard and hold

⁶ This term was first used by Williamson.

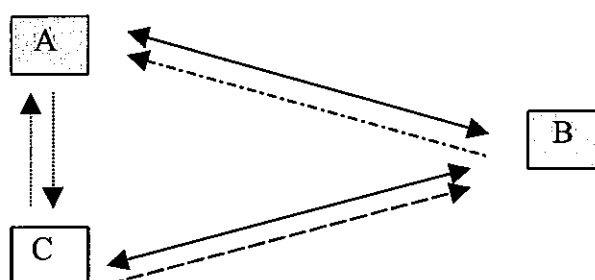
⁷ It is irreversible when the value of the investment in another use or with another partner is lower than with the actual partner or is zero as is the case, for example, with the purchase of a special machine or the development of an engineering process. Same line of argument as Williamson (1985).

up problems whereas on the market additional resources have to be spent to protect from moral hazard and hold up.

1.4.2 Network contracts with outsiders and intermediaries

Starting with the above bilateral contract between A and B, there is an additional actor C outside the network. One of the actors A or B inside the network either knows C because there has already been a transaction in the past or one knows C's reputation, so that he can be a guarantor for C. Let us assume that B and C know each other, so that B becomes the intermediary or broker.

Figure 2: Network contract with an outsider and an intermediary or a broker



In this setting an exchange between A and C involves three contracts that face the different type of risks:

- (1) As B knows C from past experience, there will be no risk of adverse selection. C does not need to invest in reputation or in another signal. Neither does A need to spend on screening his new partner, as he knows about the reputation from B, the intermediary from the network.
- (2) As for the moral hazard problem there are two possible cases: moral hazard from C or from B. In the first case C hides some information or action he should have revealed to A or B. If this happens, B will have to bear the full costs of C's misbehavior to A and C will lose his future business opportunities with B. In the latter case, if B hides information or actions from A, he will lose his own reputation in the network. In both cases reputation is taken as hostage against dishonest behavior. But why should B expose himself to such a risk for C? With his mediation or guarantee service, B can insure himself against future needs either with C or A. The cost of the guarantee corresponds to the risk premium.

(3) Finally the hold up problem is a problem involving B on one side and C or A on the other, when failing to return the favor of mediation. Reputation and the prospect for future business in the network for A and getting into the network for C are an efficient safeguard against this kind of opportunistic behavior.

Table 3: Contractual risks in a network contract with an outsider and intermediary

<i>Asymmetries/risks</i>	<i>Risk</i>	<i>Contract solution</i>	<i>Agency costs</i>
Adverse selection	No	Reputation of C as signal	No screening costs for A and no signaling costs for C
Moral hazard	Yes for A, if C or B fails	Reputation of C And B as hostage	Costs to C for honoring his reputation Costs for C's failure to honor his reputation are supported by B
Hold up	Yes for B, if A or C fail to return the favor to the guarantee B	Reputation of A or C as hostage	Costs to A for honoring his reputation

Compared to market transactions, networks can solve existing incentive problems involving comparatively lower agency costs. Networks can generate information about the trustworthiness of its members cheaply and punish untrustworthy behavior, as everybody in the network will be interested in it. Passing on information and punishing deviant behavior in networks are no longer public goods. They are club goods (Zintl 1993). This means that there is no rivalry in consumption but that the exclusion of non-network members is possible internalizing costs and benefits. Only those who also contribute to the enforcement receive the benefit.

In conclusion, networks are organizations ruled by informal institutions that are either self-enforcing or explicitly enforced by the network members. According to North (1990), both formal and informal institutions influence long-term economic development. The study of business networks in Taiwan is of interest, because they have been important for Taiwan's economic development and still continue to affect Taiwan's long-term competitiveness.

2. Research Questions

This section attempts to turn the theoretical framework into the operational research questions on which the qualitative questionnaire for the field research is based. The research questions cover four research fields.

(1) The role of SMEs in Taiwan's economic development in the past and today

The analysis of Taiwan's business networks is limited to SMEs, because they are said to have played an important role in Taiwan's economic development and because they seem to have a unique organizational feature. This is why first, the contribution of Taiwan's SMEs to its industrial transformation will be more closely analyzed. For this, the following SME indicators will be surveyed: number of SMEs, employment, export share, ownership and capital structure, foreign direct investments, and research and development. The section will conclude with an overall assessment of the competitive environment and constraints faced by SMEs in Taiwan today.

I will draw on a recent joint publication from the Small and Medium Sized Business Administration under the Ministry of Economic Affairs and the Chung-Hua Institution for Economic Research (SMEA/CIER 1998) and on the Taiwan Statistical Data Book (TSDB) compiled by the Council of Economic Planning and Development (CEPD 1998).

(2) Characteristics of business networks in Taiwan

After analyzing the importance of SMEs, Taiwan's business networks are described. Business networks can be described in terms of either the *actor*, or the *content* of the contractual exchange, or the *functional* domain where network contracts are concluded. Furthermore we can specify the *type of industry* in which they are found.

(a) Actors of networks: The actors in business networks are individuals and firms. The business networks are limited to SMEs but we need to specify the partners with whom SMEs interact in networks. Hamilton and Gao (1990) and Chen (1994) identified family ties, extended family and close friends as social relationships in Taiwanese networks. According to Granovetter (1985), they are considered 'strong ties'. Geographical relations, acquaintances and indirect friends are important as well and constitute 'weak ties'. What kind of relationship are important for the founding of the enterprise, the shareholder structure, the foreign

investments, the human resources/management recruitment, and relations with suppliers, subcontractors and buyers?

(b) Content of the contractual exchange: Theoretically the content of a network exchange is *property rights*. Knoke and Kuklinski (1982) identified information, goods and services, power and influence as the relational content of network transactions. What kind of rights are exchanged in Taiwan's business networks in respect of the founding, human resources recruitment, supplying, subcontracting and distribution?

(c) Functional types of networks: Hamilton, Zeile and Kim (1990) identify four types of inter-firm networks: ownership, investment, production, and the distribution network. Using the functional domains of enterprises as a reference, networks are possible in every functional domain, such as finance, production, distribution/marketing, export, R&D, procurement, and investment abroad (especially in South-East Asia and China). In which functional areas are networks found in Taiwan?

(d) Are networks an industry-specific phenomenon? The empirical literature for Taiwan surveyed networks in traditional industries such as textiles and shoe manufacturing (Shieh 1992, Chen 1994, 1995). Recent studies (Luo and Yeh 1999) have started to analyze networks in Taiwan's high tech industries, such as the PC industry. If networks are an efficient institutional arrangement, they will be found in every industry. With the transformation of Taiwan's industry, Chen (1998) remarked, that the nature of networks was changing from a personal arrangement into a constructed or strategic arrangement. Can this trend be confirmed? To answer these questions I will draw on my field interviews and secondary data.

(3) Contracts in Taiwan's subcontracting networks

Taiwan's subcontracting networks seem to be a unique feature of Taiwan's manufacturing base:

(a) What characterizes the contracts in the subcontracting networks? For this the number of partners, duration of relationships, overlapping relationships, geographical distribution, exit options, and dependency will be surveyed.

(b) What are these subcontracting contracts like? Which contractual incentives are found?

(c) How can these contracts be enforced informally? What are the control mechanisms?

- (d) What are the agency costs to prevent moral hazard and hold up problems?
- (e) How do subcontracting networks differ from market transactions?

To answer these questions I will rely on my field interviews.

(4) Their contribution to Taiwan's economic development

I will conclude with an assessment of the importance of Taiwan's business networks to its economy. Networks, as informal institutions, are considered to be important to long term economic development (North 1990). Can networks, as informal institutions, substitute for formal institutions such as law and legal order? Are Taiwan's networks a unique institutional arrangement? Are they advantageous or disadvantageous for Taiwan's long-term economic development? Will Taiwan's business networks survive international institutional competition?

3. Research method

My field research took place in March 1999. As a visiting student at the Center for East Asian Economies and Societies at Tunghai University, I mainly conducted interviews with SMEs in Taichung⁸ and the surrounding area. These interviews were carried out together with Prof. Chen Chieh-Shuan, Director of the Center for East Asian Societies and Economies and his staff. Additional interviews were conducted in Taoyuan and Taipei County.⁹

The interviews were organized by the Center. The interviewed companies were chosen according to two criteria: (1) coverage of traditional and high tech industries and (2) language requirements (when possible with English speaking interview partners). The interview partners were chairmen or presidents of the SMEs and usually also founders of the respective businesses. The interviews were semi-structured and conducted with a basic questionnaire. The questionnaire was continuously adapted in the process. The interviews were open-ended (between two and four hours) and were recorded by the staff of the Center who also typed them (the Chinese ones).

⁸ Taichung is located in central Taiwan and is Taiwan's third biggest city. Taichung is known as Taiwan's largest machinery manufacturing base.

The sample of SMEs included the following industrial sectors:

Table 4: Field interviews by industry

<i>Industry</i>	<i>Type of products</i>	<i>Light/heavy/high-tech industry</i>
Chemical processing industry Plastic engineering industry	Chemical processing and plastic engineering for light industrial products	Light
Machinery & machinery components industry	Components for machinery industry, machine design and assembling	Heavy, high-tech
Electrical appliances	End user product	Light
Furniture industry	End user product	Light
Leather and Shoe industry	End user product	Light
Car industry	Components for the car industry	Light
Optical industry	Supplier of key components for the optical industry	High-tech
Metal processing	Engineering processes for light and high-tech industrial products	Light, high-tech

The data is qualitative, as the sample is not representative enough. It is supplemented by secondary data and information from informal discussions during this field research and earlier visits.¹⁰ I drew on field data of a number of surveys, including:

- a recent survey on networks in Taiwan's notebook PC industry by Luo and Yeh (1999),
- Hamilton's (1997) most recent survey on Taiwan's economic organization,
- Shieh's (1992) study on sub-contracting networks in the garment, electronics, toy and footwear industries,
- Hamilton and Kao's (1990) analysis of Chinese family businesses in Taiwan (1990)
- Greenhalgh's (1988) analysis of families and networks in Taiwan's economic development

The results of the field research are presented in Part Two.

⁹ I'd like to thank the German Trade Office Taipei for their help in organizing these additional interviews.

¹⁰ I stayed in Taiwan from May 1995 to August 1996.

PART II: FIELD RESEARCH RESULTS

In this part, we assess first the role of SMEs in Taiwan's economic development. After this Taiwan's SME networks are described according to the field research data and analyzed in light of the theoretical framework developed in Part I.

1. The role of SMEs in Taiwan's development and economy

Before analyzing Taiwan's SMEs in more detail, let us briefly recall the country's economic development.

1.1 Taiwan and its economic achievements

After fifty years of Japanese colonial rule, Taiwan was handed over to the Republic of China (ROC) in 1945. Since then the island has achieved a successful economic development despite its political turmoil, with the retreat of the nationalist government under General Chiang Kai-shek from the communist mainland in 1949, and despite its geo-political isolation after resigning from the United Nations in 1971. Today Taiwan is still considered a renegade province by the People's Republic of China (PRC) and is officially recognized by only 28 countries. The PRC is opposed to Taiwan becoming a member of the United Nations, the International Monetary Fund (IMF) and the World Trade Organization (WTO). After the death of Chiang Ching-kuo in 1987, martial law was lifted and Taiwan began a democratization process that culminated in the first democratic presidential election in 1996.¹¹

Taiwan started as an agriculture-based economy and with a (nominal) GNP *per capita* of US\$ 196 in 1952 (see table 5 below). Taiwan achieved such rapid growth that its GNP per capita had reached US\$ 13,233 in 1997. Today Taiwan exports manufactured goods worth half its GNP and ranks as the world's 15th largest trading nation preceded by South Korea and followed by Singapore (WTO Report 1998).

Taiwan's path of economic development in the last 45 years can be roughly divided into four periods:¹²

¹¹ Chiang Ching-kuo was the second president of the ROC and the son of Chiang Kai-shek.

¹² See my master's degree thesis: Taiwan (ROC): *Zur Rolle des Staates im wirtschaftlichen Entwicklungsprozess*, Fribourg, Switzerland, unpublished manuscript, 1994.

1. Import substitution with production of labor-intensive products in the 1950s
2. Export expansion in the 1960s
3. Import substitution with production of intermediate products in the 1970s
4. Technological upgrading after 1981

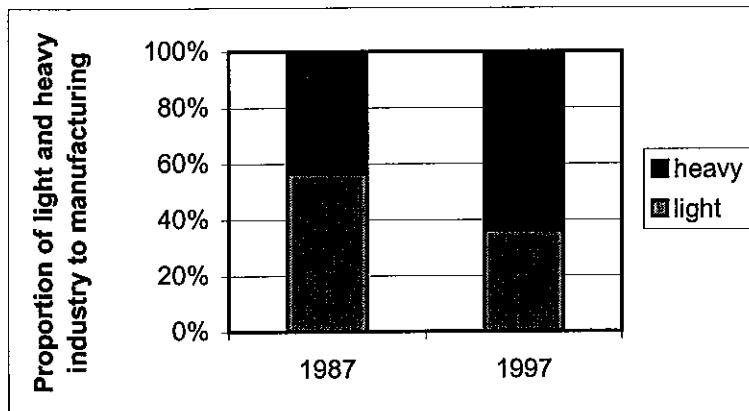
Table 5: Major economic indicators in historical perspective

Year	1952	1965	1973	1986	1997
Population in million	8.13	12.6	15.6	19.5	21.7
GNP in US\$ in million	1,674	2,811	10,727	77,299	285,299
GNP per capita in US\$	196	217	695	3,993	13,233
<i>GDP by sector (in %)</i>					
Agriculture	32.2	23.6	12.1	5.6	2.7
Industry	19.7	30.2	43.8	47.1	34.9
Manufacturing	12.9	22.3	36.8	39.4	27.7
Services	48.1	46.2	44.1	47.3	62.4
<i>GNP by expenditure (in %)</i>					
Exports	8.0	19.4	47.2	56.7	49.1
Imports	14.1	22.4	41.9	37.4	46.5

Source: TSDB 1998

The transformation of Taiwan's economy into an industrial-based economy is reflected in the sectoral distribution of the (nominal) GDP during this period, as shown in Table 5 above. Starting at a level of 19.7%, the contribution of the industrial sector to GDP reached its peak in 1986 with a value of 47%. Due to constant upgrading, Taiwan's manufacturing sector reached nearly 40% of GDP in 1986. Since that time the manufacturing sector has declined contributing only 27.7% of GDP in 1997. The decline in the manufacturing sector has two origins: Taiwan is transforming its industrial production (1) by moving the manufacturing of labor intensive goods to South-East Asia and (2) by producing more technology-intensive heavy goods (see figure 3 below).

Figure 3: Proportion of light and heavy industry to the manufacturing sector



Source: TSDB 1998

Today, Taiwan is among the world's top three producers of personal computers and peripherals. These products alone represented one fourth of all exports in 1997. Taiwan's first three export items in 1997 were electronic products, information and communication products and textile products (TSDB 1998). Taiwan's export markets are very diverse including the US (28%), Hong Kong/China (22.5%), North- and South-East Asia (20%) and Europe (17.8%) (TSDB 1998).

As exports soared, Taiwan registered huge trade surpluses that resulted in a strong appreciation of the NT\$ in the 1980s. The stronger NT\$ obliged Taiwan's economy to undergo a major restructuring from an industrial economy to a service-oriented economy. In 1997, the service sector reached 62.4% of GDP (as seen in table 5 before). This development is most welcomed by the government which plans – following the example of Hong Kong and Singapore - to establish Taiwan as an Asia Pacific Regional Operation Center (APROC). Developing Taiwan into an Asia-Pacific regional operation center means establishing Taiwan as a specialized regional hub for manufacturing, sea and air transportation, financial services, telecommunications, and media enterprises. With this plan, the government engaged in large-scale reforms of various laws and regulations with the goal of liberalizing these sectors, especially finance.

Though Taiwan's export-driven industrialization was similar to that of its neighbors, South Korea and Japan, its industrial organization differs considerably (Hamilton 1997:249).

Besides a rather large state-owned sector¹³, Taiwan has the smallest big business sector but the largest small-business sector. State enterprises and large businesses are found in the downstream sector producing intermediate goods, which are sold domestically, while small and medium-sized enterprises are located at the top of the value chain building the bridge to the world market.

Small and medium-sized enterprises thus greatly supported Taiwan's export industrialization. Today Taiwan's small and medium-sized manufacturers achieve a world beating status with their remarkable efficiency and flexible production-structure (FEER: February 11, 1999). In the following sections we will examine to what extent SMEs have played a role in Taiwan's economic development and how far their sophisticated production networks are critical to Taiwan's competitiveness.

1.2 SMEs in Taiwan: a definition

Most developed countries have a large number of SMEs employing many people. However, measuring their economic performance is tricky because of the varying definitions of SMEs and the varying national economic contexts in which SMEs operate, which makes an international comparison very difficult.

The official definition of SME in Taiwan adopted here was last revised in 1995. Therefore inconsistencies may occur between different data. According to the current official definition, the criteria for SMEs differ according to the sectoral activities, paid-in capital and number of permanent employees (see table 6 below):

Table 6: Revised definition of SME in Taiwan (1995)

Sectoral activity	Paid-in capital in NT\$	Permanent employees
Manufacturing, construction, and mining	< 60 million (2.7 million SFr)	< 200 employees
Agriculture, utilities, commerce, transportation, storage, communication, finance, real estate and various services	< 80 million (3.6 million SFr)	<50 employees

Source: SMEA/CIER 1998

¹³ State enterprises contributed 10-15% of the total value added of manufacturing from 1970-1990 (Hamilton 1997: 243).

Although the definition of SMEs varies from country to country, one criterion seems to be widely used: the number of employees. Within the OECD countries the upper limit for an SME is 500 employees (OECD 1997). In EU-statistics, SMEs are firms with fewer than 250 employees and an annual turnover of no more than 40 million ECU.¹⁴ In the subsequent sections small enterprises are considered small if they have fewer than 100 employees, medium-sized is 100 to 200 employees and large means more than 200 employees.¹⁵

All enterprises interviewed were from the manufacturing sector, but only half of them were SMEs according to Taiwan's official definition. However 80% were SMEs according to the definition of the European Union. The number of permanent employees varied from 14 to 670 and averaged 220. Their current paid-in capital varied from NT\$ 12 to NT\$ 1,400 million with an average of NT\$ 400 million.

1.3 SMEs in Taiwan's development and economy

SMEs have been important to Taiwan's economic development because of their contributions to its industrial production, value added, employment, and exports (SMEA/CIER 1998). Though their importance has been slowly declining in recent years, they are still important to Taiwan's economy according to the latest White Paper on Small and Medium Sized enterprises in Taiwan (SMEA/CIER 1998).

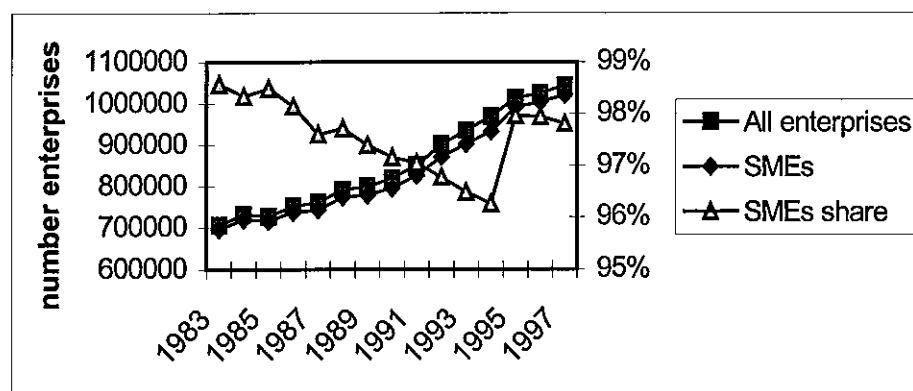
1.3.1 SMEs in absolute numbers

In 1997, Taiwan had 1,020,435 SMEs (according to the revised definition) and this represented 97.8% of the total number of firms. Though the total number of SMEs is continuously increasing, their percentage of the total number of companies has been decreasing since 1997 (see figure 4 below). The 1995 break in the data is due to the revised official definition of SMEs.

¹⁴ Recommendations of the commission of 3rd April 1996, JO no. L 107 of 30th April 1996.

¹⁵ In Switzerland there is no official definition. The Swiss Department of Statistics defines SMEs as enterprises with fewer than 250 employees (Statistical Yearbook, Federal Department of Statistics 1998).

Figure 4: SMEs as a proportion of the total number of enterprises 1983-1997



Source: SMEA/CIER 1998

One reason for the slow but ongoing decline of the SMEs could be the shift of Taiwan's industrial structure to capital intensive sectors and the relocation of labor intensive sectors outside Taiwan. Facing rising labor costs, Taiwanese SMEs need to move into high-tech industries and into wholesale business to stay competitive.

In terms of total numbers, SMEs are concentrated in the commercial sector (60%) and the manufacturing sector (14%). In the manufacturing sector, metal product industry has the biggest share (25.5%), followed by the machinery industry (9.5%), the food industry (8.8%), the plastic industry (8.7%) and the electrical and electronic machinery industry (7.5%).

As for the geographical distribution, SMEs are concentrated in Taipei City and County (34%) followed by Taichung City and County (11%), Kaoshiung City and County (10%), Taoyuan County (6%) and Changhua County (5%). In Taipei City the SMEs are active in the commercial sector whereas the manufacturing SMEs are located in Taipei County and Taichung County.

The age of the SMEs varies mostly between 10 and 20 years. Large firms are on average significantly older. In 1997, 13% of the SMEs had been in business for 20 years or more, 25% from 10 to 20 years, 22% from 5 to 10 years, 30% from 1 to 5 years, and 10% less than one year.

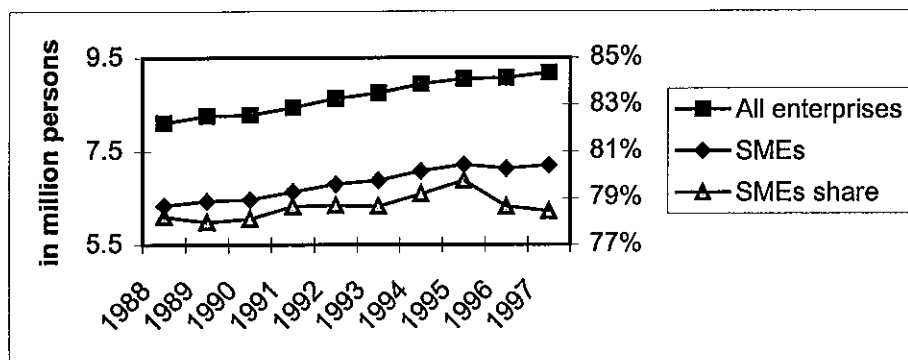
Looking at the field data, all companies interviewed were from the manufacturing sector, which is the dominant industrial sector for SMEs. Within the manufacturing sector, they

cover important industries (as seen in table 4 before). Taichung and its area is the second most important location for SMEs in Taiwan. The SMEs interviewed were founded between 1969 and 1989, half of them in the 1970s and half of them in the 1980s, which is in line with the data given above.

1.3.2 SMEs workforce

The decreasing importance of SMEs is also confirmed by the workforce data. In 1997, SMEs employed 78.4% of the total working population (workforce). This figure represents a small decrease since the peak in 1995 of 79.8% (see figure 5 below).

Figure 5: SME Workforce 1988-97



Source: SMEA/CIER 1998

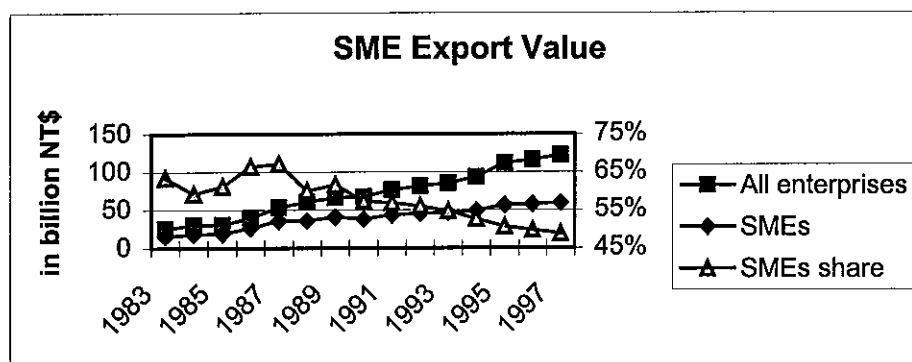
The switch from labor-intensive to high tech production is also reflected in the average SME employment data. The average number of employees per SME decreased from 8 employees per SME in 1991 to 7 employees per SME in 1997. The percentage of unpaid family members among employees – traditionally in labor-intensive activities - is also decreasing.

1.3.3 SMEs export value

In the 1980s and 1990s SMEs accounted for more than half of Taiwan's exports with a peak in 1987 of 67% (see figure 6 below). The decline of SMEs export share since then coincides with the rising outward investments to South East Asia.¹⁶

¹⁶ See section 1.3.5. below.

Figure 6: SME Export Value 1983-1997



Source: SMEA/CIER 1998

According to the export data of The Board of Foreign Trade (under the Ministry of Economic Affairs) SMEs export value accounted for 49.7% of total exports in 1997. This figure differs significantly from the sales tax data reported by the Ministry of Finance (MOF) of 26.4%. One explanation for this big difference is that some Taiwanese downstream SMEs abroad procure machinery and inputs from large companies in Taiwan such as synthetic fiber, cloth, steel, petrochemical material, thus boosting their exports. This procurement behavior could involve foreign investment or production networks as will be seen later. Another explanation is that large Original Equipment Manufacturing (OEM) and Original Design Manufacturing (ODM) orders of larger firms which are then transferred to SMEs (involving production networks) boosts the exports of large enterprises. This also could show that large enterprises subcontract production to SMEs that is not shown in the export statistics.

According to a SMEA survey conducted in 1998, SMEs main exports market are China, Europe, South-East Asia, and North America, whereas larger enterprises export mainly to China, South East Asia, Hong Kong, Latin America, and North-East Asia (SMEA/CIER 1998).

1.3.4 SMEs ownership and capital structure

The ownership structure is dominated by the single owner type. In the manufacturing sector the single owner type accounted for 44% of the total manufacturing SMEs, and in the commercial sector for 63% of the total number of commercial SMEs.

In capital structure there are significant differences between large enterprises and SMEs but these differences are not - as one might expect - in the net worth values but rather in the structure of assets and debts (see table 7 below):

Table 7: SME and Large Scale Enterprise Finances, 1996

	SMEs	Large enterprises
<i>Total Assets = Debt + Net worth</i>	100%	100%
Current assets	59.7%	59.1%
Long term investments	10.7%	16.1%
Fixed assets	26.6%	19.5%
Other assets	3.5%	5.3%
<i>Total Debt</i>	70.3%	69.7%
Current liabilities	63.3%	55.1%
short-term borrowing	23.5%	32.0%
Payables	15.5%	12.9%
Receivables	9.5%	3.6%
other current liabilities	14.3%	6.6%
Long-term debt	5.3%	11.0%
Other Debt	1.7%	3.5%
<i>Net worth</i>	29.7%	30.3%
Capital reserves	24.8%	19.5%
Legal reserves	2.7%	7.7%
Profit and Loss	2.2%	3.1%

Source: SMEA/CIER 1998

The proportion of net worth to total assets was 30% for both SMEs and large enterprises. This implies a total debt ratio (proportion of debt to total assets) of 70% or a net debt ratio (proportion of debt to net worth) of 230%.

The differences between SMEs and larger enterprises lie in the debt structure. The large enterprises have lower current liabilities (55%) but have more long-term debt (11%). The difference is striking when one compares the long-term capital ratios (net worth + long-term debt vs. fixed assets) which were 131.6% for SMEs and 211.8% for large enterprises. Within the current liabilities the SMEs share of short-term borrowing is only 37% compared to 58% for large enterprises.¹⁷

¹⁷ Interestingly, the debt/equity structure of SMEs might be one explanation why SMEs in Taiwan were less severely affected by the Asian financial crises. According to Moody's investor service, Taiwan has one of the lowest corporate debt-levels in the region (FEER: February 2, 1999).

These figures reflect the fact that access to bank loans is more difficult for SMEs than for larger enterprises. According to a survey conducted in 1997, the most important sources of capital for companies are bank loans and internal capital accumulation (shareholder and profits). For small-sized enterprises, intra-family borrowing or loans from friends are still important whereas bond issuing or selling company debts to commercial banks is more feasible for middle and large-sized companies.¹⁸

1.3.5 SMEs foreign direct investments

SMEs started massive Foreign Direct Investment (FDI) into South East Asia at the end of the 1980s because of the deterioration in their competitiveness. The loss of competitiveness was due both to a severe labor shortage with rising labor costs and to the sharp appreciation of the NT\$ - 40% in nominal terms between 1986-88 (Tu 1997:65) - and to the loss of the Generalized System of Preferences status. Additional factors were the liberalization of foreign exchange controls in 1987, the improving cross-strait relationships in the beginning of the 1990s and the 'Go-Southward' policy of the government after 1994. Though it is difficult to distinguish FDI-activities by larger enterprises from those of SMEs, the flexibility of these outward investments seems to support the suggestion that SMEs play an important role in Taiwan's FDI-flows. However, it is difficult to obtain accurate data on these investments, as individuals can remit US\$ 5 million without reporting to investment authorities, and as investments into China are made indirectly via Hong Kong or via other countries. Because of these unreported investments, FDIs into China and South East Asia tend to be underestimated.

Since 1986-88 Taiwan has transformed itself from a net FDI receiver into a net FDI investor (Tu 1997:64). Between 1987 and 1989 these FDIs went first to Thailand. Facing severe infrastructure problems, these investments then flowed to Malaysia between 1989 and 1991. As Malaysia started to face a labor shortage, Taiwan's SMEs relocated their production into mainland China and Vietnam, where Taiwan became the first investor. Investments into mainland China tripled between 1991 and 1997. Taiwan's regional investments were significantly helped by overseas Chinese and by the similar cultural background and language.

¹⁸ Another source of capital for SMEs is the government's Credit Guarantee Fund to which SMEs can apply if they do not have enough assets for a mortgage. In 1997 this fund provided guarantees for NT\$ 208.9 billion. But this figure represents only 6% of the total amount of bank loans to SMEs for 1997.

The criteria for the location of these investments were - among others - the degree of liberalization, foreign ownership regulation, the right to acquire land, the availability of preferential tax treatment, and the existence of local ethnic Chinese communities. As SMEs lacked resources for careful investigations, they made their investment decisions based on their feelings and faced many difficulties such as choosing the appropriate plant size, plant construction, labor training, immigration controls for their Taiwanese staff, lack of power supply, communication and transport infrastructure, strict government regulations and tedious application procedures. Not everybody was successful and some were simply very fortunate.

The Taiwanese investors usually brought capital, equipment, technology and readily accessible customers. They mainly transferred their production base to take advantage of large and cheap labor resources. They continued sourcing in Taiwan for machinery and industrial inputs due to their competitive input support networks or helped their sourcing partners to follow them.

The SMEs outward investments greatly affected Taiwan's industrial base and are one major explanation for the decreasing importance of SMEs. Taiwanese FDIs not only affected the division of labor of the region but also helped to build the industrial sector of their host economies and boost their export capacities.

1.3.6 SMEs research and development

Around 90% of Taiwan's high-tech firms are SMEs. The value-added proportion of manufacturing, however, varies considerably from industry to industry. The value added in the communication and electronics industry for example is about 30%-40% whereas in the pharmaceutical and precision instrument industry it is about 70%. These figures are in line with the spending of SMEs on research and development (R&D) activities and the patent applications. The electronics and components, data storage and processing industries and communications equipment had R&D expenditure below 50% of total R&D expenses whereas in the electro-optical, pharmaceutical and medical equipment industries the figure was higher. As for the SME share of total patent applications, it was between 80-100% for precision instruments and pharmaceuticals, and between 50-70% for the electronics, information and communication industries.

According to a survey, most R&D activities of SMEs and large enterprises are undertaken in-house. Besides in-house R&D, SMEs seem to cooperate more with local competitors for R&D activities, whereas larger firms seem to work more with domestic research institutes, foreign firms or universities. Compared to large enterprises, SME's absolute spending on R&D is rather small. But though SMEs' share of R&D expenses, personnel and value added are lower, they have a high share of total manufacturing patents.

1.4 Competitive environment for SMEs in Taiwan

According to interviews with Taiwan's leading business associations and a number of surveys conducted in 1997, SMEs identified the following constraints on their activities (see table 8 below).¹⁹ The conditions faced by enterprises can be classified according to demand and supply constraints, and to state and non state-constraints (Kleinewefers 1997:14).

Table 8: Constraints faced by Taiwanese SMEs

Market conditions	State and non-state conditions
Supply-side <ul style="list-style-type: none"> - Difficult access to capital - Rising labor costs and labor shortage - Restriction on foreign labor supply - Lack of skilled workers - Difficult access to land - Import- export barriers - Foreign exchange rate volatility - Rising material supply costs - Severe intra-sectoral competition - Small economies of scale - Low profit margins - Strong foreign competition 	State <ul style="list-style-type: none"> - Inadequate and unclear regulations - Ineffective law enforcement - Heavy tax burden - Unstable Mainland China relations - Low administrative efficiency - Deteriorating public security - WTO bid
Demand side <ul style="list-style-type: none"> - Gray economy - Domestic market saturation 	Non-state <ul style="list-style-type: none"> - Changing consumption habits - Stronger environmental concerns - More consumer protection

Source: SMEA/CIER 1998

After analyzing the SMEs contribution to employment, exports, R&D, outward investments and their competitive environment we can conclude that SMEs have been and are important to

¹⁹ The White Paper on SMEs provides an exhaustive evaluation of the competitive situation of Taiwanese SMEs (SMEA/CIER 1998).

Taiwan's economic (long term) development. But they have also been important because "they are the key to Taiwan's broad-based and sophisticated industrial networks which have been critical to industrial development and export competitiveness" (SMEA/CIER 1998). Taiwan's SME business networks, their functioning and contribution are the subject of the following sections.

2. SME business networks in Taiwan

Unlike South Korea's and Japan's vertically networked economies, Taiwan's economic organization is based on horizontal inter-firm networks.

2.1 Taiwan's SME business networks: a definition

Taiwan's business networks link people and firms on a horizontal basis. Hamilton (1997:259) furthermore distinguishes two types of horizontal networks in Taiwan: *family networks* and *guanxi networks*. The difference between the two networks lies in the different mechanism of control. Family networks - often referred to as business groups - are based on patrilineal, normative and hierarchically structured relationships (vertical control).²⁰ In *guanxi* networks, the relationships are based on norms of reciprocity between socially or inter-family related actors (horizontal control). *Guanxi* networks are typical for SMEs and are referred to here as *SME business networks*. The definition of Taiwan's SME business networks as *guanxi* networks is in line with the theoretical definition of business networks presented in Part I. In the next section, I will describe how business networks are organized in Taiwan by drawing on my own observations.

2.2 Types of SME business networks in Taiwan

Five types of SME business networks play an important role in Taiwan's economic organization. They can be differentiated according to their functions: (1) capital networks, (2) human resources networks, (3) production networks (subcontracting networks), (4) marketing networks and (5) foreign investment networks.

²⁰ Hamilton, Biggart and Orru did extensive research in the field of family business groups (Hamilton/Biggart 1988, Hamilton/Zeile/Kim 1990, Hamilton 1996, Orru et al. 1997).

2.2.1 Capital and investment networks

A striking feature of Taiwan's SMEs is their strong reliance on business networks for access to financial resources such as start-up capital, working capital or investment capital.

The SMEs interviewed were all founded together with family members (brothers, father and son), with friends or with co-workers. When asked about start-up capital, half of the SMEs interviewed indicated that the original capital was raised from family (*family ownership*) while the other half reported that the capital came from friends including neighbors, classmates or co-workers who became shareholders (*guanxi ownership*). One example of *guanxi* ownership is a founder of a machinery company that started with 50 shareholders, all former colleagues at a governmental research institute. The balance between family or *guanxi* ownership is difficult to evaluate as it was rather difficult to get precise data on financial matters but majority ownership is usually held by the family (Hamilton 1997:272).

The start-up capital varied between NT\$ 100,000 and NT\$ 16 million. The companies interviewed were either corporations or limited companies. The shareholders are usually silent partners not involved in the management of the company but receiving dividends for their capital investment. One manufacturer said that in some cases the shareholders are not even officially declared and give their capital directly to the owner. The owner is then the sole person liable to the outside world.

When asked about the current shareholder structure, most of them replied that it had not changed much compared to the original shareholder structure. A machinery company introduced venture capital participation up to 32% and has been publicly listed since 1998. One high-tech company in the optical electronics intended going public the following year. Today's paid-in capital of the interviewed companies varies between NT\$ 12 and 40 million, though two companies registered above NT\$ 1 billion. One of them moved into the aerospace industry and the other diversified into plastic industry. Another said that the capital provided by non-family sources was handed back when these needed it, so that the ownership finally returned to the family.

Business networks are also striking in investment activities. A chemical processing company participated in several joint ventures in Taiwan and abroad, either on the basis of friendship to the chairman or the president of the company or on the basis of former employers or co-workers. The investment activities did not follow any firm strategic logic but more based on profitability and trust. If the business was not profitable enough, they pulled out.²¹

One explanation for the capital and investment networks is of course the acute credit shortage between the 1950s and the late 1980s. As we have noted before, access to credit for SMEs is still limited today. All the companies interviewed were created before 1990 in the period of credit shortage and all but one confirmed that they had no access to bank loans at the time of the start-up. Bank loans were granted either on the basis of real estate as collateral or when the bank knew two guarantors. Banks would not grant loans on the basis of the profitability of the enterprise because the information was unreliable and because companies had poor accounting standards. This is one reason why banks would lend only on the basis of security (pawnshop mentality). Good relationships to the bank directors are thus considered essential and companies invest resources in keeping good relations with the bank (such as holding banquets). An entrepreneur having no such relationships or no guarantor standing for the borrowers has no chance of access to bank financing. All the SMEs interviewed but one had no real estate for collateral and could not qualify for bank loans. Only one started with a mortgage on real estate, which represented NT\$ 1.9 million in 1989. The others had to rely on alternative sources of credit such as private borrowings from family, neighbors or friends, or informal sources, such as deposits from employees, loans from suppliers and customers, rotating credit clubs, or pawnbrokers and moneylenders.

The investments or loans granted by family or friends are based on rational calculations. The information about the trust- or creditworthiness of one partner has generally been assessed either through long term personal experience as neighbors, classmates or co-workers, or is endorsed by a guarantor. As the regulated financial markets had rather limited investment opportunities and low interest rates, many were looking for profitable investments or simply higher returns. Thus decisions for loans are not solely based on personal reputation but also on the allocative efficiency of the investment.

²¹ "Business is business, money is money" (Interview on March 3, 1999).

Another frequently mentioned source of capital is working capital from suppliers or customers by postdating checks, usually payable three months after the date of the transaction. Checks either can be held until they are payable, or they are discounted by a bank. Taiwan's practice of using checks as a credit instrument, rather than as a cash instrument came from the fact that the check was legally better protected than promissory notes. Dishonoring checks was prosecuted with criminal penalties and official prosecution became a guarantee for creditworthiness. Although by 1987 the criminal penalty for bouncing checks has been lifted, postdated checks continue to be used as a credit instrument (Winn 1994:200).

Shares are also commonly held by employees. One of the companies interviewed quoted that its employees owned 30% of the stocks. In the time of credit shortage, taking savings deposits from employees and their relatives was common too. Until 1990 the government encouraged this practice by granting favorable tax treatment for the interest. Though deposits by non-banks have been officially proscribed since the 1989 Banking Law, this practice still exists and remains legal in regard to employees and families (Shea 1994:234).

One of the companies interviewed also made use of rotating credit clubs to raise capital for its expansion. In such savings and credit clubs (*biao hui* or *hu zu hui*), members make periodic contributions that are pooled in a fund from which loans are made.²² A *hui* will have several dozen members and one organizer (*hui tou*). The members are often colleagues, relatives or neighbors. The *hui* has a limited life span, usually one month for each member. All pay in a monthly amount that is agreed in advance. One can obtain a loan according to agreed rules. The rules can include drawing lots, first come first served, or bidding. A member who has not used the opportunity of a loan, pays less than a member who has already withdrawn. Thus the last withdrawal has the highest return. The return for the last member can be 25% or more a year (China News 23.6.1996). It is an expensive way of borrowing money, but often it may well be the only way of financing. In some *huis*, only the one who withdraws the money first is known, when the group is constituted. In this case the reputation of the organizer of the *hui* is at stake. The loans are used for acquisition of land or real estate, as insurance against sudden cash-flow crises, or for purposes the bank would not endorse such as stock speculation or business failures. Once the assets are acquired through a *hui*, they can be used as collateral to a bank. *Huis* are unregulated, unregistered and untaxed. The transactions are solely based

²² Such kind of informal credit associations are found in many developing countries such as India.

on trust. The information about creditworthiness is based on reputation and personal relations. They are risky as any member could default. Hartzell (1988:213) reports that 20% of all *huis* collapse before their completion. Some *huis* were coordinated by mutual saving societies (*hehui gongsi*). But in the late 1970s they were reorganized as small and medium sized enterprise banks (*zhongxiao qiye yinhang*) with the help of the government (Winn 1994:207).

In conclusion, all contracts in capital or ownership networks in which the actors are typically family, friends, suppliers or customers are based on trust and reputation. They are self-enforcing through mutual obligation (reciprocity). Not honoring one's obligation would mean losing one's reputation and thus access to further financial resources and other network resources.²³ The capital networks give an entrepreneur an enormous flexibility in investment and act as an insurance against acute financial problems which the formal financial sector does not provide. Besides relying on personal experience and reputation as indicators of creditworthiness, investment decisions follow an economic rationale of risks and returns on investment and ensure an efficient allocation of resources in the informal financial sector. Family and *guanxi* capital were Taiwan's most important source of venture capital for its export industrialization.

2.2.2 Human resources networks

Business networks are also important for access to labor resources. SMEs face more and more problems finding skilled and unskilled labor.

Since the labor shortage which started in the mid-1980s, SMEs have had problems finding cheap labor resources. One shoe manufacturer reported that it was common to hire relatives of current employees. As shoe manufacturing is a rather easy job and labor intensive, the company employed people from its neighborhood, where everyone knew each other very well. Through the overlapping employment and personal relationship loyalty bonds are fostered. When the shoe industry faced major restructuring and most manufacturers moved their production outside Taiwan, this manufacturer had to lay off most of its people and rehired the most skilful ones. Taking care for its reputation, it compensated the laid-off personnel very generously.

²³ One informant quoted that if he had failed in business, he would have lost his house, all his money and all his friends (Interview on March 13, 1999).

On the other hand, SMEs moving into high-tech industries face a problem in finding skilled people and not losing them to more attractive companies or industries such as the semiconductor industry. The high-tech SMEs interviewed reported that they had had to invest a great deal in the technical education of their staff. They usually start on the shop floor and may move up depending on their education and work. It was striking when we visited those companies how many meeting rooms were occupied with internal training. Hiring university graduates was reported to be difficult, as they are too demanding in salary terms and not very adaptable to the requirements of a SME. Hiring highly educated people - for example American Ph.D. graduates - was also reported difficult, as the working conditions in SMEs are not very attractive. Therefore various kinds of incentives like training abroad or profit sharing are offered by SMEs to keep their technical and managerial staff. To ensure that they come back, some create explicit incentives (reimbursing the educational investment if they leave); others just rely on loyalty.

The management positions are usually held by the owners either family or friends - often referred to as the inner circle (Hamilton 1997).²⁴ Ownership and management functions in SMEs are not separated.²⁵ Management outside this inner circle is taken care of by creating loyalty bonds. Once skilled people reach management level, the owner will not let them go easily and will prefer to offer them attractive terms. One car-part manufacturer explained that he started a new factory in South Taiwan for one of his best employees who wanted to leave the company. Others will help their former employees to start their own business. Helping their employees in this way creates loyalty bonds and prevents them from becoming competitors.

In times of labor shortage, networks play an important role in access to labor resources. Allocation efficiency is ensured through internal promotion relying on hard work and skills.

²⁴ There is an extensive literature about management in family firms (Wong 1985, Greenhalgh 1988, Redding 1990, Hamilton/Kao 1990, Hamilton 1997).

²⁵ Ownership and control are separated in larger (family-owned) enterprises and business groups (Hamilton 1997:264).

2.2.3 Production networks

Business networks are reported to be important for access to business information and for organizing production (what to produce and how to produce it). Most of the research on inter-firm networks in Taiwan was in the field of manufacturing (Hsieh 1992). Networks in the field of organization of production are often referred to as subcontracting networks (*xieli chang shang*) or as satellite assembling systems (*weixing gongchang*).

What characterizes Taiwan's organization of production is its particular division of labor through subcontracting. Taiwan's subcontracting networks can be divided along two dimensions (Hsieh 1992:56):

- *Horizontal versus vertical contracting*: Horizontal contracting means contracting out production steps to other contractors, for example when orders exceed capacity (*capacity subcontracting*) or when orders are not suitable for one's specialization (*specialization subcontracting*). Vertical contracting is when contracting out production steps to smaller downstream subcontracting units.
- *Outside versus inside contracting*: It can happen that the contractor provides space and machines to their subcontractors (inside contracting). Inside contracting can even be carried out in parallel to inside production. One machinery component manufacturer interviewed also did inside contracting for some parts. The most common case though is outside contracting. It also happens that a contractor sends one of his employees at his own expense to the subcontractor to advise and supervise the production.

Subcontracting relationships in this paper mean (1) contract relations and not employment relations, (2) located outside the contractors' factories (outside contracting), (3) involving all risks from contracting (behavioral or endogenous risks) as well as all risks from the environment (environmental or exogenous risks).

According to my observations, the patterns in starting production and setting up a subcontracting network were very similar for all SMEs. Most of the founders worked in a material supply company before and started simply by using suppliers' documentation or looked for a partner with either the technical or the managerial know-how. They usually

started production as original equipment manufacturer or as original design manufacturer for finished products or for intermediate products. For example, a chemical-processing manufacturer had a background in raw material trading and started supplying foam to the domestic furniture industry. He got his know-how by trial and error with chemical formulas, which he took from the raw material specification. Another case was an electrical appliance manufacturer, where one partner brought the capital, the other the production know-how and together they started manufacturing sewing machines for Japanese brands. An optical component manufacturer had worked for a Japanese lens manufacturer before and started lens production with his friends for the domestic and foreign camera industry. A shoe manufacturer invited his neighbors with a background in footwear to set up a company and started to manufacture sport and leisure footwear for foreign brands. The founder of a furniture trading company had some experience in furniture sourcing in Asia - which he had done for an American company before - and started to design his own products and to subcontract their manufacturing. The production of those products usually involved production steps that were either beyond the specialization or beyond the capacity of the SME, so that horizontal contracting out of production steps was needed.

Information about a potential subcontractor can be found through formal or informal means: One usually consults the trade catalogues published by the industrial associations such as the buyers guide or the catalogues of the manufacturer. Selecting a subcontractor usually involves sample testing, price estimate, trial order and classification (Shieh 1992). Another formal way to find a subcontractor is by putting an advertisement in a newspaper or contacting the association for the specific industrial sector. But often contacts are made informally through personal networks such as family, relatives, and friends. These can mediate and introduce subcontractors or contractors to each other.

Another way of setting up a subcontracting network is the spillover of employees. It happens frequently that employees start their own business. They often start with the help of their boss. The advantages are obvious: having the former factory as first customer, knowing the industry and using their network.

This relationship between the boss and the former employee becoming his own boss is very particular to Taiwan.²⁶ It often occurs that former employers help the new venture financially, technically and personally. They usually preserve good relations. It was reported that former employees seldom become competitors. Depending on the industry, it is a no-no to take away the customer base of one's former employer. Such behavior would lead to a loss of reputation in the industry. My observations show that spillovers are a way to set up a contracting network when the contractor is located in an area where there is no further industry to draw on for sub-contractors. One example is a car-part manufacturer in Taichung County where there is no further car industry. He set up spillovers doing subcontracting work in his area. In other cases relatives, friends or former colleagues were entrusted as subcontractors. This phenomenon, though, is more often found in light industries like shoe manufacturing, where neighbors can do sewing work as sub-contractors.

Another way for accessing subcontractors - especially for SMEs in high-end products - is to establish purchasing offices that do the sourcing of suppliers and subcontractor. These offices seem to use a combination of formal and informal channels to find sub-contractors. One machinery company located in Taoyuan County said that it has a sourcing office in Taichung, Taiwan's central area for the machinery industry. Others even have purchasing offices abroad. A furniture company said it has three purchasing offices in China, Thailand and Malaysia.

An important starting point for production networks in Taiwan is trading companies. Trading companies receive orders from foreign buyers and transmit orders to contractors, who place orders for parts to subcontractors. The production network structure thus becomes triangular (Shieh 1992). In some cases trading companies set up their own factories for the production of one type of product and use a subcontracting network for additional production needs. Trading companies usually hire a person who is familiar with the subcontractors in this field or who has good connections to the manufacturers (for example, as a former worker or salesperson with these manufacturers) or to raw material suppliers or trade associations. On the other hand manufacturers can specialize in one product line and set up a trading

²⁶ The desire to be one's own boss (*laoban*) is extremely strong in Taiwan (Greenhalgh 1988) and rewarded with high social recognition. Chinese have a saying "rather be a rooster's back than a cow's tail". In that sense Shieh (1992) titled his book *Boss Island*. If we recall that Taiwan has more than one million SMEs for a population of 21 million, than there is one *laoban* for every 20 persons.

department to cover more products in the industry. One chemical company said it had a trading department in Taipei and in Hong Kong.

The trading company would normally avoid direct contact between the subcontractor and the foreign buyer, though some reported that they take foreign customers to their subcontractors. Trading companies keep close control of the network relations. For example, subcontractors are not allowed to quote prices to the foreign buyer directly (Shieh 1992). Doing business through a trading company was very common in the past. Usually a new manufacturer would start with a trading company to build up his reputation and then try to get first hand orders (upward network extension). One car lamp manufacturer interviewed said 30% of his orders still come from trading companies and the rest is through direct contact with the client.

According to the findings of Shieh (1992) there are several criteria on which Taiwanese contractors base their to make or to buy (outsource) decision.²⁷ These criteria follow an economic rationale and are in large part historically grounded:

- saving fixed labor costs and saving capital invested in machinery
- shortages of labor (incl. higher legal labor standards and labor movement since early 1980s) and shortage of capital (from the 1960s until end of 1980s)
- lack of know-how, technology
- lack of performance incentives (e.g. quality)²⁸
- seasonal demand fluctuation (flexibility in putting out excess orders or tasks)
- delivery deadlines

Labor shortage and labor costs were frequently mentioned in my interviews as criteria for subcontracting in Taiwan. As SMEs still have difficult access to capital, capital shortage is still a pull factor for subcontracting. Another evidence supporting the labor shortage hypothesis is the fact that industries that transferred their production to South-East and East Asia including mainland China, and where labor is abundant and cheap, prefer to organize their production 100% in-house (Shieh 1992:86). My own observation also supports this evidence. Most outward investments of the interviewed SMEs in the region were fully owned

²⁷ Shieh (1992) did the most in-depth analysis of subcontracting networks in Taiwan that I know of.

²⁸ This means that profit oriented subcontractors have more incentives for performance than paid employees with fixed wages. This might be contradictory as some argue that keeping production in-house is better for controlling.

by Taiwanese and fully integrated in-house (e.g. shoe manufacturing, chemical-processing industry). A few others exported their whole subcontracting network into the host country.²⁹

The lack of know-how of the contractor was frequently mentioned as a criterion for subcontracting, especially in the high tech industries. Production steps are carried out when know-how is missing. Some SMEs just assemble parts and do not have the know-how of the rest of the value chain. In such cases they have to rely greatly on their subcontractors. Outside contracting is also done when special equipment is needed or in order to save immobilized capital for machinery. A final argument is economies of scale. A machine tool manufacturer reported that small amounts tend to be made in-house and large amounts outside. Subcontractors achieve greater economies of scale as they usually work for different contractors and they can therefore produce more cheaply.

According to a survey in the knitwear industry conducted by Hsieh in 1988, 38% of the contractors surveyed answered that they could do the subcontracted work, 37% said they lacked the equipment to do it, 17% said the costs were lower and 8% said they were higher. This survey indicates furthermore that one third did capacity subcontracting and one third did specialty subcontracting. As for my findings, contractors did only specialization subcontracting.

2.2.4 Marketing networks

Two types of marketing or distribution networks have to be distinguished: domestic distribution and export. Most of the SMEs interviewed produced in some way, directly or indirectly, for export markets (e.g. intermediate products for export goods). Some though started by producing import substituting products and switched to an export strategy later. This happened, for example, to a machinery tool manufacturer.

The traditional light industries such as the furniture industry or shoe industry, produced for export from the very beginning. The most common marketing channels are foreign exhibitions and trading companies. Some employ foreign agents. Others have their own foreign subsidiaries or branch offices in their host markets. One company reported that it used

²⁹ See also the section on 2.2.5 on foreign investment networks.

its branch office not only for sales but also for sourcing. Local sales are usually done through wholesale agents. The control of wholesale agents was reported to be difficult.³⁰

As the light industrial product manufacturers moved out of Taiwan, many suppliers had to follow their customers or started to export their intermediate products to their former domestic customers abroad.³¹ The foam processing manufacturer reported that he had to move his own production to Thailand and China as his customers would not pay transport costs from Taiwan any longer and required just-in-time delivery.

Most manufacturers interviewed, from light to high tech, were original equipment or original design manufacturers. Many said that they have a local brand but that is was not very successful. When asked why he did not start his own brand name, as he was doing ODM for more than 60 brands, one manufacturer answered that marketing was not his skill and that the only thing he knew about was how to manufacture his products.³²

Business networks seem not to be a dominant feature for export, though trading networks were known in the past as Chinese long-distance trading networks. They drew the attention of numerous scholars (Yong 1992, Menkhoff 1993, East Asia Analytical Unit 1995) but as the export markets shifted to the western world with Taiwan's export industrialization, the pattern of trade changed significantly. My data is not sufficient for further conclusion as far as domestic sales channels are concerned.

2.2.5 Foreign investment networks

The massive outward investments starting at the end of the 1980s were in the labor intensive sector which was dominated by export oriented SMEs and which faced the most intense competition in Taiwan. Though business networks seem not so strong for export activities nowadays, they seem to play an important role in Taiwanese foreign investment activities instead.

³⁰ "You never know if they work for you or compete with you" (Interview on March 13, 1999).

³¹ See also the next section 2.2.5 on foreign investment networks.

³² Interview on March 22, 1999.

Curiously, the foreign investment activities followed the pattern known from the regional long distant trading networks of Chinese merchants. Personal networks provide business information either for location decisions, or for running operations abroad. Outward investment networks, or FDI networks, have similar characteristics to the ownership networks mentioned before, as regards obtaining access to capital for these investments. As in the former Chinese long distance trade, Taiwanese SMEs could draw on connections and the help of overseas Chinese, especially in South-East Asia.

According to my observations, three types of outward investment networks can be distinguished:

- Intra-regional contracting network:³³ With the outward move of light industry, the existing domestic subcontracting networks initiated a division of labor between Taiwan and other Asian countries. Intermediate products or key components produced in Taiwan are now exported to Taiwanese customers that have moved abroad. Similarly foreign subsidiaries produce components which are assembled in Taiwan. These trade movements are reflected in Taiwan's trade statistics as has been shown before. The result is that Taiwan's sub-contracting networks have survived the new international division of labor. While South-East Asian countries take over light industries, Taiwan is moving into high-tech industries.
- Exporting the whole subcontracting system: In some cases the whole former subcontracting network is exported. One example concerns the customers of the chemical processing company that moved to Thailand and China. The Taiwanese manufacturers obliged their suppliers and subcontractors to follow them.
- Moving the whole production facility abroad: The decision to move production abroad is another pattern of FDI in the light industrial sector. The shoe manufacturer, for example, decided to move one part of his production to Guangzhou, China in 1992 after all his competitors pulled their production out of Taiwan. Like this manufacturer, many Taiwanese companies typically keep their R&D, sales and marketing and finance department in Taiwan and move their production to South-East Asia and China.

³³ For similar arguments see Hermann-Pillath (1994).

Interestingly, the production which in Taiwan was largely subcontracted, is carried out internally in the new host countries.³⁴ This shoe manufacturer employs more than 10,000 people in China, whereas in Taiwan he employed 1,000 at his peak.

In conclusion the actors in business networks are very similar throughout all the networks analyzed. Strong and weak ties, family and friends, both are dominant actors in business networks. Business networks seem important for access to scarce resources such as capital and labor, know-how and business information as well as for the organization of production. These material and immaterial property rights are exchanged in different types of business networks, such as ownership, human resources, production, marketing and foreign investment networks. Ownership and human resources networks are found in traditional as well as in high-tech industries. Luo and Yeh (1999) argue that the nature of production networks in traditional and high-tech industries differs considerably. Unfortunately I can not comment more on this very interesting finding as my data is not representative enough. In the following section the contract structure in business networks is analyzed. The analysis is limited to subcontracting networks, because of their special properties.

3. Contract structure in Taiwan's subcontracting networks

In this section, subcontracting networks are explained in light of the theoretical framework developed in Part I.

3.1 The characteristics of Taiwan's subcontracting networks

To characterize the contract relations in subcontracting networks a number of different dimensions are considered (see also Luo and Yeh 1999): (1) size and type of production contracted out (2) number of subcontracting partners per item or production step, (3) capacity at subcontractor, (4) duration of relationship, (5) geographical distribution, (6) overlapping relationships, and (7) exit options.

³⁴ It seems that the conditions for subcontracting are not fulfilled in the host countries. There are no restrictions on cheap and abundant labor, so that there is no push for subcontracting (see also Hsieh 1992). Another explanation could be that the reputation or trust mechanisms are not producing the informal contract enforcement (see also the next section for this argument).

- (1) How much of the production is contracted out varies from industry to industry and product to product. According to my findings all SMEs of the sample did outside contracting to some extent (from 5-10% up to 100%). A furniture trading company, for example, designs the furniture and contracts out the whole production to 25-40 subcontractors. A machine manufacturer designs the machine and assembles all the parts from more than 100 subcontractors. An electronic appliance manufacturer contracts out all but one critical part - because of timing, costs and risks – to more than 100 subcontractors and assembles them into a finished product. A car component manufacturer said he subcontracts 50% of his production to around 100 subcontractors. A shoe manufacturer reported that he subcontracts 5-10% of hand assemblage to family workshops. Finally a machine tool manufacturer explained that he contracted out 90% of the production of small parts and 50% of bigger parts to about 20 to 30 subcontractors. The number of subcontractors varies from 25 to more than 100, which is very large considering the coordination required. Two manufacturers reported that they had purchasing offices for sourcing whole parts from suppliers and for coordinating the subcontractors.
- (2) When asked from how many subcontractors the contractors sourced the same part, the answer varied from one to two. Luo and Yeh (1999) reported that in the notebook PC industry contractors would ask for quotations of several subcontractors and give the order to only a few. This is rather surprising considering that sourcing from one partner could make the contractor highly dependent on his subcontractor. This happens when costs of switching subcontractors are high (because of the transaction specific investments).
- (3) The capacity outsourced to one subcontractor also varies a great deal. For my sample, the capacity taken at one subcontractor varied from 5%-50%. This means that subcontractors would work with 2 or 3 contractors, sometimes more, which still shows high dependency. In the case in which the capacity exceeded 50%, the subcontractor was a spin-off of the original company. The close connection between the contractor and subcontractor in the spin off prevents risks resulting from dependence.
- (4) The duration of subcontracting relationships was reported as lasting from 5-8 years. Some said even between 18-20 years, with partners that had been their suppliers since the beginning. These are rather long relationships, implying long term contracts.

- (5) Geographically, the subcontractors are concentrated around the contractors, for example the machinery industry in Taichung, but subcontracting outside the geographical area is not unusual, since production steps are more and more often subcontracted abroad in the new regional division of labor.
- (6) The subcontracting network can overlap with other networks, such as investment networks or marketing networks. Some informants reported that they invested together with their supplier or customers in projects abroad.
- (7) To exit from subcontracting networks is possible, but usually avoided unless there is no other solution. Exit can have three major causes: price, quality, and delivery problems. If a current subcontractor is more expensive than another unrelated subcontractor, the contractor will ask his current subcontractor bring down his price. The subcontractor will usually accept, as he wants to stay in business. With quality and deadline issues, rather than switching subcontractors immediately, the contractor will try hard to assist his current subcontractor to reach the required standards.

These characteristics show that in subcontracting networks, the contracting partners are very dependent on each other. This economic dependency can favor mutual cooperative behavior but exposes the relation to high contractual risks. For this reason risks and incentives in subcontracting contracts will be more closely analyzed in the following section.

3.2 Contractual risks in Taiwan's subcontracting networks and their solutions

Looking at the network contracts between contractors and subcontractors, I will draw on the theoretical framework of Part I. The contract in subcontracting networks is a long term, relational and incomplete contract. To prevent the different contractual risks between the contractor and subcontractor, such as moral hazard and hold up, different incentive mechanisms can be found in Taiwan's subcontracting networks: (1) technical advice, (2) loans, (3) lending of machines, tools or factory space, (4) settlement terms, (5) capital investment into the subcontractor, and (6) capital investment into the contractor.

- (1) Technical advice by the contractor: By giving technical advice the contractor can prevent moral hazard, for example, quality problems in the production. The contractor might have

an inside view of the organization of the production process and can influence it to mutual advantage. Thus this common sharing of information reduces potential information asymmetries and prevents contracting risks. According to Hsieh's (1992) survey and my own, this is the most frequent incentive mechanism. Technical advice is not a real sunk investment, so that the hold up problem is avoided.

- (2) Loans for start-up or working capital provided to the subcontractor: This is a way to bind the subcontractor to the contractor. Moral hazard by the subcontractor can be prevented. The investment is not sunk for the contractor as repayment of the loan can be required, so that hold up problems can be avoided. But, on the other hand, the subcontractor becomes economically dependent on the contractor, if for example, the subcontractor buys special machines for the production of the parts needed by the contractor. Here a hold up risk exists. This is a genuine problem when the subcontractor is an exclusive supplier, but usually subcontractors supply different contractors. This is more often the case for start-ups and only observed in the case of a spin-off.
- (3) Borrow machinery, tools, and factory space: This type of incentive was mentioned by a machinery tool manufacturer. The risks are similar to the loan case. But the question is why a contractor that has already made investments in machinery should contract out that part of the work. The reason is the economies of scale that can be realized by a subcontractor, as he can supply more contractors.
- (4) Settlement terms: Contractors can grant different settlement terms for preventing performance risks by the subcontractor. According to their reputations, subcontractors obtain better or less good financial settlement terms.
- (5) Investments by the contractor into the subcontractor: This is a common feature in Taiwan to help the start-up of subcontractors. This usually happens when an employee wants to spin-off a production step by becoming his own boss. As mentioned earlier investments by the contractor can foster a loyal relationship and prevent the subcontractor becoming a competitor. Because of the strong mutual dependency spin-offs usually become exclusive subcontractors. Long-term experience and trust from the former employment relationship prevents moral hazard and hold up risks.

(6) Investment by the subcontractor into the contractor: This solution is a way to prevent hold up risks from the contractor. It is a way to bind the contractor to the subcontractor.

So far we have only spoken of contractual risks but there is another type of risk determining the make or buy decision: demand fluctuation. Taiwan's export industrialization also had to cope with risks from fluctuating foreign demand (Hsieh 1992:97). Subcontracting networks provided the necessary flexibility in the design of contracts for coping with fluctuation, either through capacity subcontracting, or by passing the demand risks to the subcontractors. Instead of rigid employment contracts, flexible subcontracting contracts allowed companies to transfer orders to subcontractors. Taiwan could draw on an industrial labor reserve including housewives and retired servicemen who started workshops in their homes. There was no guarantee of a constant order flow, though some contractors provided some work even in low seasons in order to have better terms in peak seasons. During the time of light industrialization, starting up as a subcontractor did not involve high costs, these workshops could easily stop working independently or switch production. Demand fluctuation was not mentioned during my interviews, which could mean that varying demand was a major problem only in traditional industries in Taiwan's first phase of industrialization.

In conclusion not all the explicit contractual incentives can protect the rather dependent subcontractors against the hold up risk by the contractor. Williamson's solution, vertical integration against hold up, is not observed in Taiwan's economic organization. Taiwan's subcontracting network contracts are supported by different types of contract enforcement mechanisms.

3.3 Contract enforcement in Taiwan's subcontracting networks

Two types of contract enforcement in networks can be observed in Taiwan: *self-enforcing contracts* through reputation, reciprocity and trust, and enforcement through *social norms*.

3.3.1 Self-enforcing contracts

Most companies interviewed stated that they had no formal contracts with their contracting partners and reported that they relied on (1) reputation, (2) reciprocity and (3) trust as contract enforcement mechanisms for preventing moral hazard and hold up problems.

- (1) Reputation was frequently referred to in my interviews. Taking away the customer base of a former employer, for example, would be punished with the loss of one's reputation. Reputation of the contracting partners is considered an important means to ensure cooperative behavior. As demonstrated theoretically, reputation as a guarantee can prevent contractual risks. When reputation is not only personal, but also communicated in the subcontracting network, contracts become multilaterally self-enforcing. Failing in business though is not punished by a definitive loss of reputation. Business failures are considered a risk that is not linked to uncooperative behavior.
- (2) Reciprocal behavior (theoretically described as tit for tat strategy) prevents contractual risks as the partners have an interest in an ongoing relationship. Considering the typical time frame of subcontracting relationships for more than 5 years, this condition is met in networks.
- (3) Trust was also reported as an important contractual enforcement mechanism. Fulfilling trust expectations and reciprocating trust can prevent dishonest behavior when interactions are repeated. This condition is fulfilled in subcontracting networks.

So far only bilateral subcontracting relationships have been considered. The networks can be extended through brokers or intermediaries relying on self-enforcing contracts (as shown theoretically). Though networks are an agency-cost-saving institutional arrangement, the costs occurring are carried privately by the contracting partners or shared among the network partners. Subcontracting networks and all other kinds of networks are additionally supported by strong social norms making up Taiwan's (meta-)Confucian social capital.

3.3.2 (Meta-)Confucian norms and Taiwan's social capital

Besides private enforcement, contractual risks such as moral hazard and hold up can be prevented through socially sanctioned norms. Taiwan's society is ruled by norms derived from (meta)-Confucianism. They constitute Taiwan's 'social capital' (Coleman 1990).

To describe Chinese culture, social scientists mention three key socio-cultural concepts: (1) personal relationships (*guanxi*), (2) mutual obligation (*jenqing*) and (3) face (*mianzu*). For understanding network phenomena in Chinese societies - in mainland China, Taiwan, Hong

Kong or ethnic Chinese communities overseas – all three concepts are important (Hwang 1987). *Guanxi* is a modern Chinese notion that can be translated as ‘particularistic ties’ or ‘personal networks’ (King 1991). *Guanxi* are personal networks based on flexible attributes shared by people. *Guanxi* is often constructed with the help of intermediaries linked by mutual obligation (*jenching*).

The Chinese society is often defined as society based on relationships in opposition to a society based on individualism such as the Western societies. In Confucian social theory, the individual is considered as an interactive or relational human being. This implies two dimensions: first a differentiation to be made between individuals, and second the kind of relations to be established between individuals. Relations are graded according to the degree of intimacy. The Confucian culture differentiates between five fundamental or cardinal relations (*wulun*): (1) affection between parent and child (*cheng*), (2) righteousness between ruler and subject (*yi*), (3) ‘distinction’ between husband and wife (*pieh*), (4) ‘order’ between older brother and younger brother and (5) sincerity between friends (Hwang 1987). Besides pre-ordained relationships like the father-son relationship in which status and responsibilities are fixed, the other relationships can be voluntarily constructed by the individual e.g. husband-wife, friend-friend relationships. The Confucian individual is an autonomous individual and free in deciding to enter and build relationships. Confucian social theory places the individual at the center of the web of relations.

Confucianism is often misinterpreted as a group and family oriented. The concept of group in the Confucian culture is a relative and elastic concept as there are no boundaries of group or family as such. The family (*jia*) can be extended to kinship, lineage, clan or other close people. It is up to the individual to decide how to define and expand the boundary of the family. Greenhalgh (1988), Kao (1989), and Chen (1994) call these simulated or extended family relationships. The group boundary is defined according to common (*tong*) and shared attributes such as kinship, native place, dialect, and religious belief. The more attributes an individual has, the more personal relationships (*guanxi*) he is able to establish. The most common shared attributes for the identification of a group are the native place (from village to province), kinship, schoolmate (*tong xue*), coworker (*tong she*), sworn brotherhood, surname, and teacher-student relation. Strangers in this sense are people with whom there is no interaction, whether they share common attributes or not. To build a relationship with a

stranger, Chinese use intermediaries. That makes the group open and with flexible boundaries.

Mediating social relationships is considered a human obligation. Reciprocity in the Confucian culture is a strong social norm.³⁵ The Chinese typically feels that he is locked into a web of human obligations and relations (*jenching wang* and *guanxi wang*). This means heavy social investment, as one is socially obliged to respond to any request for help from others. That is why Weber (in Hwang 1987) considered the particularistic structure of *guanxi* relations as an obstacle for modernization - the development of impersonal market relations. But with the modernization of Chinese societies like Taiwan and Hong Kong, *guanxi* has not disappeared but has rather been transformed and adapted to the needs of a modern market economy and civil society. Relationships in economic life are underlying economic rationality.

It is therefore not surprising that the Chinese have demonstrated impressive and sophisticated skills in network building in their everyday life (Hwang 1987). Whether in Taiwan, Hong Kong or in mainland China, cultivating personal relationships is still considered important for getting things done. Networks mean access to all kinds of resources.

Taiwan's subcontracting networks and Taiwan's economic organization has been heavily supported by these (meta-)Confucian social norms on which Taiwan's social capital is based. These norms help to signal trustworthiness and support the self-enforcing contracts to prevent *ex post* contractual risks and reduce the agency costs of contract enforcement supported by the private parties and which are shared in the network.

³⁵ Common expression are "I owe him a *jenching*," or "he owes me a *jenching*", "there is no *jenching* between us" (Hwang 1987).

CONCLUSION

Taiwan's business networks are a low cost institutional arrangement for allocating scarce resources. Compared to the market allocation, the implicit contracts in business networks save agency costs for preventing contractual risks and enforcement of contracts. There are two possible interpretations for explaining Taiwan's business networks:

Thesis 1: Taiwan's business networks are an efficient response to inadequate formal institutions (second best solution)

Winn (1994) explains the existence of inadequate legal institutions (law and judiciary) and financial institutions (low and inadequate accounting standards) in Taiwan. Suspicion towards law and government (patronage and corruption) makes people favor informal institutions. Inappropriate formal institutions force people to interact in the shadow of the law by self-organization. Business networks are seen as substitutes for law and law is used only as a last resort. The costs of establishing and maintaining the network are carried privately by the network members. They are the equivalent to taxes and in fact occur in addition to taxes. This may also be one explanation of the high incidence of tax evasion in Taiwan. With inadequate sources of information about business opportunities and risks, business networks offer a medium for the exchange of information, such as information about reputation or about profitable investment opportunities. In addition to this, networks are also a response to restrictions on capital, labor and information (see also Greenhalgh 1994). Subcontracting networks can be interpreted as an efficient way to cope with limited access to such resources.

Theses 2: Taiwan's business networks are more efficient than formal institutions (first best solution)

Taiwan's business networks provide an informal institutional arrangement with low cost coordination, information and enforcement. Taiwan's business networks have low barriers to entry (capital and labor-wise), so that SMEs face high domestic competition for export markets. Networks ensure allocation efficiency much like the market but with lower agency costs. They can additionally draw on Taiwan's social capital, in which reciprocity norms are very strong and socially sanctioned.

Taiwan's business networks are an important informal institutional arrangement in the country's economic organization and economic development.

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