Master Thesis

Foreign investment in Vietnam:

Business opportunities for Dutch firms in the cold chain industry in Vietnam

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Preface

This Master thesis could not have been accomplished without the help of certain people, whom I would like to thank here. First I would like to thank Mr. Ton van Zeeland, Consul General in Ho Chi Minh City, Vietnam. He gave me the opportunity to conduct research in the beautiful country Vietnam at the office of the Consulate General. Not only have I been working on my research during that time, I have also been able to experience what it means to work for the Dutch government abroad. I enjoyed working on the different tasks that were assigned to me.
Further, I would like to thank all my previous coworkers for being so friendly and helpful during my stay in Vietnam, in particular Mr. Le Son, who has helped me many times with my research. Cam on!

Secondly, I would like to thank my supervisor Dr. Bartjan Pennink for his comments, feedback and support during and after my stay in Vietnam. Especially the efforts he took to make an introduction video which has been used during the Holland Days, was received with much appreciation. Further, I would like to thank Prof. Dr. Karsten, who gave me valuable feedback on my thesis.
Last but certainly not least, I would like to thank my parents and Ruth for visiting me in Vietnam and believing and supporting me during the whole time I worked on my thesis. Thank you all!

I enjoyed the time I spent working on this thesis. I hope the reader will enjoy reading this thesis and that it will be helpful for those who are interested (in doing business) in Vietnam.

Niels Velderman
Groningen, September 2007

Management summary

This management summary contains hyperlinks to related chapters in this thesis.

Vietnam is an emerging country, a country that is in transition. It is becoming less state-organized. Vietnam's economy is growing year on year, inflation rates are stabilizing, consumer behavior is changing, labor costs are low and markets are open for foreign investors. In a country with more than 80 million inhabitants, the business opportunities are numerous. The WTO membership of Vietnam will contribute to more openness of the country's economy and its markets.
The cold chain industry is one of the newly emerging sectors in Vietnam. This thesis tries to give answers to the most emerging questions on the cold chain in Vietnam. The results of this study can be summarized as following;

The economical prospects for the development of the cold chain in Vietnam are good. The demand for fresh food from the domestic market is growing. The traditional wet markets are an important factor in this. However, the development of modern grocery stores is growing rapidly and their share in the channel of food distribution will be doubled in the coming five years. Most interesting areas for modern food channels (grocery stores) are the major cities, leading by Ho Chi Minh in the South and Hanoi in the North. It is expected that the annual increase of the export of seafood will continue the coming years as well.
The availability of cheap labor is a major attractiveness to, not only the cold chain, but to many markets. The limited education of the gross of the labor force, however, makes it mainly attractive for low skilled work, like mass production.

The changing consumer behavior, the involvement of foreign firms in the sector and the WTO membership pushes the quality demand for storage, handling and transportation of perishables. Each location in the cold chain needs proper cold chain storage. Key locations are at the production sites and at major distribution locations like airports.

Facilities to the cold chain have to grow along the increase of supply and demand for cold chain products.

Changes in the cold chain will undoubtedly affect direct-related sectors. Since distribution is a key element in the cold chain, a good distribution network is needed. Vietnam is a large stretched country, with some dense populated cities. Distances can be long. The availability of good roads and proper infrastructure like bridges is limited. Essential to distribution of goods a well organized network of (different) roads for all traffic is needed. The current situation gives opportunities for firms involved in infrastructure in al its aspects.

Rivalry is, however, little, which allows existing actors to fully invest and grow in the cold chain and even in some related industries. The government supports large projects in cold chain. The lack of rules for quality and control stimulate activity in the cold chain, but discourages exports to developed countries. Foreign companies involved in exports have set their own rules equaling the rules on quality from the export country.

Foreign investment inflows set each year a new record. Direct investments take a serious part in the GDP of Vietnam. Foreign direct investment seems to outnumber portfolio investment as favorite investment form. This would suggest that foreign ownership is increasing as well. The Vietnamese government however, protects some sectors from foreign intervention. The cold chain and infrastructure are not among these sectors.

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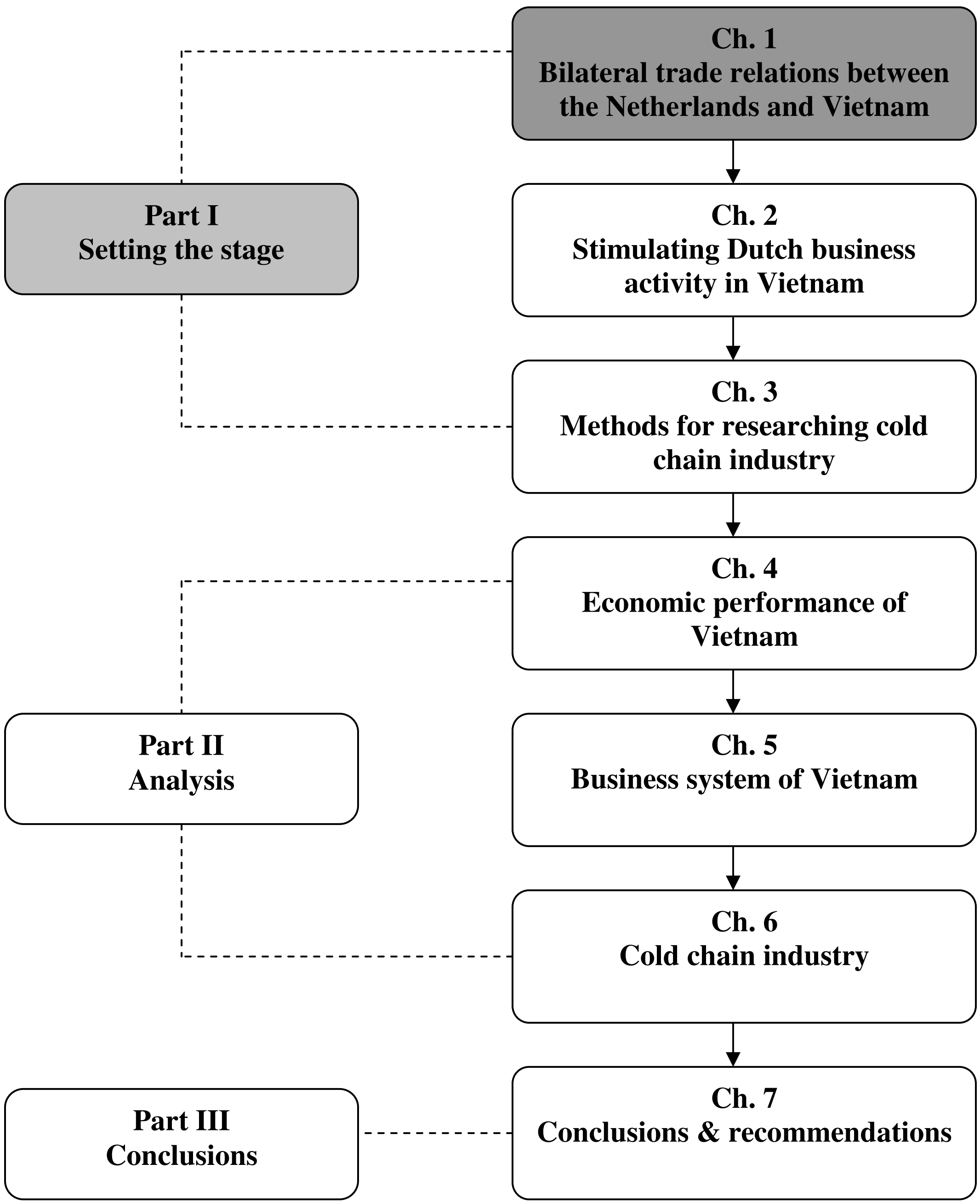


Chapter 1

Bilateral trade relations between the Netherlands and Vietnam

1.1 Introduction

The research is divided in three parts. The first two parts account for three chapters, the last part contains the analysis of the research with the final conclusions and recommendations for future research. In part one a theoretical approach is used to prepare the actual research. Insights will be given in the relation between the Netherlands and Vietnam. Also, the concept of research will be explained, through the used theories and methods. Besides this the main research question and the sub questions will be stated and explained. In part II the analysis of the research of the cold chain in Vietnam will come forward. Together with insights of the economic performance of Vietnam and its business system, will this result in a final conclusion and recommendation which can be found in the third part.

This chapter will be an introduction to the research environment. It will give insights in the relation between the Netherlands and Vietnam from when it was established until the current state of affairs.

1.2 Trade relations between the Netherlands and Vietnam

The colonial period had a notable influence on the Asian region. The British have influenced their colonized countries Hong Kong, Singapore and Malaysia. Indonesia has been influenced by the Netherlands, the Philippines by the USA and Vietnam by France. These western countries all have established patterns of relationships between government and business, structures of law and an institutional fabric in the society, which are still visible in the today systems (Redding, 2001).

Trade relations between the Netherlands and Vietnam go back to the 17th century. Ever since the Dutch East India Company (VOC) landed in Vietnam trade relations have been established (Smidts, 2006). Nowadays the relations between the Netherlands and Vietnam have been intensified and expanded in different areas, from which political -and economical relations are the most important.

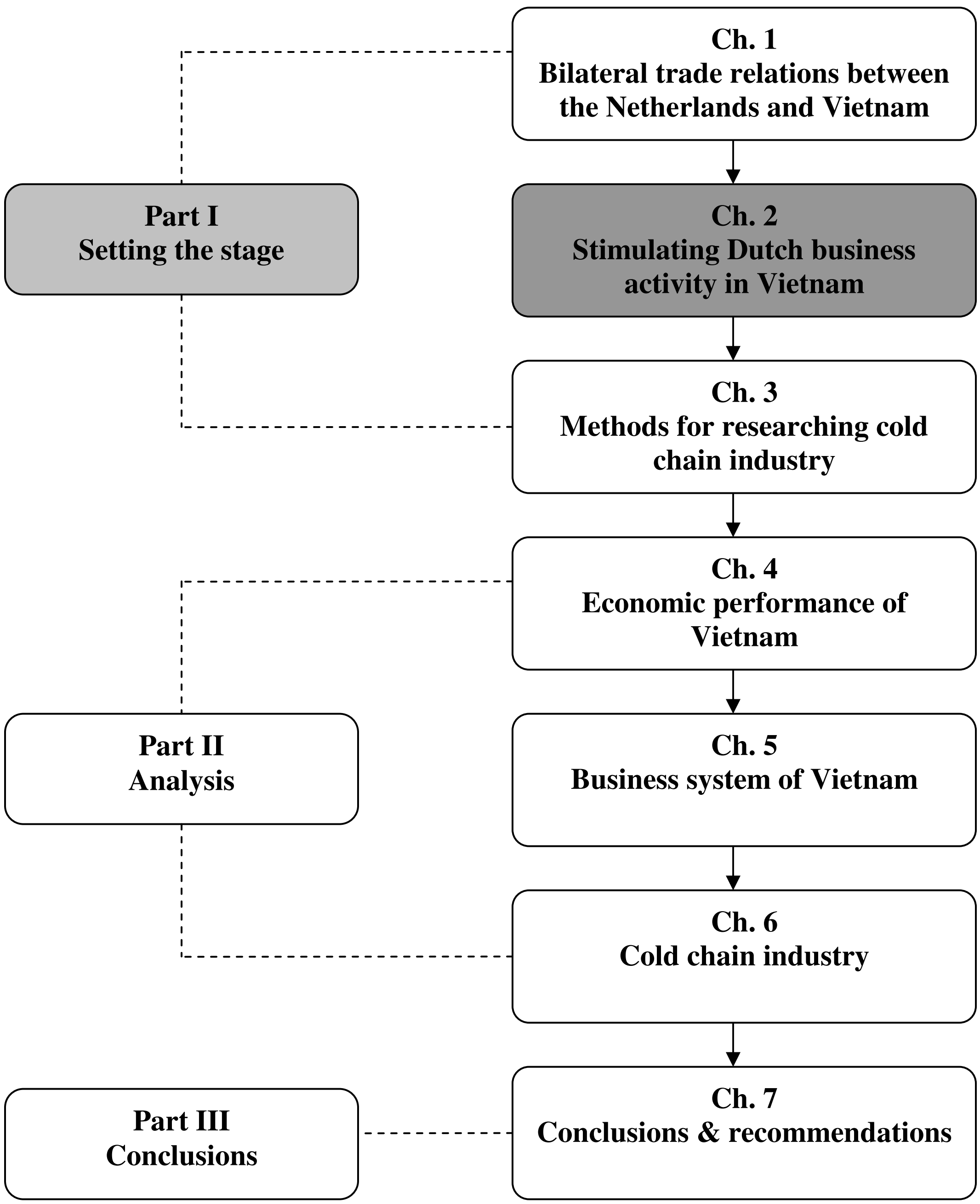
Vietnam has an Embassy in The Hague. The Embassy of the Netherlands is located in the capital Hanoi in the North of Vietnam. Because of the economical importance of the South of Vietnam, the Netherlands has since 1997 a Consulate General, located in Ho Chi Minh City.

Investments and trade are the main indicators of the economic relations between the two countries. The past years have shown large growth in the amount of exports from Vietnam to the Netherlands. Export mainly includes rice, rubber, coffee, cashew nuts, seafood, textiles, footwear, handicrafts and electronic parts. Up till May 2006 Dutch implemented investments in Vietnam was worth a total of USD 2,029 million. This makes the Netherlands the 8th largest foreign investor in Vietnam and the 2nd largest investor from the European Union (Netherlands Embassy, 2006).

The amount of trade from the Netherlands to Vietnam is smaller, but nonetheless is it growing at a considerable rate. In 2005, exports from the Netherlands to Vietnam were worth USD 313 million. Exports from the Netherlands to Vietnam mainly consist of machinery, chemicals and pharmaceuticals (Wijnberg, 2006).

Chapter 2

2 Stimulating Dutch business activity in Vietnam by the Consulate General



Chapter 2

Stimulating Dutch business activity in Vietnam by the Consulate General

2.1 Introduction

In this chapter information about the research will be provided. First, insight will be provided in the work and activities of the Netherlands Consulate General in Ho Chi Minh City (HCMC), Vietnam. Second, global information will be given about identifying promising sectors in Vietnam. After that the subject of the research will be explained and with this the research question will be formulated. A clear structure of the whole research can be found in paragraph 2.5. A short summary will end this chapter.

2.2 Consulate General in Vietnam

Since 1997 the Netherlands has a Consulate General (CG) in Ho Chi Minh City, Vietnam. The main reason then was the growth of the Dutch investments in HCMC and its surroundings. The role of the CG is to help Dutch companies in finding their way in Vietnam and assisting Vietnamese entrepreneurs on their path to invest in the Netherlands. Beside this, another large task is within the consular section. The CG helps and informs Vietnamese citizens who want to travel to the Netherlands and assists the Dutch residing in -or touring through Vietnam. The third task is on the cultural level. All kind of activities are taken to support, understand and stimulate the cultures of both countries (Consulate General, 2006).
The economical and commercial department is the most important section for the Dutch business. The economic and commercial section of the CG offers active support to Dutch companies already present in Vietnam and Dutch companies interested in doing business in Vietnam. Such assistance could consist of providing advices on market potentials,

information on different economic sectors, providing contact-details of relevant companies and government institutions, and supporting and advising Dutch companies on projects sponsored and/or supported by the Dutch government.

Since the first Dutch company, VOC, was established in Vietnam many Dutch-originated companies have followed. All kinds of business can be found in Vietnam, from large multi-national companies to small and medium enterprises. Besides Dutch-originated companies, Vietnam also has Dutch entrepreneurs, who are active with, mostly, their own company in different sectors across the country of Vietnam. Roughly there are about 40 Dutch companies joined into a Dutch Business Organization located in HCMC. Over 200 Dutch nationals have registered with the CG as being residents in Vietnam.

2.3 Identifying promising industries

In order to identify business opportunities in a certain promising industry one must know what a promising industry is and how it is defined. The Dutch agency for international business and cooperation (EVD) defines a promising sector as following; an industry is promising at *a combination of an attractive market, for instance through large demand or through government investments, and a reasonably expected suitable Dutch supply.*
Together with the Dutch business, the CG has formulated seven determinants of a promising sector. These are:

- Reasonable demand (*primary determinant*);
- Commercial attractive (*primary determinant*);
- Strategic importance (*secondary determinant*);
- Price / quality ratio (*secondary determinant*);
- Long lasting business (*secondary determinant*);
- Identified as priority sector by Vietnamese government (*secondary determinant*);
- Dutch companies must play a leading role in that industry (*secondary determinant*);

A distinction has been made between a primary and a secondary determinant. Experience and practical examples from the Netherlands Embassy, CG and EVD have shown that it is very hard for promising sectors to apply to all seven determinants. Therefore, primary indicators followed by secondary indicators have been made to analyze sectors and to be able to identify them as promising for the Netherlands. Most important determinants are the (i) demand from the market, its development and the commercial attractiveness. A sector that is in a full process of development in a country that has not fully been explored, gives opportunities for a country like the Netherlands. Commercial attractiveness (ii) stands for the possibilities for imports and/or investments from the Netherlands.

Strategic importance (iii) as determinant is important for a sector when over a long term (v) profits, relevant developments or contributions to the country or market can be made or established. With Official Development Assistance (ODA) or other forms of (financial) aid, investments in promising sectors can be supported for a period of time. It is therefore important that investments in a sector needs to be equally divided into the price and quality it delivers for either the investor or the sector or its surroundings. The strategic importance and the price/ quality ratio (iv) reflects the extend of the durability of investments in a promising sector. In order to overcome difficulties when doing business in a country like Vietnam, it is very helpful to have the support of the (local) Vietnamese government (vi). Sectors identified as a priority sector will have the cooperation of the government.

The leading role determinant (vii) is the seventh determinant which can be used by an objective researcher or institution to determine a sector as promising and interesting for Dutch investors. Leading roles in certain industries often comes with knowledge and support, which can be of great assistance when investing in the same sector in Vietnam.

Cold chain as promising sector

The Dutch agency for international business and cooperation (EVD) has identified four industries which could be interesting for Dutch companies. These are; (1) agriculture, (2) environment, (3) energy and water and (4) transport and logistics. Based on the above mentioned determinants the sector transport and logistics sector is seen as a promising sector. The Netherlands has a leading role within the transport and distribution sector in Europe (EVD, 2006).

Transport and logistics is a term that can be applicable to many sectors and industries. Investigating opportunities within the whole transport and logistics sector would be beyond the scope of this research. Rather more useful insights can be given when focusing on a specific element within the transport and logistics sector. For all industries, transport is of great importance. Certain products need a special kind of transport. Products like fruits, meat, fishery, dairy, vegetables, flowers and pharmaceuticals are temperature-sensitive. For imports or exports of each of these products a temperature controlled network of facilities (cold chain) is needed. Agriculture is an important sector in Vietnam. Fruits, vegetables and aquatics are important export products. The economy is growing, the country is developing and so are the needs from the local consumers. Healthiness plays a more important role in Vietnam, especially the generation after the Vietnam War has improving demands concerning health and nutrition (Interview: Dutch Lady). These factors together give enough incentives to investigate the cold chain* sector in Vietnam and its business opportunities for the Netherlands.

2.4 Business opportunities for Dutch firms in the cold chain sector in Vietnam

Food and other perishables have to be stored in a temperature controlled environment from begin until the end (harvest until consumption). This, in order to maintain the quality and to guarantee the safety of the consumer. Not only the harvest and storage should be under temperature control. Transport of perishables is an important link in the product lifecycle of food. Especially the distribution of goods plays a crucial role in the supply chain of consumer goods. Within the Vietnamese wholesale business most storage facilities and related infrastructure are not so well developed. Obstacles are climate control, security of storage facilities and the lack of finance for improvements. In the recent years a small amount of foreign companies have invested in modern storage facilities. In South Vietnam cold chain harbor facilities have been established (www.evd.nl).

Vietnam has developed a fairly good export cold chain (for exporting frozen seafood), but on the other hand imports and transportation are weaker and more vulnerable to power interruptions. Fresh product exporters have found that many Vietnamese importers do not adequately control the temperature and humidity in their chillers, thereby shortening the useful life of perishable commodities (USDA Gain report, 2004).

The cold chain industry requires temperature controlled transport in order to function well and to secure the quality and safety for the consumer. The cold chain industry in the Netherlands is much more open and better developed than its Vietnamese counterpart. Around 11 % of the 12.000 transport companies in the Netherlands are partly or completely specialized in the transport of perishables. Those companies are characterized by a high degree of specialization and specific knowledge of temperature management (www.transfrigoroute.nl). Therefore it could be very interesting for Dutch companies to look for investment opportunities within the cold chain industry in Vietnam. The development of infrastructure is one aspect of this development. Other aspects are the specific elements within the cold chain (materials, knowledge, supplies etc) but also the form of investment and the need and cooperation of Vietnam and her government.

In this study a research has been conducted on the situation of the cold chain industry in Vietnam.
The analysis of the cold chain will include information on the attractiveness of the industry for foreign investments and information on investment forms when investing in the cold chain or in related fields. The main goal is to provide the CG with relevant information on the business opportunities for Dutch companies in the cold chain industry. Therefore, the following main research question has been formulated:

What are the business opportunities for Dutch firms in the cold chain industry in Vietnam?

In order to give a clear, correct and valuable answer, the main question has been divided into three different sub questions. The sub questions combined together will give the incentives for answering the main research question.

The sub questions are

1. *How does the cold chain industry in Vietnam looks like?*

   In order to say something useful about the industry, insight is needed in this industry. Insights can be created by identifying the different aspects within the cold chain. Besides this, related areas to the cold chain can also contribute to the understanding and analysis of the business opportunities. By doing this a better understanding can be created of the interesting areas within the industry. And with this, a better perspective can be created for the interested. This sub question will be answered in chapter six.

2. *What kind of business system does Vietnam have?*

   Now Vietnam is changing from a closed economy to a more open variant, where foreign companies are allowed to enter the market and operate within the market, is interesting to see if these changes influence the business system. The results of the analysis will give (theoretical) insights in the business background of the country. Chapter five is about the business system of Vietnam.

3. *Which investment opportunities do exist in the cold chain in Vietnam?*

   The cold chain is a broad area, with many related fields that require economical attention. Through a thorough analysis, a suggestion can be made which areas in the cold chain are economical attractive for Dutch firms.

   There exist several forms of investment. Most known and used terms of foreign investment are foreign direct investment and foreign portfolio investment. Not every form of investment can be applied as such. For investments in Vietnam it is therefore important to determine the investment form. Chapter four will discuss these investment forms.

For this study both theoretical as well as empirical data has been used. For chapter one, data is primarily collected through a literature study and through information provided by the CG. In chapter two, data is gained through a literature study and through meetings at the office of the CG. Chapter three discusses the theory of the method that is used to analyze the cold chain sector. The data used in chapter four is through literature study and based on facts from independent and reliable sources. Chapter five is the result of a literature study on business systems combined with empirical data collected through interviews with companies active in Vietnam. The analysis in chapter six is mostly based on empirical research through interviews with Vietnamese and foreign companies who are active in the cold chain industry in Vietnam. A list of the interviewed companies can be found in appendix C.

The empirical data that has been used in this study has been gained through meetings and interviews with companies who are involved in the cold chain industry in Vietnam. Most interviews were held at the office of the interviewed company. One interview is held at the office of the Consulate General. One interview has been held by telephone and two interviews has been held by telephone and through e-mail.

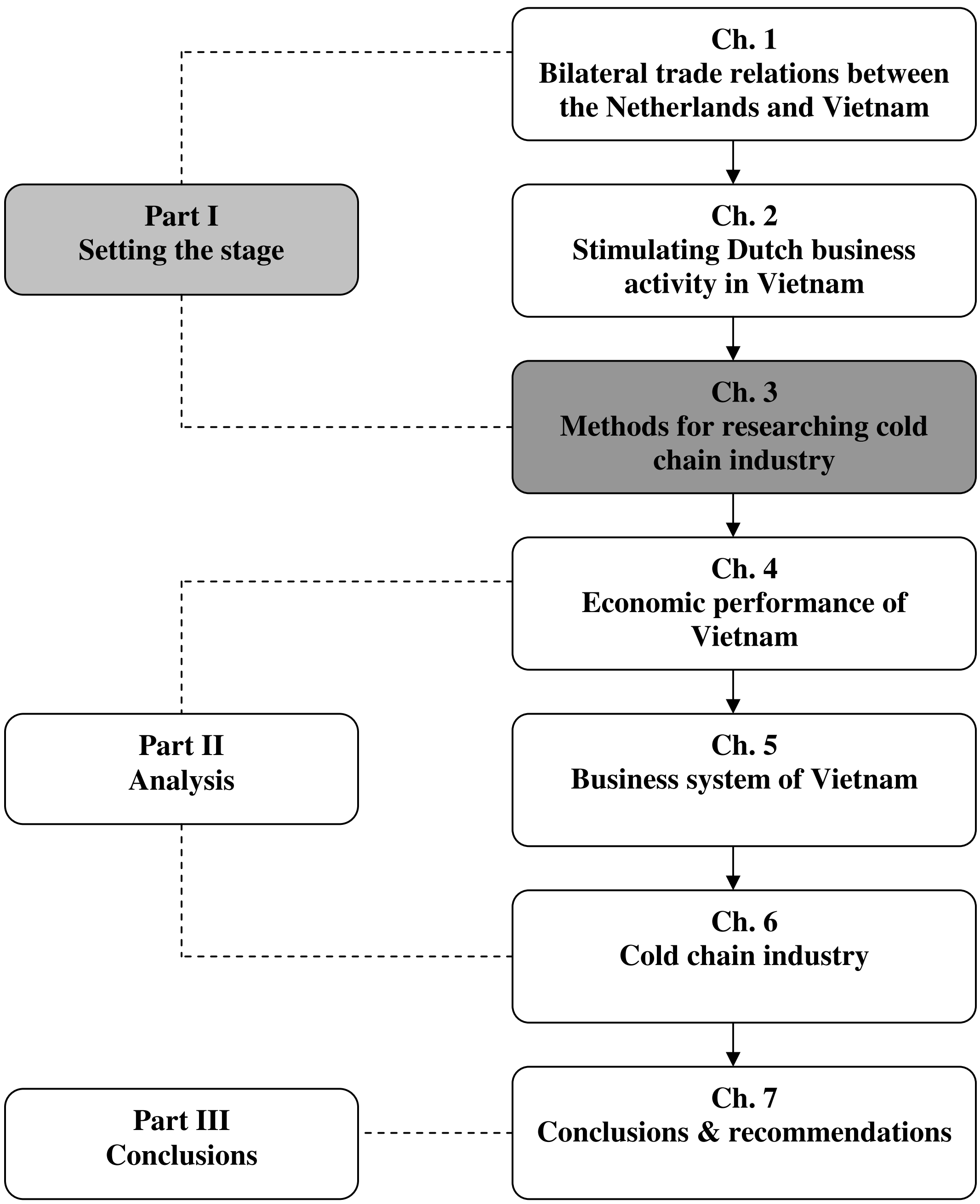
2.5 Synthesis

The Netherlands Consulate General plays an important role in stimulating Dutch business activity in Vietnam. Besides identifying promising sectors and providing information, a more in-depth analysis of a promising sector is very helpful.

Now the cold chain is identified as a promising industry (within the transport and logistics sector) and the research question has been formulated, the necessary conditions have been met. In chapter three, the research method and the theory that will be used for the cold chain analysis will be discussed.

Chapter 3

3 Methods for researching cold chain industry



Chapter 3

Methods for researching cold chain industry

3.1 Introduction

In this chapter the used method for analyzing the cold chain sector in Vietnam will be discussed. To conduct an analysis on a sector or industry a structured approach is necessary in order to study and analyze the relevant aspects in that sector. The method used in this research to analyze the cold chain sector in Vietnam will be according to the theory of M.E. Porter on national competitive advantage.

3.2 Conceptual model of the cold chain research

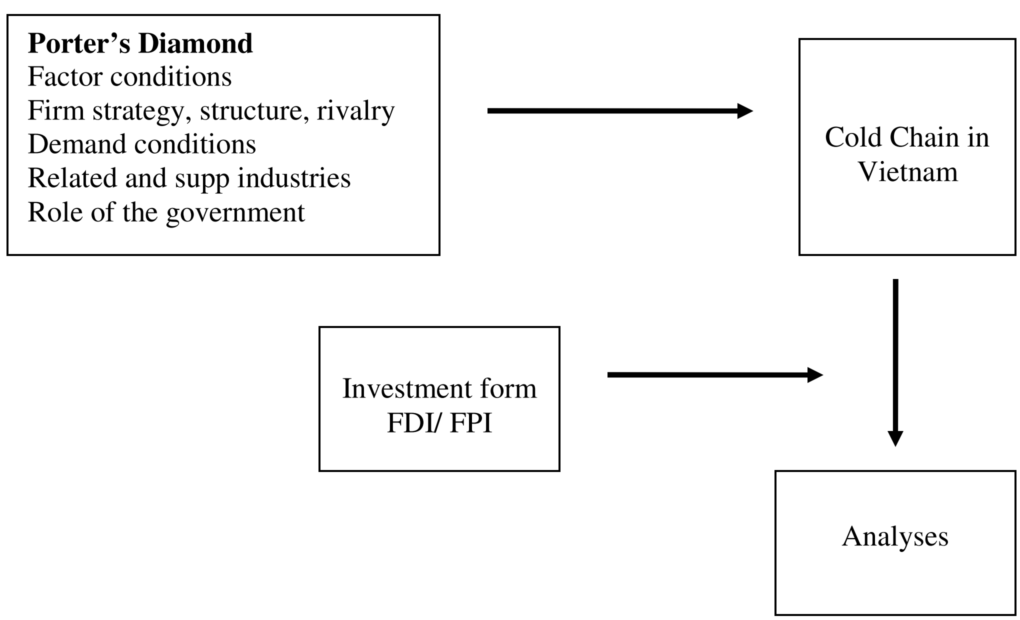


Figure 3.1 Conceptual model of the research

3.3 Explanation of Porters' diamond

In his study "The competitive advantage of nations" Porter (1990) describes a theory of national competitive advantage. Porter states that a country's or nation's competitiveness depends on the capacity of its industry to innovate and upgrade. Companies gain advantage against the best competitors in the world because of pressure and challenge. Those companies benefit from having strong domestic competitors and suppliers as well as a high demand from the local market. No single nation can or will be competitive in every industry. Nations succeed in certain industries because their home environment is the most forward looking, dynamic and challenging.

In order to identify successful industries within a nation, insight has to be created in sectors and industries. Porter identifies four broad attributes of a nation. Four attributes that every country or nation uses to identify and operate its industries. Individually and as a system together the attributes constitutes the diamond of competitive advantage. The attributes of the diamond are (1) Factor conditions, (2) Demand conditions, (3) Related and supporting industries and (4) Firm strategy, structure and rivalry. The role of government is added to the diamond as the fifth element.

(1) Factor conditions

Factor conditions encompass the factors of production like labor, knowledge, capital, land, infrastructure, which are relevant for competition in certain industries.

In contradiction to the classical theories of Adam Smith and David Ricardo, Porter (1990) states that the most important factors of production (like skilled labor or a scientific base) are not inherited by a nation, but that they are created by the nation. According to Porter the most important factors of production are those that involve sustained and heavy investment and are specialized. Basis factors like a pool of labor or local raw materials do not generate an advantage in knowledge intensive industries. This, because these factors can relatively easy being accessed by others through a global strategy or technology. This does not generate competitive advantage. Porter continues that in order to gain competitive advantage, a factor must be highly specialized to an industry's particular needs. Specialized factors are skilled labor, capital and infrastructure. However, specialized factors involve heavy, sustained investment. They are more difficult to imitate by others. Eventually this should lead to a competitive advantage, because if others (nations/ firms) cannot easily imitate the specialized factors, they are valuable. Porter argues that factors are not necessarily nature made or inherited. They may develop and change. A lack of recourses for instance, can help nations to become competitive. Abundance generates waste and scarcity generates innovation. In the latter case nations or firms are pushed to innovate to overcome the problem of scarcity (Ruckman, 1998).

(2) Demand conditions

The demand conditions stand for the state of the domestic demand for products and services that are produced or delivered in a country. Home demand conditions influence the form of certain factor conditions. It has an effect on the speed and direction of innovation and product development. Countries can gain competitive advantage in industries where the domestic market gives a clearer or earlier signal of emerging needs from buyers in relation to foreign competitors. Also, companies are pressed by a demanding market to innovate faster and to achieve more sophisticated competitive advantage than their foreign rivals (Porter, 1990). The character of the domestic market seems to be of greater importance than the size of the domestic market. A strong sophisticated and demand-full domestic buy-market will press companies to meet high standards of producing. Companies are pressed to improve, to innovate and to upgrade into more advanced segments. Demand conditions create advantages for a country or industry by forcing companies to react on challenges they are facing arising from local values and circumstances.

(3) Related and supporting industries

This attribute is about the presence or absence of internationally competitive supplying and supporting industries. An international successful industry can lead to advantages in other related or supporting industries. When a sector is a world leader in its industry, suppliers and related companies to that sector can make an advantage of it. The presence of related and supporting industries close to each other, downstream and upstream in the supply chain, can lead to an easy exchange of information, innovation and upgrading of products and services. A company benefits at most when the supplying companies are global competitors. For a company or country it is self-defeating to create 'captive' suppliers who totally depend on the domestic market and are prevented to serve international competitors (Porter, 1990).

(4) Firm strategy, structure and rivalry

This attribute focuses on the conditions in a country that determine how companies are established, organized and managed and that determine the characteristics of domestic competition. National circumstances and culture play an important role in this. Different countries have different managerial systems. Other factors like management structures, working morale or interactions between companies are shaped different in countries. This can lead to advantages and disadvantages for certain industries. According to Porter (1990) some countries may be oriented towards a particular management style. Those countries will tend to be more competitive in industries where particular management styles are applicable. Ownership and control are other structures that can influence the structure within companies.

Domestic competition (rivalry) together with competitive advantage within a country can help provide organizations with bases for achieving advantages on a global scale. Intense domestic rivalry can be an incentive for innovation (Porter, 1990).

The Role of Government

The role of the government is a pushing or pulling factor. Porter (1990) states that the role of government can be seen as a catalyst and challenger. This means that a government needs to support, encourage or even force companies to raise their ambitions and aspirations and to become more competitive towards other companies. Unlike government, companies can create competitive industries. It is the government that influences the environment for companies, both positively as well as negatively.

Within the context of the diamond, the role of government can only succeed when working together with one or more determinants in the diamond. From this perspective the role of government can be seen as a fifth determinant in the diamond.

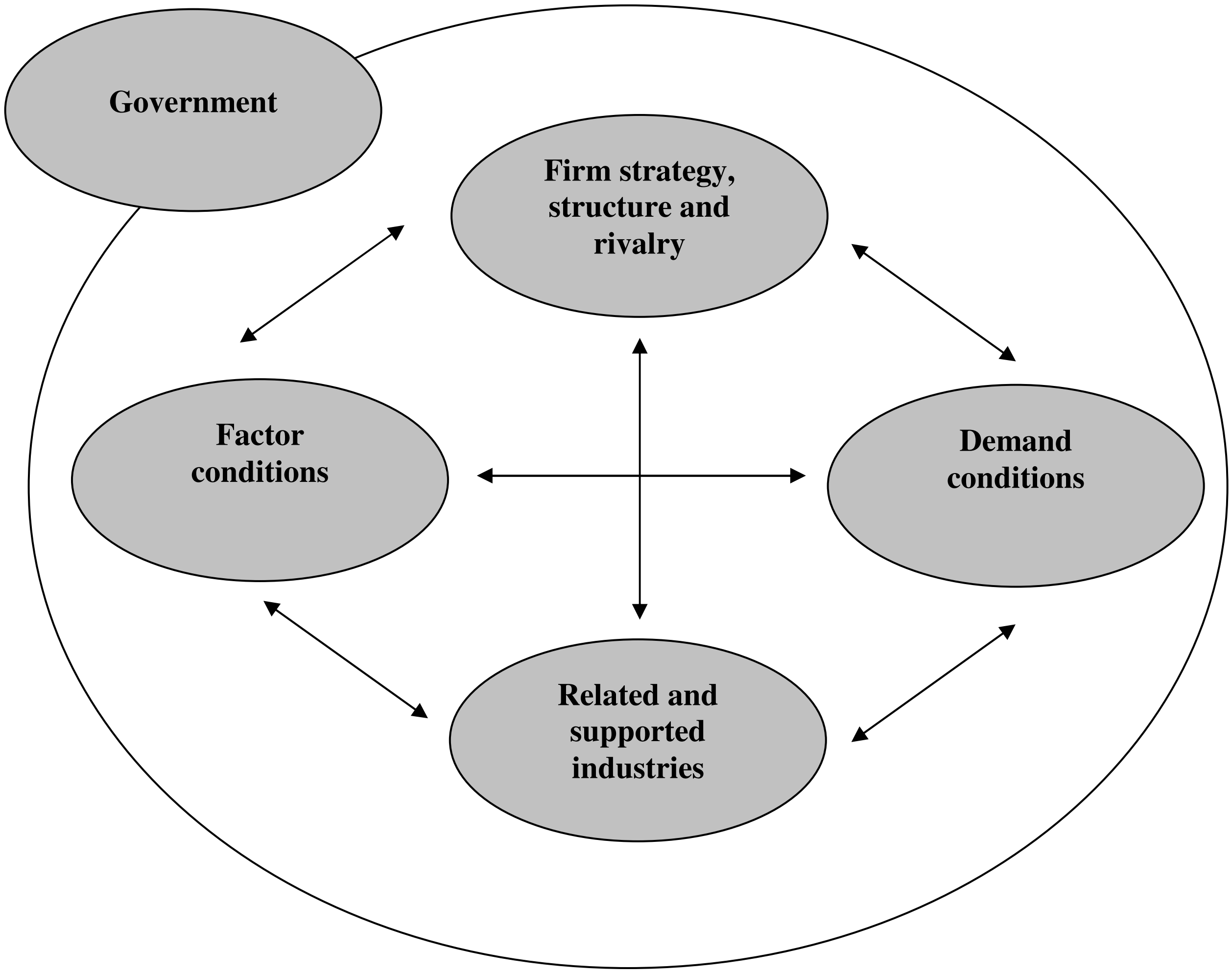


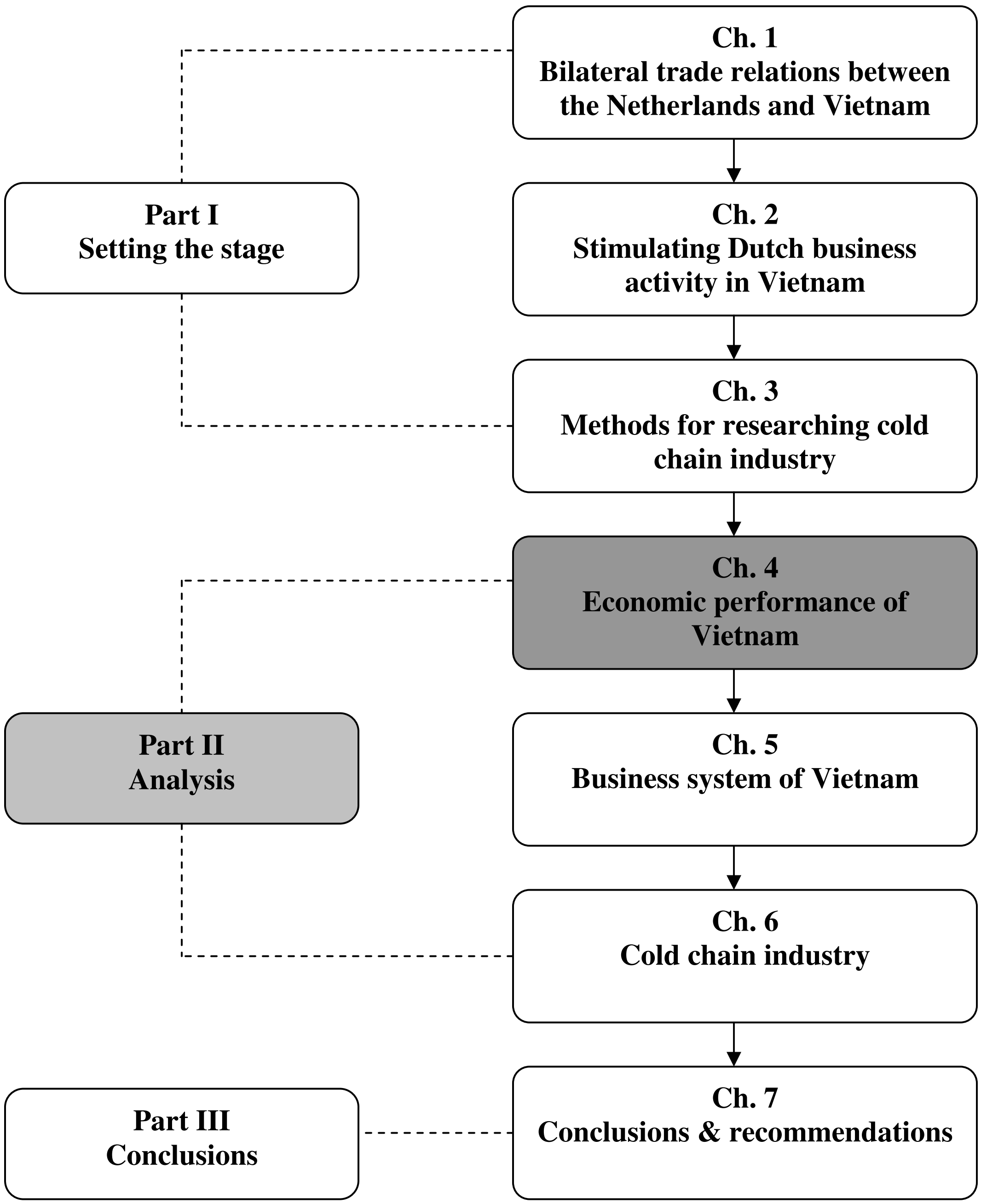
Figure 3.2 The diamond of Porter

3.4 Synthesis

The diamond of Porter (1990) will be the main method for analyzing the cold chain industry. From five different perspectives will the cold chain industry be analyzed. Factor conditions say something about the factors of production that are available in Vietnam. Demand conditions will refer to the demand of cold chain products and equipment, related and supporting industries will provide information on related industries to the cold chain and firm strategy, structure and rivalry will give insights in the strategy and structure of firms involved in the cold chain, and will provide insights in the competition within the cold chain or related field.

Chapter 4

4 Economic performance of Vietnam



Chapter 4

Economic performance of Vietnam

4.1 Introduction

This chapter is about the economy of Vietnam. In order to understand the context of Asian business environment and the implications for doing business in the region, it is necessary to have some understanding of the background of the Asian countries, here in particular Vietnam.

A brief overview will be provided of the most relevant economic aspects. Goal is to provide insights in the current (2006) situation of the economy of Vietnam and its development throughout the (recent) years. In particularly attention will be given to the development of, the for the cold chain, important sectors agriculture, fishery and infrastructure. Further, the investment forms for foreign investment will be discussed. This will result in a decision tree for foreign investment.

4.2 Economic development of Vietnam

Vietnam's identity has been shaped by long-running conflicts, both domestically as well as with foreign forces. After the reunification of southern and northern Vietnam at the end of the Vietnam War in 1975 , the government confiscated privately owned land and forced citizens into collectivized agricultural practices (Background Note: Vietnam, 2006).

Vietnam’s economy is becoming more open. Vietnam’s first movements away from a centrally planned economy came in 1979 in agriculture and 1981 in industry. With the first reforms in agriculture, Vietnam slowed and even reversed the process of collectivization in the south, and allowed some room for experimentation at the margin among collectives throughout the country. The result was an increase in agricultural production during the first years of the 1980s. But rather than responding to improved production by further exploring the reforms, as China did, Vietnam pulled back from the reform process in agriculture for most of the rest of the decade (Woodruff, 2004).

Economic growth

The real deed of renovation of the economy occurred in 1986. With the enactment of the "doi moi" (renovation) policy in Vietnam in 1986, the Vietnamese authorities launched a definitive program of reforms. It consisted of increasing economic liberalization, modernizing the economy and to produce more competitive export-driven industries (CIA World Factbook, 2006). It was implemented with increasing speed starting in 1989. From that time Vietnam's business climate improved with great speed. The country became one of the fastest-growing economies in the world, with an average annual gross domestic product (GDP) growth between the 6.5% and 8% in the period 1990-2004. In the year 2005 the GDP grew with 8.4% and in 2006 the GDP growth rate was 8.17%. Compared to the rest of the world is Vietnam the country with the 2nd highest year on year growth rate. In 2006 only China had a higher GDP growth rate of 9.9% (IMF, GSO Vietnam).

Despite the increasing GDP growth rate, inflation or consumer price inflation (CPI) however, has risen the past few years to around 8.2 % in 2006. The International Monetary Fund (IMF) estimates inflation to decline in the coming years to 6.3 in 2008. The figure below shows the development, and forecast for 2007, of GDP and inflation in the period 2000-2007.

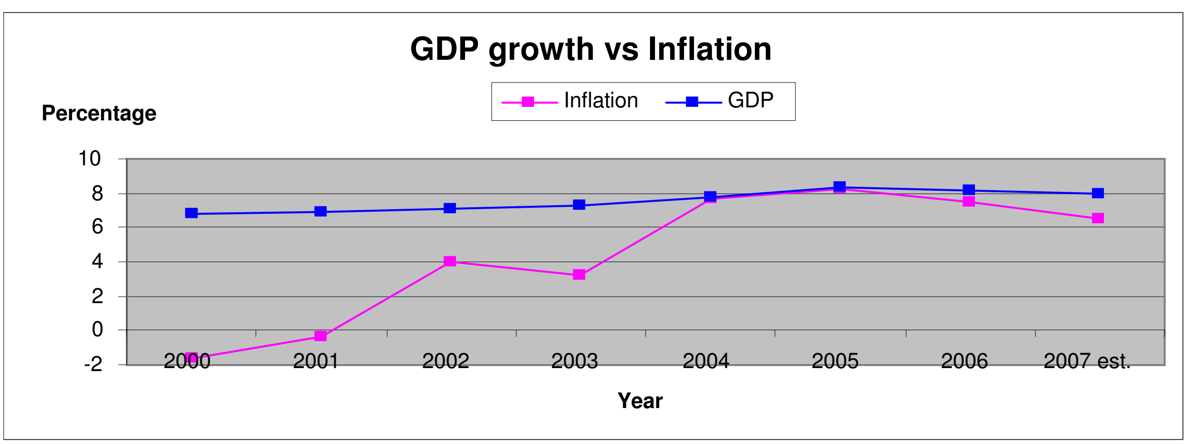


Figure 4.1 GDP growth versus inflation in Vietnam 2000-2007 est. *Source: IMF World Economic outlook Database 2007*

The economic structure continues transforming towards increases in the industry and construction and the service sector, and decrease in agriculture, forestry and fishery. Figures from the National statistics office Vietnam (GSO) show that the for the cold chain important sectors, agriculture, fishery and infrastructure accounted for a total of 25.92 % to its share of the gross domestic product. However, the share of agriculture to GDP decreased with 3.8 % in 2006 compared to the previous year. Infrastructure and constructing increased from 6.35 % in 2005 to 6.62 % in 2006. The service sector remained the same with a total share of 38.08 % to GDP in 2006. The decrease of the agriculture sector is in line with the development targets of the Vietnamese government. In their 2006-2010 socio-economic development plan the Vietnamese government aims at a 15-16 % share of GDP in agriculture, fishery and forestry, which is 20.4 % in 2006. Other key targets are:

1 Economic structure by 2010: agriculture, forestry and fisheries 15-16% of GDP (from 21.8% in 2005); industry 43-44% (40.2%), services 40-41% (38%);
2 GDP: 2.1 times higher than 2000. Annual average growth rate 7.5-8%. GDP/capita to reach USD 1,050-1,100 by 2010;
3 Universal junior secondary education by 2010; 2% rate of tertiary education;
4 Skilled labor to reach 40% of labor pool by 2010;
5 Population growth 1.14% by 2010 (1.3% in 2004);
6 Poor households reduced to 10-11% (2005: 22%).

(Source: EU Counsellors, 2006)

Inflation in Vietnam is relatively high the past few years (around 7-8 %). Despite the high inflation, coupled with a stable VN Dong – US Dollar exchange rate, exports from Vietnam grew strongly and is still growing. In 2006 the total amount worth of exports exceeded USD 39.6 billion (+ 22.8 %, compared to 2005). Imports increased with 20.4 % and reached a total of USD 44.41 billion (Deutsche Bank, 2006). The trade deficit, which reflects the needs of an expanding economy (EU Counsellors, 2006) fell to USD 4.805 billion.

In 2006, total government revenues were estimated equaling 110.2% of the yearly estimate. Of the total; domestic revenues accounted for 103%, of which crude oil: 126%; trade balance revenues: 106.3% and aids: 148%. Total government expenditures were equivalent to 108.4% of the yearly estimate, meeting plans of development investment and current expenditures, of which 72% were made up with domestic loans and 25.8% with foreign loans.

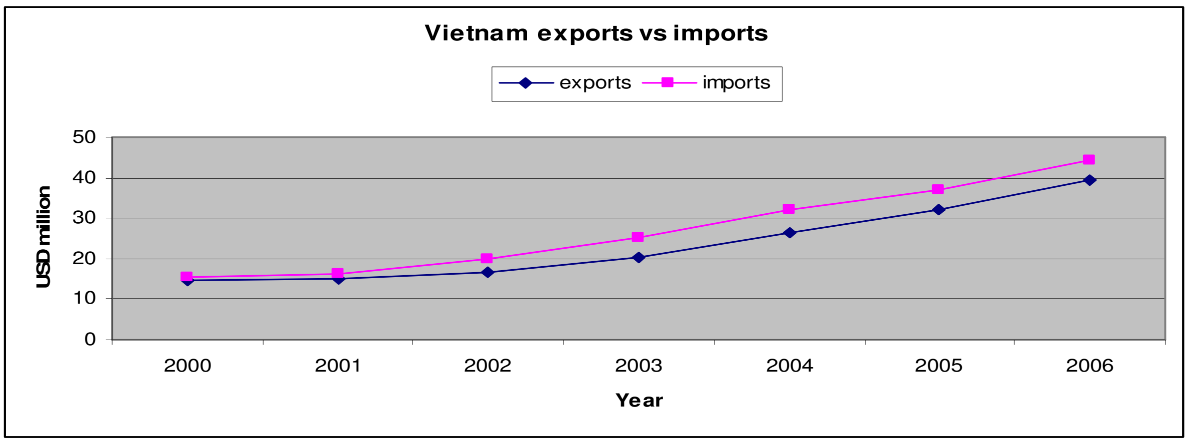


Figure 4.2 Import and export of Vietnam 2000-2006. *Source: EU Counselors, 2006; Deutsche Bank, 2006*

Ownership

After the independence from colonizer France in 1954, it was believed by the Vietnamese leaders that the Soviet Union economic model was the quickest way to develop the economy. Privately owned companies were nationalized and new State Owned Enterprises (SOE) were build. This was the beginning of the establishment of the state-owned sector. After the reunification, most of the available investments were implemented in the industrial SOE's. At the end of the 70s over 1,500 private enterprises from South-Vietnam, employing 130,000 workers, had been nationalized and converted into 650 SOE's. With the enactment of the Doi Moi, changes occurred resulting in a 50 % cut in the amount of SOE's and in the enactment of the Law on SOE's in 1995.

The next process in the transformation of SOE's was organized around the so-called ownership transformation process, the most important part of which is known as equitization. This process was meant to guide state capital into the private sector. Until quite recently, those actors acquiring the appointed (state) capital were mainly workers and directors of the SOE's, making equitization look like an "insider privatization" (World Bank, 2006).

When looking at ownership, there is a strong concentration of ownership held by the state and households. In 2005, nearly 70% of the GDP can be accounted to these two owner-groups. However, the total share to GDP of these owner groups is declining. Compared to 1995 the share to GDP by the state and household has in 10 years declined with 11% to 68.4%. On the other hand the share of GDP held by foreign firms increased in the same period with 152% to a total of 15.9% in 2005. It can be concluded that the concentration of ownership (by the state) is still high, even though the foreign sector's contribution to GDP is growing and GDP share of the state (and household) sector is declining.

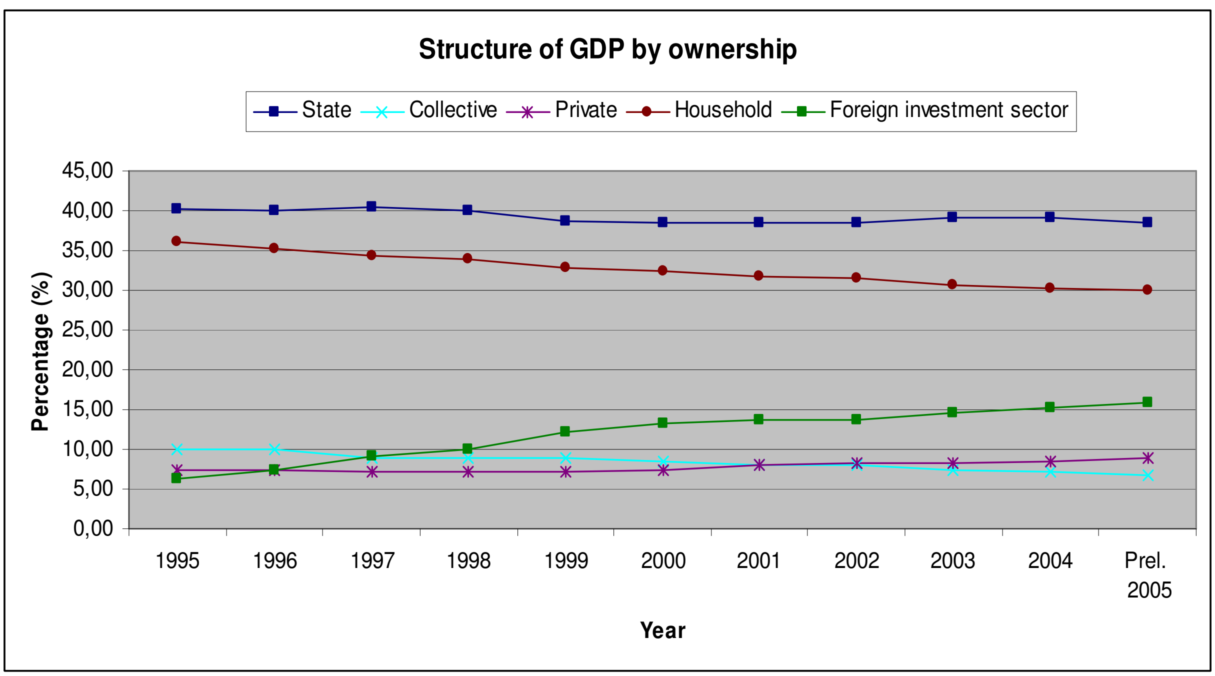


Figure 4.3 Structure of GDP ownership in Vietnam 1995-2005F. *Source: GSO Vietnam, 2005*

The World Bank country report Vietnam (2006) discusses the existence of the amount of non-farm enterprises ran by households. Different sources calculate different numbers of enterprises ran by households. Officially, business with 10 employees or more should register under the Enterprise Law. Often, the smaller businesses are not registered under this law but they are most often "listed" by local authorities.
The discussion resulted in the conclusion that the majority of the Vietnamese workers work for either very small enterprises, up to five employees or for very large companies, with over 1000 employees. Still, figures in that report show that in 2004, around 64% of the Vietnamese labor force are active in very small businesses with a maximum of five employees. For the very large companies (> 1000 employees) is this number around 11% in 2003. The outcomes of the study are listed appendix B.

Although foreign investors are more limited in the range of sectors in which they can operate than domestic firms, the gap is narrowing quickly. In 2002, foreign ownership in non-state enterprises was allowed in 35 designated industries, including agriculture, forestry and fisheries, science and technology, education and medicine. In 2003, both domestic and foreign investors were allowed to build power plants of up to 100 megawatts. These policies resulted in a rapid increase of FDI commitments, although from a low level (World Bank, 2006).

Based on data from GSO, cumulative foreign direct investment (FDI) rose from 28 projects for a total of USD 140 million in 1988, to over 700 projects and USD 5.5 billion in 1993, to 6,164 projects for roughly USD 60 billion by 2004. In 2006 the total investment capital in the economy reached a record of USD 25 billion, which is 41 % of GDP. The amount of FDI was worth between USD 9.9 billion (Deutsche Bank, 2006) and USD 10.2 billion (Vietnam News, 2007), which is around 16% of GDP.

Two phases can be distinguished in this process. FDI inflows were unusually large in the mid-1990s. With commitments amounting to almost 10 percent of GDP between 1994 and 1997, Vietnam became then the top recipient of FDI among all developing countries and transition economies. But the Asia crisis broke this trend, and it is only since the beginning of the decade that FDI to Vietnam started growing again, after experiencing a sharp decline in 2001. Only now, almost a decade after the Asian crisis, is the volume of FDI commitments rising with considerable amounts year on year.

Measuring FDI inflows is difficult. Vietnam's national statistics office (GSO) provides data on commitments as well as on implemented investments. However, these implemented investments include domestic borrowing, so these numbers are higher than inflow data. The data from IMF focuses on actual inflows, because of their relevance from a balance-of-payments perspective. This includes not only the equity inflows, but also the foreign borrowing of FDI enterprises, and it could be argued that such borrowing is not really FDI, because it is debt creating. But the distinction is not as clear when borrowing is from the parent company. Data from the United Nations Conference for Trade and Development (UNCTAD) are the closest to equity inflows, as they do not include borrowing (World Bank country report Vietnam, 2006).

The Netherlands is for years one of the top ten investors in Vietnam. In 2005 the Netherlands invested USD 1.8 billion (www.evd.nl). At the end of 2006 FDI from the Netherlands was worth USD 2.365 billion, with USD 2.029 billion implemented spread out over 74 projects (www.vvg-vietnam.com). With this amount of FDI the Netherlands was the 8th top-investor in Vietnam world wide and the 2nd top-investor from the European Union, after France. However, here it must be noted that these statistics include investments made from companies with subsidiaries in the Netherlands, but who are not original Dutch companies. On the other hand, investments made by Dutch companies through off-shore subsidiaries (outside the Netherlands) are not included in the investment rankings. Therefore, due to these side notes, the statistics on investments per country are not very transparent. Nevertheless a relative large amount of original Dutch-based companies play an important role in Vietnam (Wijnberg, 2006).

FDI inflow in the sectors agriculture and fishery counted for 7 % and construction received 5% of the total FDI. For a complete picture see appendix A.

4.3 Foreign investment

In the academic literature, the terms used to describe and distinct foreign investment are foreign direct investment (FDI) and foreign portfolio investment (FPI). These terms are generally also used by researchers and analysts (Holsapple, Ozawa and Olienyk, 2006).

A definition from the World Trade Organization in the article of Holsapple et all (2006) on what the distinction is between FDI and FPI is as follows; *"Foreign direct investment occurs when an investor based in one country (the home country) acquires an asset in another country (the host country) with the intent to manage that asset"*.

The key dimension is what distinguishes direct investment from portfolio investment in foreign stocks, bonds and other financial instruments. Further, FDI involves the transfer of much more than only capital. Technological know-how, marketing and management skills, and other firm-specific resources are transferred to the host country as well.

Holsapple et all (2006) continue to explain that each country has its own way of defining whether an investment should be classified as FDI or FPI. This can be clearly explained with an example when measuring foreign investment flows for the United States; the USA categorizes investments on the basis of degree of ownership. Foreign investments involving ownership of 10% or less of an asset (such as a foreign corporation) are classified as portfolio investments (FPI), while those investments involving more than 10% ownership are classified as direct investments (FDI).

Portfolio investors are typically passive investors. Their ownership is relatively small, and with this they exercise little control in the investment. In general, FPI is associated with the passive ownership of financial securities, such as shares of a corporation or a limited partnership.

Direct investors can be defined as active investors. These type of investors hold a relative large share of the assets and are typically quite active in terms of management decisions.

Baek (2006) shows that several studies on international capital flows have identified two general sets of factors that determine capital flows. Generally, they can be categorized as domestic or *pull* factors and external or *push* factors.
Baek (2006) further analyzes related studies on capital inflows in emerging markets. These inflows are largely pushed by low international interest rates. The US interest rates are the single most important determinant of short-run bond flows, while both global and country specific factors are equally significant in short-run equity flows and long-run equity and bond flows.
This is close to the findings of Griffen, Nardari and Stulz (2002). They find that equity flows to Asia are not only pulled towards a country's positive local market performance, but also strongly pushed abroad by US stock market performance. According to Baek (2006) Griffen et all (2002) suggest that capital flows cannot only be explained by the fundamentals of the host country.
According to Baek (2006), this is in line with a study from Kim (2000). In this study the author argues that the recent recovery of capital flows are mainly because of external factors like the world interest rate and economic conditions in industrial countries and that domestic factors of host countries are relatively less important.

Furthermore, Baek (2006) states that country-specific policies such as sterilization of capital inflow and capital controls can be used when explaining the volume and the composition of capital inflows. An increase in foreign interest rates encourages overall capital flows and changes the composition of inflows away from portfolio short-term flows to foreign direct investment.

From the study of Baek (2006), on the importance of pull and push factors in determining portfolio investment flows to Asian economies, the conclusion can be drawn that portfolio investment in Asian countries was dominantly pushed by investors' appetite for risk and other external factors while favorable domestic economic conditions had a negligible role in attracting portfolio investors. Portfolio investment to Asia is vulnerable to the business cycle of the global market mood and external factors, and because of this FPI to Asia can be considered as unstable, volatile and speculative.

Determine foreign investment in emerging industries in Vietnam

As shown earlier in paragraph 4.1, in the year 2006 the amount of FDI inflow in Vietnam estimated anywhere between USD 9.9 billion (Deutsche Bank, 2006) and USD 10.2 billion (Vietnam News, 2007).

For now, it seems very clear that FDI is the most popular form of investment in Vietnam. This tendency could be explained with the theory of John Dunning (1995). Dunning has developed an analytical framework for evaluating FDI. This framework is called the *Eclectic Paradigm*. The primarily purpose of this paradigm is to explain why firms choose to exercise FDI when penetrating foreign markets. Interesting is to see why FDI is chosen above other forms of market entry, like joint ventures, strategic alliances or management contracts.

A key characteristic of the Eclectic Paradigm is the given fact that FDI is the most effective way for serving foreign markets, when a company owns advantages that arises under conditions of imperfect competition (Holsapple et all, 2006).

In order to successfully implement direct investment in a foreign country, a company must first have some competitive advantages in its home market that are specific to that company or to its product (or service). This is in the paradigm noted as an "O". These ownership or O advantages must also be transferable to foreign markets.

Secondly, there must also be certain characteristics of the foreign market that will allow the company to take full advantage of its O advantages in the host country. There must be certain location specific advantages, where the company gains advantages of benefits through a foreign establishment. In the paradigm this is referred to as location or "L" advantages.

The third element of the eclectic paradigm is internationalization, or "I" advantages. This means that it is better for a company to exploit the foreign opportunities itself, rather than through agreements with other companies. The company that wants to exercise direct investment uses I advantages to maintain its competitive position by reducing transaction costs.

The “OLI” advantages will now be described in more detail.

Ownership. The O advantages of a company must be unique to that company, and it has to be possible to transfer the advantages to the host country. Examples of O advantages can be found in common governance or in specific assets like specific knowledge, proprietary technology, patents or brand loyalty, which are exclusive or specific to the company who owns them. A company can have the ability of financial strength or large economies of scale. However, these advantages doesn’t have to be unique to an individual company, sine many companies can develop such advantages. It must be taken into consideration that competitive advantages like strong finances and large amounts of scale economies cannot be O advantages. The greater or more the O advantages a company has, the more incentives that company has to exercise those advantages in the host country.

Location. Location advantages can be of many different forms. This because of the economic differences among countries. A host country may offer location advantages like low-cost labor, labor with unique skills, better access to important raw materials or a large relatively unexploited market. Holsapple et all (2006) add here that location advantages may simply offer the opportunity for a company to make a defensive investment to prevent its competitors getting a foot on the ground in the same market. When there are no L advantages like described here, there would be no motivation for companies to invest through direct investment.

Internalization. Internalization advantages allow the company to minimize transactions costs and other costs of agents or consultants, which would occur if the company engaged in some other forms of market penetration like, for instance, a joint venture. This would result in that the cost of the company managing all its activities in the host country directly, would be less than the cost of operating in any other way. In other words, using an example of Holsapple et all (2006). The costs of monitoring foreign partners, having information filtered through third parties, dealing with foreign financial institutions etc., would diminish. If the company has the ability to effectively exercise control over its value chain, it would be more beneficial to the firm to operate its I advantages than to enter into leasing, franchising or other types of agreements with foreign firms in advantageous locations.

Holsapple et all (2006) extended the Eclectic Paradigm to specifically identify and evaluate FDI ownership advantages and FPI portfolio advantages both independently and in the aggregate by adding a new sub-paradigm to account for the portfolio advantages separately. They do this for foreign investments in real estate.
In order to decide which form of foreign investment is preferred, the authors developed a decision tree. This tree however, is used for foreign investments in the real estate sector. When leaving out the aspects related to foreign investments in real estate, a new tree will be formed which can be useful for the FDI-FPI situation. See figure 4.4. below.

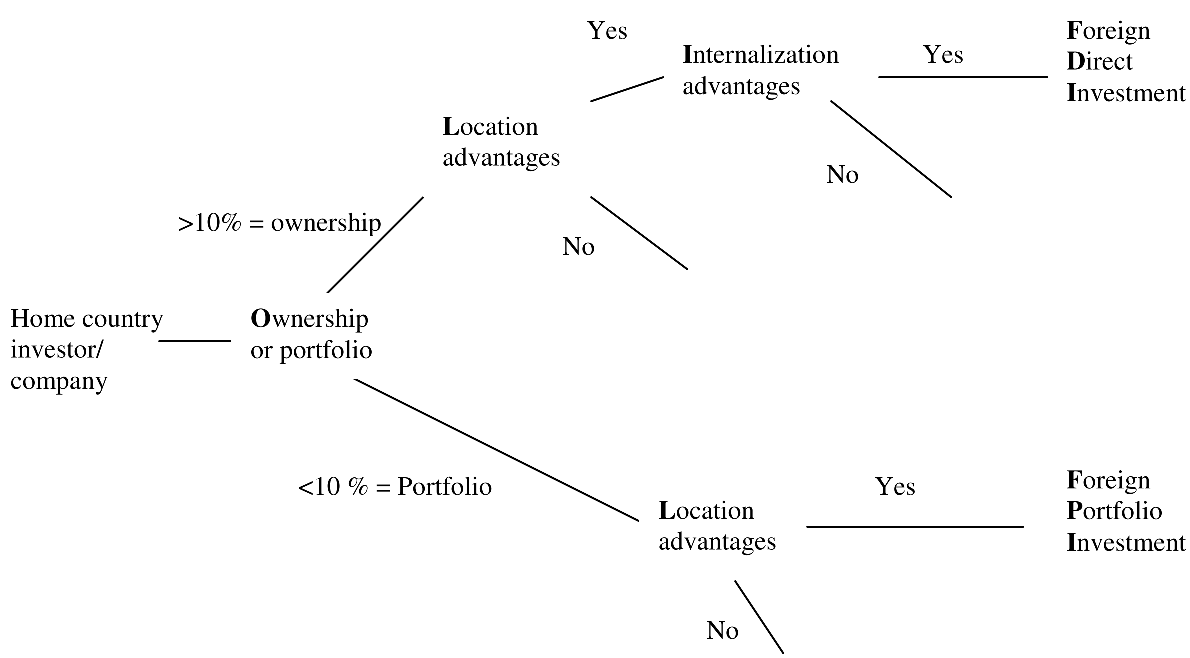


Figure 4.4 Decision tree for foreign direct investment and foreign portfolio investment

4.4 WTO membership for Vietnam

Accession to the World Trade Organization (WTO) is guided by rules that make it different from joining other multilateral organizations, like the ASEAN. In addition to a general set of commitments, the aspiring country needs to satisfy all the WTO member countries in return for their support for the application. All members can ask the applicant for further concessions. In practice, without the approval of key WTO members, a country cannot join. Over time, this approach has led to increasingly higher standards for the accession of new entrants. Vietnam may need to make more radical changes than China.

The primary motive for developing countries in seeking to join the WTO is the boost that they hope membership will give to their exports, thanks to their improved access to international markets. Vietnam expects expanding sales of agricultural and fishery products, and textiles and garments. But WTO membership also makes a country more attractive for foreign investors. And it gives access to the WTO dispute-settlement mechanism, which enforces international trading rules. As a WTO member, Vietnam would also have a say in shaping those rules. One controversial access criteria of the WTO accession process, in Vietnam's case, concerns agricultural protection. Despite the fact that the majority of population (and a vast majority of the poor) lives in rural areas, WTO members are asking Vietnam to further liberalize its agricultural sector.
Vietnam's market access offer to the eighth Working Party meeting, set the average agricultural bound tariff at 25 per cent. This is substantially lower than the levels of neighboring countries such as Thailand and the Philippines (World Bank, 2006).

Another concern is the "non-market-economy" status that Vietnam may get when it enters the WTO. This status was one of the so-called "WTO plus" commitments China had to agree to during its accession negotiations. It implies a special methodology for assessing potential subsidies in antidumping cases brought against Chinese companies, which considerably reduces the burden of proof. China is already the target for one fifth of the anti-dumping measures worldwide. Vietnam may have to accept similar terms. But the non-market-economy status dilutes one of the main attractions of WTO accession, namely the access to its dispute resolution mechanism (World Bank, 2006).

Vietnam’s road to membership of in the World Trade Organization began in 1995, when a formal request for accession was submitted. In January 2007 Vietnam became officially member of the WTO.

WTO accession remains the key uncertainty for the economy of Vietnam. Accession will present opportunities for Vietnamese businesses to reach new export markets, build joint ventures with foreign partners, explore new technologies and attract new investors. However, it will also require Vietnam to stand on its own feet, competing with the foreign firms that will enter their markets, without the help of government subsidies (South East Asia Monitor, 2006).

For the cold chain, accession to WTO will gradually force in quality control procedures (SGS) which are not practiced to the full today (Interview: Maersk).

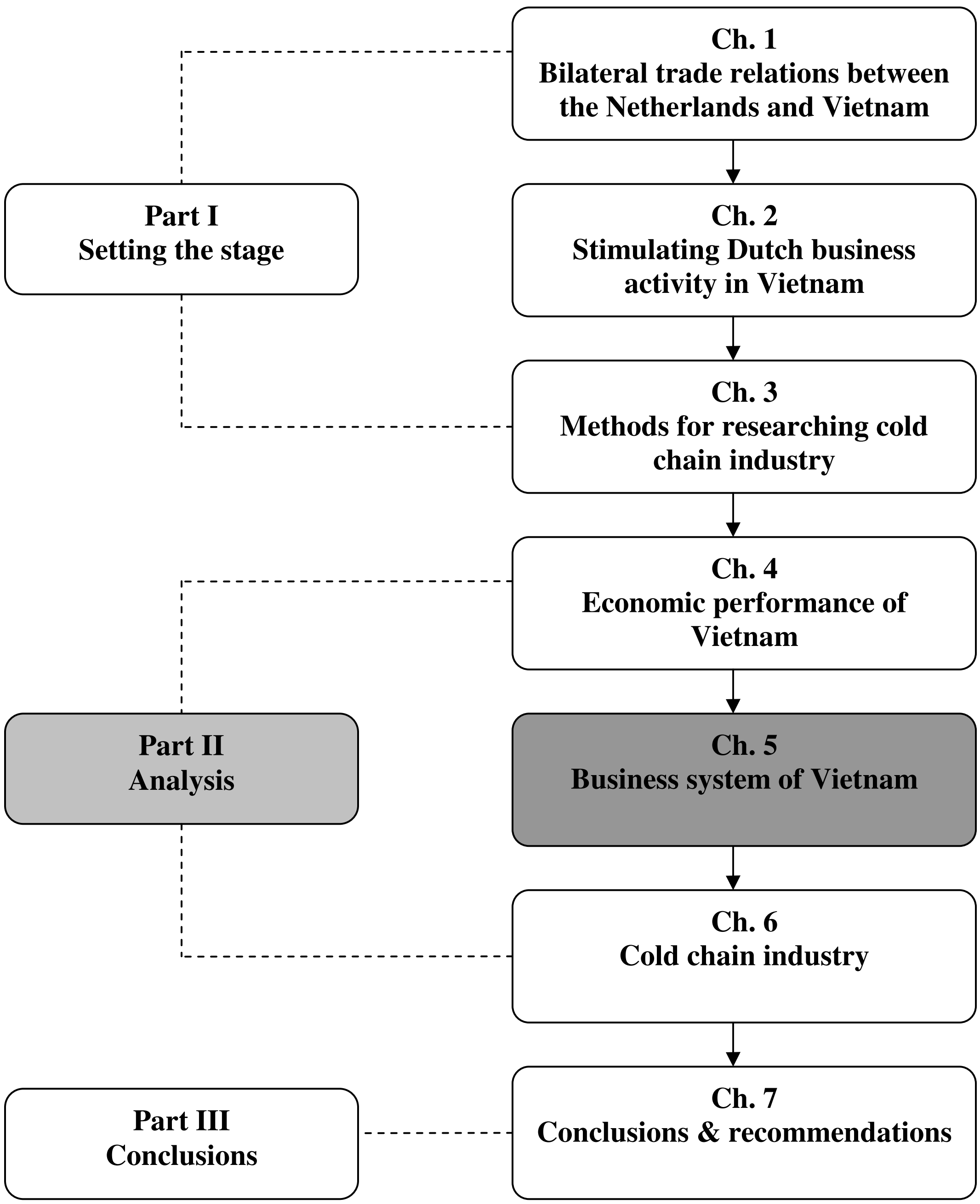
4.5 Synthesis

Foreign investment inflows are increasing year on year. Estimates show that this behavior will continue in the coming years. Direct investment takes a serious part in the economic growth (GDP) of Vietnam. The increasing capital inflows, stable inflation rates and the further privatizing of SOE’s together with the WTO membership, will allow foreign firms to seek for new business partners and new markets in the country. For the cold chain, accession will probably stimulate the quality of the cold chain products. The growth of the economy has its effect on the people well. The consumers’ purchasing power is increasing. Further reduction of poverty and increase of skilled labor will have a positive effect on the development of Vietnam.

Foreign direct investment seems to outnumber portfolio investment as favorite investment form. This development will continue with the growing interest from foreign companies who are seeking for new markets. This can apply if they continue to invest and own a considerable amount of assets of Vietnam-based firms and use their location - and internalization advantages.

Chapter 5

5 Business system of Vietnam



Chapter 5

Business System of Vietnam

5.1 Introduction

This chapter is about the business system of Vietnam. The economic development can have its influence on the business system of Vietnam. With the method of Whitley (1998, 1999) for defining characteristics of business systems, the case for Vietnam will be analyzed. The analysis of the business system of Vietnam will be based on literature study and on the outcomes of empirical research in Vietnam, conducted by the author.

5.2 Theoretical background on business systems

A business system can at best be described as "*distinctive ways of structuring economic activities with different kinds of actors following contrasting priorities and logics*" (Whitley, 1998).

Redding (2001) elaborates on this and comes with his description of business systems; "*An evolving and constantly changing pattern of features and it owes its shape to its heritage in the way a society chooses to deal with modernization. Features of the business system are aspects of the way economic behavior is held together in stable patterns. Good examples are gaining capital through the stock market, having trade unions or operating primary with family business*".

In his research on the *Internationalization and varieties of capitalism* (1998) and his study on *The nature of business systems and their institutional structuring* (1999) Whitley sets up a framework for -and identifies - the key determinants of market economies.

Since the 1950s international trade have been growing, foreign direct investment inflows have been enlarged and international capital markets are expanding. The Asian crises in 1997/1998 had a large negative impact on the economy of Asian countries. Besides the economic depression, the business reputation had been hit as well. Fortunately both aspects, national economy and reputation, are in the process of recovery or even beyond that point; in a state of expanding development. There are grounds for believing that the lessons learned have been beneficial for economy and reputation. In the process of adjustments, a main issue of interests and speculation has been whether the region would become more recognizable as Western in its methods of operating, or whether the new forms developing would preserve their typical nature, reflecting Asian ideals, or the somewhat controversial 'Asian Values' (Redding, 2001).
In his study, Redding (2001) states that two features of the business environments of the Asian region appear widely, and tend to be seen as challenging by many companies going in from outside of the region or country. The first is the level of *government involvement* in the economy and the second is the level of *uncertainty and volatility* which the business environment of these countries can display (Redding, 2001).

The findings of Redding (2001) are in line with the theory of Whitley (1998, 1999). Whitley (1998) states that the ways in which different types of internationalization of economic activities influence the many varieties of capitalism, in particular the nature and behavior of leading firms, and the organization of the different market economies needs to be explored in a more systematic way. To deal with this, Whitley has developed a comparative national business systems framework for describing and explaining the differences in the organization of market economies. Mainline in this framework is the identification of key characteristics of economic coordination and control systems. Whitley (1998) elaborates on this with the explanation that the characteristics develop during industrialization and are often reproduced by dominant public institutions that became established during conflicts that have occurred at that time.
Whitley's framework consists of eight key dimensions for comparing business systems. Table 5.1 shows this framework.

Ownership coordination • Primary means of owner control (direct, alliance, market contracting) • Extent of ownership integration of production chains • Extent of ownership integration of sectors *Non-ownership coordination* • Extent of alliance coordination of production chains • Extent of collaboration between competitors • Extent of alliance coordination of sectors *Employment relations and work management* • Employer-employee interdependence • Delegation to, and trust of, employees (Taylorism, task performance discretion, task organization discretion)

Table 5.1 Key characteristics of business systems. *Source: Whitley, 1999*

Ownership coordination

Primary means of owner control

Ownership coordination stands for the extent of owner's direct involvement in managing business. Whitley (1999) distinguishes three major types of ownership coordination. First is the *direct* control of firms by owners, secondly *alliance* control, where owners delegate a considerable amount of decision making to managers and thirdly, *market* or arms' length portfolio control.

Each of these three types of ownership differs in terms of six important characteristics. See the table 5.2 below.

Characteristics	**Types of owner control**		
	Direct	**Alliance**	**Market**
Involvement in management	High	Some	Very low
Concentration of ownership	High	Considerable	Low
Owner's knowledge of business	High	Considerable	Low
Risk-sharing and commitment	High	Considerable	Low
Scope of owner interest	High	Considerable	Low
Exclusivity of ownership	Considerable	Considerable	High

Table 5.2 Characteristics of owner-control types. *Source: Whitley, 1999*

Owner types in Vietnam are mainly direct types of owner control. Most business are small firms (< 5 employees), see chapter 4.2 and appendix B. The involvement in management (I) and concentration of ownership (II) is high. Many of the former SOE – managers, who gain control through the equitization process, are engineers by training, with a specialization in their particular industry. This professional background enables them to manage new technology, such as that transferred by foreign investors through a joint venture, and to implement it in the production process. With this, owners' knowledge of business is high (III). With the high knowledge of business, owner-managers can manage risks and uncertainty. Therefore one can say the risk-sharing and commitment (IV) is at least considerable, if not high. The scope of owner interest (V) can vary among different ownership types. It can be stated that the scope of interest of managers in SOE's compared to non-state companies differs in a way between low/considerable for the former and high for the latter. It is hard to find evidence to confirm the theory's considerable rate of exclusivity of ownership (VI). Since this differs among the several types of ownership and (owner-) manager-interest, a rating of considerable exclusivity of ownership for Vietnamese companies is acceptable.

Extent of ownership integration of production chains and- of sectors

The scope of ownership integration of economic activities varies greatly across market economies. Ownership integration of production chains and ownership integration of activities across sectors are other measures to compare ownership relations in business systems. These two measures are about the extent to which unified and common ownership entities control, manage and integrate considerable parts of production chains across various sectors. Here, horizontal and vertical integration and diversification applies. In production chains vertical diversification will mostly apply, whereas horizontal diversification will occur across sectors.

Modern production technologies and processes in manufacturing often involve making components of the final product in different countries, and then assembling the final product in low-wage countries like Vietnam (Leung, 2005). In this context production chains can be considered as vertical. In Vietnam, with many small firms, integration of activities in production chains tends to be vertical in some degree. Integration across sectors might occur at larger (foreign) firms, where diversification is more common compared to the small, family driven domestic firms, who are more dedicated, with little to no diversification of their business activities.

The three characteristics of ownership relation are often interrelated. Where in alliance forms of ownership control it is more likely to slow down unrelated diversification of ownership, while in market ownership forms, it is encouraged to spread risks that cannot be shared with business partners. Owner-managers in direct control, tend to develop expertise and knowledge of their business, in order to manage the exposure to risks and uncertainty. Diversification beyond their own powers, increases the owner’s risks, therefore is it unlikely that direct-control owners encourage the diversification. As the opposite counts for market-owners, where they can sell their assets on the market if diversification does not work. It makes sense these owners will not strongly oppose diversification.

Non-ownership coordination

The integration of activities between companies through alliance, obligations and other non-ownership connections applies to three sets of inter-firm relationships. In all three relationships it is about the distinction between equally losses and profits (zero-sum), opposite-contracting and competition versus more cooperation, long-term and mutually committed relationships between partners and competitors.

Alliance coordination of production chains

Ownership in production chains is divided. There exist however, strong networks of mandatory contracting between relatively stable suppliers and customers. In Vietnam there exist traditionally strong networks of commercial relationships built on trust (Buell, 2000). One can say there exist some alliance coordination among production chains in Vietnam.

Collaboration between competitors

Competitors may compete for customers but at the same time work together concerning new work methods, technologies and employment policies through several formal associations and alliances.

In Vietnam, in particular the larger, foreign driven firms do not at first collaborate with competitors. Especially in newly emerging markets such as cold chain, collaboration between competitors is not expected to occur at first. On the other hand, combining forces will stimulate and allow the market to grow, for the benefits for all parties involved.

Alliance coordination of sectors

Companies in certain sectors may set up alliances across sectors. This in order to gain stability, knowledge or technologies, to enter new markets, or reduce risks of specialization. Sometimes this involves long term exchanges of equity, but more often forms of subsidiary joint ventures and partnerships focus on specific business activities. This type of alliance coordination occurs in Vietnam mostly in the form of a Joint Venture. Foreign companies are not at fully allowed to own the majority of equity of firms in Vietnam, nor can companies be fully-foreign owned. However, this applicable rule does not hold in every case. There exist practical examples of some 100% foreign-owned firms in Vietnam. Further detailing on this matter would be beyond the scope of this research.

The different forms of non-ownership coordination have a relation with the differences in ownership coordination. For instance, in forms of direct ownership collaboration with competitors will be difficult, because of the fact that owner-managers have strong connections with their business and will not be eager to share their knowledge or technology.

Employment relation and work management

Each individual is different and has different chances to develop themselves in their education and working skills. The relation between employer and employee and how the development of work is situated, differs among countries, cultures and industries. Here the focus is on the employment relation and on work systems in Vietnam.

Employer - employee interdependence

The main contrast here is between environments in favor of external labor markets managing the most of the labor force on one hand and the environment in favor of commitment and mutual investment in organizational capabilities on the other hand.

Whitley (1999) stretches here a paradox between the Japanese organization-based employment system. With a large amount of mutual dependence between employers and the employees. On the other hand there is the Anglo-Saxon flexible employment system, where employees change easily from jobs and employers. In the Vietnam work environment there is excessive supply of (unskilled) labor. Companies who are involved in large amounts of manual labor-workforce invest in the skill development of their workers themselves. Mostly these are foreign companies. Vietnamese workers do not change easily between jobs and/or employees. Once a worker has a job they tend to stay there for a long time. Therefore Vietnam's work system and employee – employer relationship is close the Japanese organization-based system.

Delegation to -and trust of employees

Delegation from employer to employee lies in the terms discretion and trust. When applying Taylorism[*], discretion will be removed from manual workers and tasks will be split up to simplify them for unskilled, easily replaceable employees. In business environments where responsible autonomy strategies apply, employers trust manual workers to carry out tasks with more discretion and independence from managers.

In Vietnam, with many owner-managers, delegation and trust to employees is low. Often, many managers lack business education and management skills, which results in poor attention to markets and customers' needs. Also, their backgrounds limits the capacity of SOE's to engage in fundamental management changes, including the reorganization of

work processes and the delegation of decision-making authority (World Bank, 2006). Based on this one can say that trust and delegation between employer and employee is low.
Taylorism does apply in Vietnam. Since outsourcing of work processes that require intensive manual labor is done in the low-wage countries like Vietnam, Taylorism will in most cases apply. Although there is excessive supply of (unskilled) workers in Vietnam, firms in this business put time and effort in the training and education of these workers and try to keep them with the company once they are trained. This is often done by offering a salary that is higher than the average wages and offering additional facilities like meals, clothing etc.

When looking at the relation between employment relation and work systems one can say that it is difficult for a company where Taylorism applies, to pursue long-term commitments from the manual worker and to invest in the skill development of the workers.

Types of business systems

With the identification of the dimensions for comparing business systems, Whitley (1999) has come to six general types of business systems. Four business systems are applicable primarily for market economies based on the degree of ownership-based coordination of economic activities and on the extent of non-ownership of alliance form of economic integration. Two other types of business systems are distinguished based on owner control type, size of the firm and the extent of alliance integration between firms.

1. *Fragmented business system*

This type of business system is dominated by small owner-controlled firms that are actively in competition with each other. Further, in this system short-term market contracting with suppliers and customers applies. Employment relations are short term and controlled through outsourcing. Organizational integration of economic activities of financial control units is low. In this type there exist short term commitments to technology, skills and markets.

2. *Coordinated-industrial-district business system*

Characteristics of this type of business system exist in organized integration of inputs and outputs within production chains and in cooperation within and among sectors. Ownership units stay small and owner-controlled. Commitment of workers here is more important as well as the willingness of employees to improve task performance and innovation. Examples of this type of system can be found in several European countries.

3. *Compartmentalized business system*

Typical for a compartmentalized business system is that large unified ownership units integrate activities within production chains and across sectors. Little commitment or collaboration can be noted between firms or between employers and employees. Ownership control is exercised freely, independent and unrelated through financial markets. Companies are island of authoritative control. Typical examples of these business systems can be found in Anglo-Saxon countries, like the United States.

4. *State-organized business system*

Here, business systems are dominated by large firms that combine production chains and activities in different sectors with a unified administration process. However, there are differences in ownership and control. Direct control of large firms is mostly appointed to families and partners. This, because of the support by the government (state) through subsidized credit. Further the role of the state involves economic development and firm behavior. There is strong vertical dependence between the state, firms and firms dominated by owner-managers. Former communistic/socialistic countries can fit this profile. Vietnam is a socialistic country and could fit to this typology of business system.

5. *Collaborative business system*

This type holds collective organization and cooperation within sectors. Ownership integration of activities in technology and other sectors is low. There exist extensive alliances between firms in term of ownership control. The focus of these firms is on particular industries, in stead of broad spectrum of industries. There is high commitment of employers. The relation with employees is good, in a way that trust in- and delegation to skilled workers is relatively higher that in other business types. Continental European countries fit in this classification of business system.

6. *Highly coordinated business system*

In this business system, ownership control is exercised through alliances and there is a high level of organizational coordination of economic activities. Alliances are extensive within and between sectors. High interdependency among firms and between employers and employees applies and is encouraged. Japan is an economy that has a typical highly coordinated business system.

5.3 Business system of Vietnam

Now the key characteristics of what identifies a business system and the six different business systems have been discussed, an analysis of the business system of Vietnam will be performed.

All eight discussed key dimensions for comparing business systems will now be analyzed and be placed in a table. The characteristics of the business system of Vietnam will be compared to each of the six types of business systems, identified by Whitley (1999).

Business system characteristic	Fragmented	Coordinated industrial district	Compartmentalized	State organized	Collaborative	Highly coordinated	Vietnam's business system
Ownership coordination							
Owner control	**Direct**	Direct	Market	**Direct**	Alliance	Alliance	Direct
Ownership integration of production chains	Low	Low	High	High	High	Some	Some
Ownership integration of sectors	**Low**	Low	High	**Some to high**	Limited	Limited	Low to some
Non-ownership coordination							
Alliance coordination of production chains	Low	Limited	Low	Low	Limited	High	Some
Collaboration between competitors	**Low**	Some	Low	**Low**	High	High	Low to some
Alliance coordination of sectors	**Low**	Low	Low	**Low**	Low	Some	Low to some
Employment-relations							
Employer-Employee interdependence	Low	Some	Low	Low	Some	High	Considerable
Delegation to employees	**Low**	Some	Low	**Low**	High	Considerable	Low

Table 5.3 Six types of business system and Vietnam's business system

The analysis shows that the business system of Vietnam is close to the type of fragmented business system or to a type of state-organized business system.

Linkages with the fragmented type of system can be found in direct ownership, low (to some) integration of production chains, low (to some) collaboration and alliance coordination with competitors and among alliance coordination of sectors. Delegation and trust to employees is low.

Other linkages can be found in the domination of small-owner controlled firms, who compete with each other. Relationships however, are in practice in Vietnam long term rather than short term as described as a characteristic for the fragmented business system. Also, relations between employees and employers, customers and suppliers are in Vietnam more long-term than short term in terms of commitment. The relatively short term commitment to technology, skills and markets does also hardly occur in Vietnam.

Linkages with the state organized business system are the different patterns of ownership. Ownership forms can be stated as direct. Further, the strong involvement of the government in the development and control of the economy, business and companies are applicable to Vietnam. Although a low rate of employer-employee interdependence is a characteristic of state organized, in Vietnam the relation between the unskilled worker and employer can be of low-rate. There is excessive supply of unskilled workers available in Vietnam. However, the interdependence between employer and employee tends to be higher when the skills of the workers have been improved or when the employer has invested in the skill-development of the employee. Strong relations exist in Vietnam between firms and the state.

5.4 Comparison with previous studies

A previous study on the business system of Vietnam has been conducted by Smidts (2006). In this thesis, the author identifies the business system of Vietnam as state organized and highly coordinated. This conclusion differs from the conclusion drawn in this study, where Vietnam's business system is marked as fragmented and state organized. Similarities can be found in the mutual concluded state organized business system. The difference in interpretation between the highly coordinated and fragmented business system can be explained by looking at the characteristics of business systems. Both studies rely on the results of empirical research and literature studies. Differences in outcomes for the empirical research can explain the difference in interpretation for the characteristics *ownership integration of sectors, alliance coordination of production chains* and e*mployer-employee interdependence*.

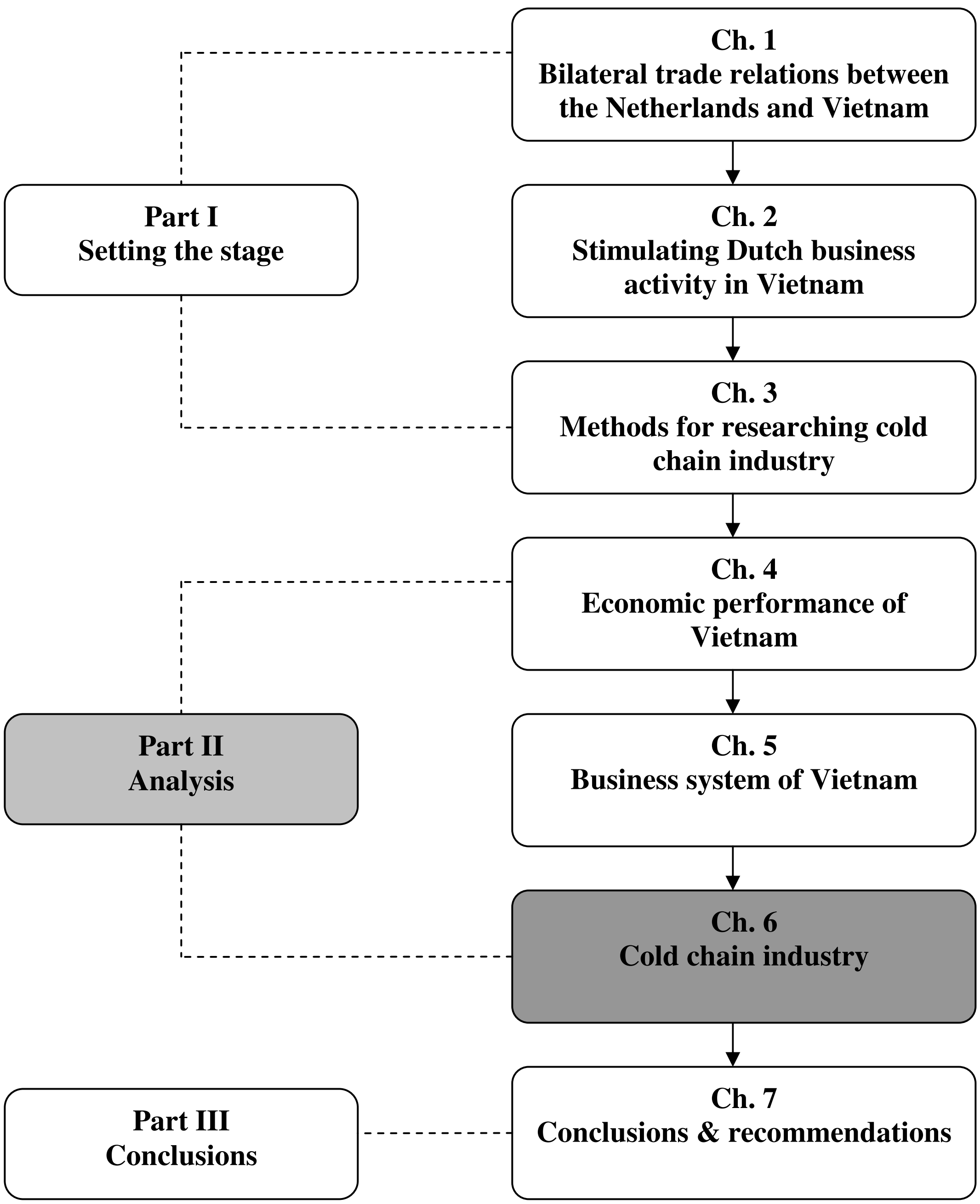
Besides this, Smidts (2006) looks for a movement in business system characteristics. He identifies the movement of owner control from direct to an alliance form of ownership control. Where this study looks at the actual situation of Vietnam. The conclusion of a shift in ownership and with this a shift in business system has not been found in this study.

5.5 Synthesis

In the typology of Whitley (1998, 1999), there exist six different types of business system that could apply to most countries. Each business system consists of different characteristics, correlating to the country's situation. The analysis of the case of Vietnam shows that the country is close to the fragmented business system and the state organized system.

Chapter 6

6 The cold chain industry



Chapter 6

Cold chain industry

6.1 Introduction

This chapter is about the cold chain industry, both in general and in Vietnam specifically. First, a theoretical description will be given of cold chain. Then, the results of the field research will be used in the analysis of the cold chain in Vietnam.

6.2 Theoretical background on cold chain

Different definitions exist for the terms "cold chain". The one used in this research stems from a fact sheet published in Asia Pacific Biotech (2003). Here, cold chain is explained as a "*shorthand for temperature controlled shipping consisting of storage and transport links all designed to keep products at the correct temperature until it reaches the user*".

Describing cold chain does not stop at a single definition. Nayga and Salin (2003) in their article on cold chain networks for food exports to developing countries, use the following definition on chains: "*Chains are considered to be composed of the actors in networks which vertically work together to add value to the customers. A chain is defined as the processes linking supplier and user companies, from the initial raw materials to the ultimate consumption of the finished product*". Each element (actor) within a chain adds value to the chain.

Figure 6.1 gives an overview of an example of a proper cold chain. This figure shows the different actors that are involved in the cold chain. Besides the role of the different actors, like processing, refrigerating, storage, sales, the important role of infrastructure becomes visible.

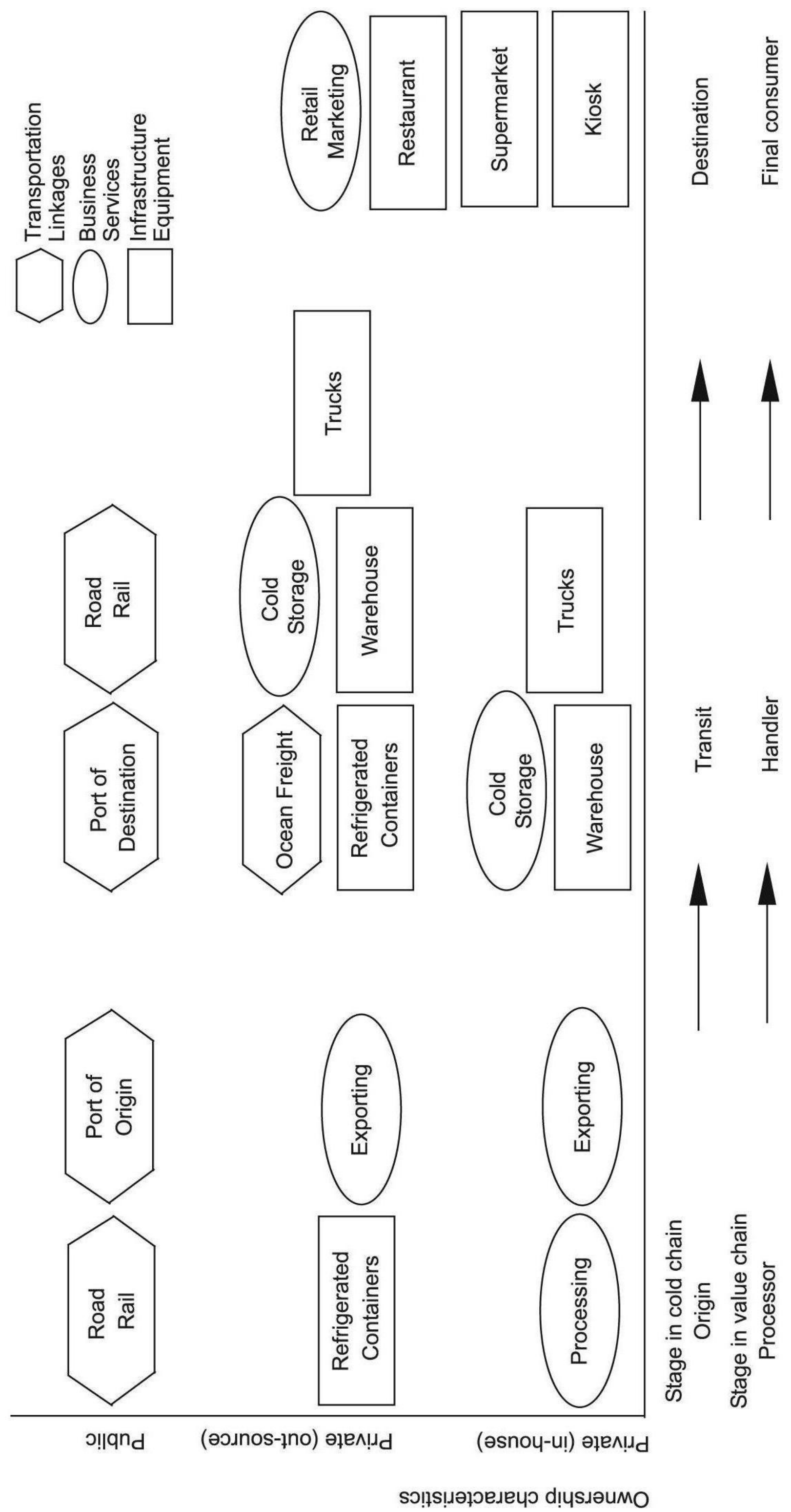


Figure 6.1 Integration of services with infrastructure and ownership characteristics of the cold chain. *Source: Nayga & Salin, 2002*

Cold chain is a term that Nayga and Salin (2003) describe as "*the equipment and processes used to protect chilled and frozen foods*". It is a physical process that dominates the supply chain logistics of certain (processed) foods like fruits, vegetables, meat, dairy, fish and other products like medicine and flowers.

Nayga and Salin (2003) further state that the cold chain component of certain networks, serves to *preserve* value. The cold chain is a necessary condition for world trade in certain higher value foods. A proper working cold chain allows sellers to move products from the beginning (i.e. harvest) to a point in which there might be more potential consumers who consider the product to be of a higher value. Another aspect of a proper working cold chain is the time constraint. Products can be supplied for a longer period of time than was previously possible. Nayga and Salin (2003) call this facilitating of market timing and with this, adding value to the chain.

Temperature is a key parameter ensuring food safety and wholesomeness: when the temperature and the environmental conditions are optimal, one bacterium in the morning can produce millions of bacteria in the same afternoon. Fortunately, refrigeration technology makes it possible to slow or totally inhibit microbial growth and the production of toxins (www.fao.org).

Refrigeration is an important aspect of the development and modernization of a country as it is important for food safety and health. In developing countries refrigeration has substantially decreased the occurrence of food borne diseases (www.fao.org). In developed countries refrigeration occurs all along the food chain. Over 50 percent of foodstuffs in developed countries (1.2 billion inhabitants) are retailed under refrigerated conditions; one can say there is a cold chain from raw materials (post-harvest) to food on the table of the end user (consumer). Food safety starts with the raw materials. However, it took about 30 years in most developed countries (e.g. 1945-1975 for Europe) to set up reliable cold chains (Jevsnik, Ovca & Likar, 2006).

Within a developing country, the cold chain must extent into locations that present greater opportunities in terms of economies of scale. The different stages in the cold chain have different scale economies. For example, transportation services are based on containerized freight systems, which have fairly standard unit costs and are nearly scale-neutral. Rental trucking is also a relatively small-scale business and related to many private owners in the market. Cold storage services are slightly more challenging in their technical and managerial complexity, and in economies of scale. More capital investment is required to install the compressors, insulated panels, and computerized temperature control systems that are used in modern cold storage. Managers can substitute repair and maintenance costs and keep older cold storage facilities running, but this can negatively influence the quality. In addition to the initial investment, warehouse services have increasing scale returns when operating because of the indirect costs of keeping the warehouse cold, whether it is full or not. These features suggest that the cold storage segment of the cold chain faces higher barriers to new entrants than trucking. This is in line with the research results of Nayga and Salin (2003) in that cold storage capacity is holding up and companies are maintaining the cold chain through more intensive use of transportation rather then developing new distribution centers in the secondary cities.

In a cold chain survey held by Food Logistics (2005), an overview of the different actors in the cold chain in the United States was created. One hundred and twenty-five companies participated in the survey. This number represents a good cross-section of upstream and downstream participants in the cold chain. Overall, 31 % were manufacturers of products, 27 % provide warehousing, distribution or transportation services and 42 % are demanders of the product.

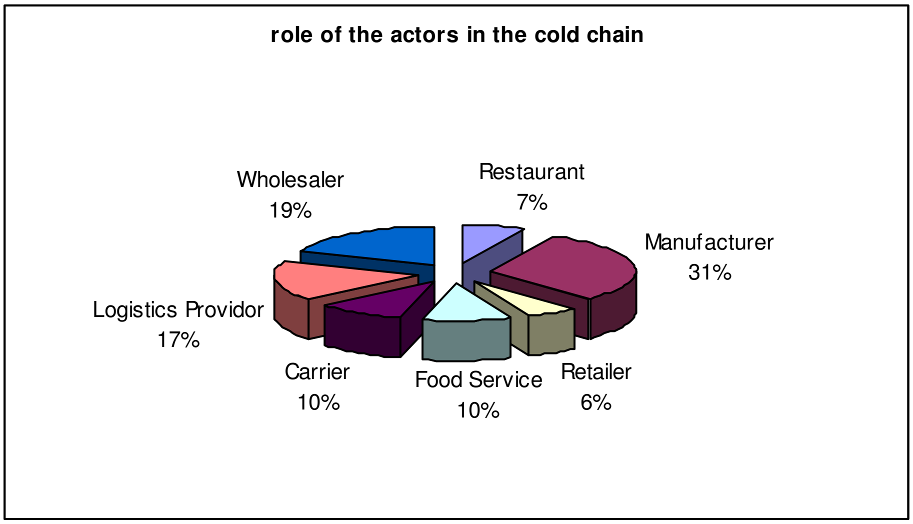


Figure 6.2 Role of the different actors in the cold chain. *Source: Food Logistics, 2005*

Cold chain weaknesses are not unique to emerging markets. Even in the well developed countries, weaknesses in cold chain can occur. One can say it is a global problem. Temperature management is of the essence in a proper working cold chain. This is even more of a problem in the tropics and subtropics, the geographical area of most of the emerging markets.

Specific problems from a weak cold chain include: a) spoilage losses, with rates as high as 50-60% of the product marketed, b) compromised quality which disproportionately affects exports from Western countries, which are exposed to longer distances and time distribution chains, c) food safety problems, which concern food distributors in the global world (USDA, 2005)

Problems that are more recognizable for countries like Vietnam, are 1) financing. This remains a problem, State Owned Enterprises can account for state budget allocations for capital equipment upgrades. Official Development Assistance has funded projects in the sector, but private companies often find it difficult to access bank finance, and thus they have to rely on internal financing for equipment imports, 2) The Vietnamese government does not encourage the usage of second-hand equipment, 3) High cost of electricity, with the development of the economy, the demand for electricity (and other power sources) go up as well, resulting in higher prices, 4) High distribution costs, Vietnam is a long, stretched country with only one highway and a poor state of the roads. The Mekong delta, an important location for aquatics, fruits and vegetables, is surrounded by water, which means distributors must use road and/or waterway transportation. The distances, bad condition of roads, waterways and the increasing costs of fuel result in high distribution costs.

6.3 Sector analysis: Cold chain in Vietnam

An analysis of the cold chain sector in Vietnam will be performed. The analysis will be conducted according to the theory of Porter (1990) and will be divided among the five different elements. Each element will be discussed separately.

6.3.1 Factor conditions

Factor conditions encompass the factors of production which are relevant for competition in certain industries. Transport, storage and handling are the three main elements within the cold chain industry. All three elements require sufficient 'cold' facilities. The most relevant and important factors of production are identified by the interviewed companies in the field. These main factors of production are labor, knowledge, capital and infrastructure.

Vietnam is well-known for its disciplined, hard-working, fast-learning population. Labor is one of the main assets in the drive for economic development (World Bank, 2006). Labor is relatively cheap and abundant in Vietnam. An average monthly salary including allowances was in 2004 USD 50. In the foreign-invested sector the monthly average was USD 60 and in the state owned sector USD 55. Salary levels in other sectors were lower than the national level (EU Counsellors, 2004). Practical examples from the field show that foreign-owned companies in and around Ho Chi Minh City pay up to twice the average salary of around USD 100 or more. The low wage cost makes it one of the main sources of international competitiveness.

Every year an estimated one million Vietnamese are entering the labor market (Rabobank, 2006). Although the unemployment in Vietnam is with an official figure of 2% in 2006 low (World Factbook, 2006; Rabobank, 2006), in the rural areas the unemployment rate is between 25 % and 35 % during non-harvest periods (US Department of State, 2006). The Vietnamese population is very young. Research shows that in the year 2000, 60 % of the Vietnamese are under the age of 30. In 2005 the age group 15-24 years is growing the fastest. By 2010 the working population 15-64 is still growing (AC Nielsen, 2006). As Vietnamese baby boomers, who are born after the war (population growth stands in 2006 at 1.5%) come of age, the need for job creation is increasing. An estimated has been made that around 1.2 to 1.4 million new jobs are required per year (EU Counsellors, 2006).

The availability of the amount of labor however, does not say much of the level of knowledge and skilled labor. This could be a possible bottleneck. A shortage of skilled labor is foreseen in the near future (EU Counsellors, 2006). But also, and maybe even more important, the level of available and future employees is a possible bottleneck in the development of Vietnam's economy. The level of education at university level cannot be compared to the levels of education in West Europe, USA or Australia (Interview: Neso).

There are limited skilled labor resources available in the market in the industry of cold chain. However, the Vietnamese learn quickly and work hard. To coop with the limited availability of skilled labor, foreign owned companies train and develop employees themselves (Interview: Swire).

Infrastructure is an important aspect with the (distribution of) cold chain. The lack of good infrastructure hinders the development of the cold chain. For companies involved and active in the cold chain, the current state of the infrastructure is a big obstacle for the business. There is only one single highway in Vietnam. This is the A1 highway starting in the south at HCMC leading to the capital Hanoi in the north. The condition of this highway and most other roads is poor. All kinds of vehicles make use of the highway, from motorbikes, vendors on motorized vehicles to cars, trucks and busses. This situation leads to dangerous situations with many accidents. Traffic is forced to drive at low speeds. Distances are long in a long stretched country like Vietnam. This is not a favorable situation when driving with perishables. The poor quality and number of suitable roads for professional distribution is a big concern. Roads in Vietnam are small and poor quality resulting in trucks spending many more hours on the roads than they should. This leads to deterioration of perishable products. Also, the poor standards of handling perishable cargo by Vietnamese truck drivers result in “hot” products. Truck refrigeration motors are often turned off and loads are not secured properly in vehicles (Interview: Swire).

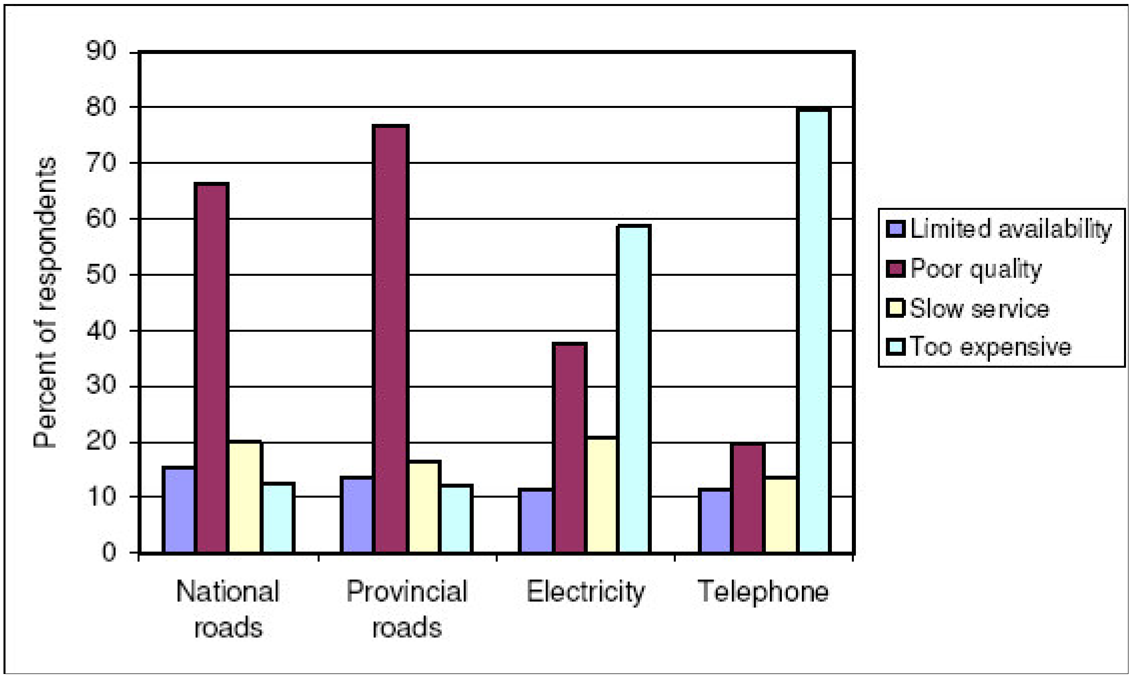


Figure 6.3 Problems with infrastructure, the views of entrepreneurs. *Source: World bank 2006*

Bridges can carry a limited amount of traffic weight, so companies are forced to use small trucks for distribution. The infrastructure did not grow as fast as the amount of traffic did in the past ten years. This resulted in certain speed limits, traffic jams and regulation that prevent trucks driving in the cities during daytime (Interview: TNT). Other firms active in the cold chain industry all lack the poor condition of the roads, which is a valuable aspect in the distribution of perishables. Transportation by land is one way. Other ways like transportation through the water is less used, mostly in the Mekong delta, in the south (Interview: Maersk). Transportation through air is expensive and does not always bring the goods to its point of destination. Transportation through air is mostly used for international export (Interview: Dalat Hasfarm).

Air transportation requires appropriate facilities on its airports. Most international cargo goes through Tan Son Nhat International airport in HCMC. The cold chain facilities cannot be internationally compared with for instance Amsterdam, Frankfurt, Dubai or Kenya. At the airport there are limited facilities for cold chain storage. During handling products are often exposed to the extreme hot weather which is characterizing for Vietnam (Interviews: Dalat Hasfarm, Metro). A personal visit to the cargo area at the airport in HCMC strengthens the findings of the interviewed companies. Besides the lack of good facilities and improper handling services the overall appearance was chaotic and facilities were out-dated and old fashioned. The shortcomings were mostly compensated by the usage of a lot of manual labor.

The lack of proper cold storage is not only at the airport discussable. Throughout the country warehouses and other cold storage facilities do not meet with the quality standards of western countries (Interview: DHL). Companies like Metro Cash & Carry (food retailer) coop with these issues through the usage of own cold storage facilities.

Also a significant problem is the fact that there are no pallets in the cold chain system in Vietnam. All products are moved around the country on the floor of vehicles. This adds to the cost of handling the cargo, as well as to the reduction of the quality of the cargo. It takes a couple of hours to unload and sort a truck load of cargo in stead of 10 minutes if the cargo was presented to the cold store on pallets – 1 line per pallet (interview: Swire).

According to Vietnam News (2007), the inflow of foreign direct investment (FDI) in the economy of Vietnam in 2006 was in total USD 10.2 billion. The Deutsche Bank (2006) comes with a number of USD 9.9 billion. The Vietnamese ministry of Planning and Investment, as published in Vietnam News (2007) calculated USD 10.2 billion worth of FDI. For Vietnam this was the highest rate of FDI inflow so far. The Vietnamese ministry of Planning and Investment expects to attract USD 8 to 8.5 billion of FDI for the year 2007. The responsible minister of Planning and Investment expects the real FDI figure to be much higher, due to positive factors influencing the economic development of Vietnam (Vietnam News, 2007).

Besides projects on economic development, investments should concentrate on large scaled infrastructure facilities related to transport, water supply and electricity (Vietnam

News, 2007). About the investments within the transport infrastructure the minister in his interview with Vietnam News states, that it should be improved in the northern, central and southern regions and that the transport routes need to more effectively connect regions. In addition, the transport network should be better linked internationally with the Mekong region and China.

6.3.2 Demand conditions

The demand conditions stand for the state of the domestic demand for products and services that are produced or delivered in a country. For the cold chain industry this means at one hand the demand for cold chain *products* are important and at the other hand the cold chain *network* or *facilities* are important. It is the domestic and international market who gives incentives for the demand condition within a market or country.

Demand for cold chain products

As mentioned earlier, cold chain products or *perishables* are those products that have a short lasting term, which means it will easily decay. Perishables that are produced, consumed or used for trade in Vietnam are agriculture, dairy and fishery products. Non food products like flowers and, less prominent, medicine also belong to the cold chain in Vietnam.

The buyer of these products is the consumer in Vietnam or abroad. Vietnam is known for the many open-air and traditional wet markets. The five-day workweek and increase in income of Vietnamese households have increased the demand for ready-to-eat, snack and luxury food items. As with the economy shifting from a planned economy to a open market system, the urban retail market has begun a steady shift away from the traditional markets towards the need for modern supermarkets. The amount of supermarkets in Vietnam went from two stores in 1999 to more than 85 stores in 2004 (AgExporter, 2004). Most households in Vietnam do not have refrigerators or microwaves to take full advantage of the demand and supply of the convenience goods. According to research agency Intermart/GFK, 25 to 30 percent of the Vietnamese households own a refrigerator. For comparison; 10 to 15 percent owns a washing machine. These figures are below average figures of households in neighboring countries (Vietnam Economic Times, 2006). This could be a high potential for Vietnam. However, television ownership is much more common in Vietnam. 75 to 80 percent of the households have a television. Intermart/GFK calculates that if 75 to 80 percent have a TV, there is a potential for HDTV (High-Definition Television). Thus, in the future households will have an increasing demand for basic machines like washing machines and refrigerators. When having the ability to store perishables the demand for these products will rise. Together with the increase in disposable income this development could be interesting for the cold chain sector.

The market for fresh food (meat, fish, fruits and vegetables) is seen as a market with the biggest potential (Interview: TNT and Metro). The international wholesale firm Metro Cash & Carry grew in the period 2002-2006 to six stores in Vietnam. In an interview they state: “Metro is strong at distribution of fresh food, the market in Vietnam for fresh food is a potential market and rising”. This perspective is recognized by distributors and facilitators in the cold chain. Further, rising welfare and population growth of around 1.4 % per year has increased the demand for meat. The number of pigs rose by around 7.1% in the period 1999 – 2003. The quality of pig meat improved. Poultry meat output rose even more quickly with a percentage of 9.1 during 1999 and 2003. This output collapsed drastically when Vietnam was hit by the bird flu, named H5N1 (EIU, 2004). Nowadays reports of actual bird flu in Vietnam are a regular phenomenon. Prolonged cold weather and serious droughts also caused damage to the agriculture sector.

Sector growth rate (%)	**2003**	**2004**	**2005**	**2006**
Agriculture	3.2	3.5	3.5	3.4
As percentage of GDP	22.5	21.8	21	20.5
Industry	10.3	10.5	13.5	13
As percentage of GDP	39.5	40.1	40.5	40.9
Service	6.6	6.5	10.5	11
As percentage of GDP	38.2	38.1	38.5	38.6

Table 6.1 GDP by sector. *Source: General Statistics Office Vietnam*

Year	**2001**	**2002**	**2003**	**2004**	**2005**	**2006** est.
Seafood export	1.777	2.023	2.240	2.397	2.650	3.364
Annual increase (%)		13.8	10.7	7.1	10.6	26.9

Table 6.2 Export of seafood. *Source: Deutsche Bank, EU counsellors Report Vietnam 2006. Numbers in USD million*

Domestic market and consumer behavior

The domestic market is important for the development of the cold chain in Vietnam. The economic improvements have a positive effect on the Vietnamese consumer. Improvements in living standards offer the Vietnamese consumer the possibility to buy products that fulfill their demands.

One of the main drivers for the domestic market to grow is the increase in purchasing power of the Vietnamese consumer. Research from AC Nielsen (2006) on the behavior of the Vietnamese consumer, shows that purchasing power from the consumer in urban areas has increased with 58.3 % (to USD 589/ year) and in rural areas with 37.6 % (to USD 227/ year) during 1999 and 2004. Estimates show that by 2009 over two million inhabitants of the two major cities Hanoi and Ho Chi Minh City will have an income of more than USD 430 per month.

Statistics from AC Nielsen show that almost 90 % of the Vietnamese consumer gets up before 7 AM. Almost 60 % of the fresh food purchases done by the Vietnamese consumer are done before 8 am. The absolute amount of money spent on fresh food is rising each year. In 2005, 74 % of the monthly amount (in 2005 USD 131) spend on groceries is dedicated to fresh food. Wet markets still dominate in Vietnam. From all food purchases 74 % of those purchases are done on a wet market. Compared to its neighboring countries, the Vietnamese consumer spends the most of its groceries on fresh food. In the figure below shows the comparison with neighboring countries. Most (90 %) of the purchased fruits, vegetables meat and seafood are bought on wet markets.

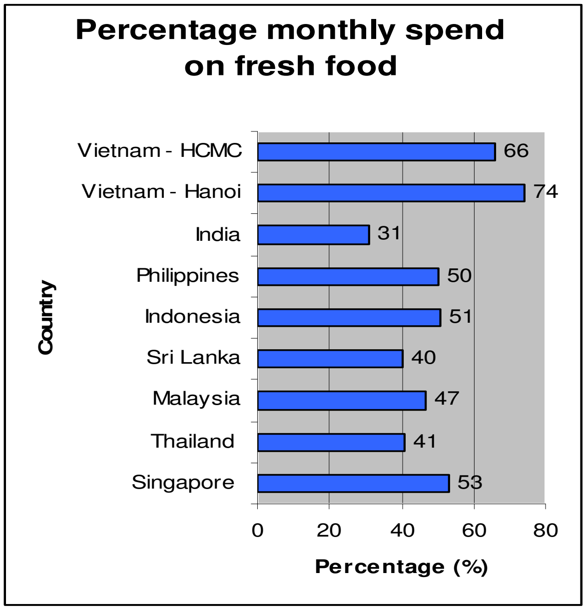


Figure 6.4 Percentage of total monthly budget spend on purchases of fresh food. S*ource: AC Nielsen, 2006*

The Global Retail Development Index shows through analysis the urgency to enter the market for retail. In 2006 Vietnam took a 3rd place on the overall scheme for opportunities within the countries retail market (AC Nielsen, 2006). Vietnam had an index score of 84, where an index score of 100 stands for most urgent to enter. See appendix A for the complete overview.

Large grocery stores are a new phenomenon in Vietnam. Although rising quickly. Forecast made by AC Nielsen (2006) show that the purchases through modern channels (grocery stores) versus traditional channels (wet markets) will be in the benefit of the moderns channels. Where in 2005 9 % of purchases are done in moderns channels, in 2010 that amount will be 24 %. In the two major cities (Hanoi & HCMC) will that number be far larger, 15 % in 2005 and 37 % in 2010. This forecast is strengthened by government expectations and claimed store openings.

Demand for cold chain network and facilities

In order to obtain maximum output and to preserve the quality and safety of perishables it is necessary to keep the products throughout the whole chain (from harvest to consumption) in a temperature controlled environment at all times. With the improving welfare and the establishment of western companies the demand for cold chain facilities is increasing. The figure below shows key numbers for the demand of the market for refrigeration equipment (International Business Strategies, 2001). Between 1999 and 2001 the total market for cold storage equipment increased with 40%. Locally produced equipment rose with nearly 39% and the value of imported equipment for cold chain exceeded 37% in the period 1999-2001. The numbers were measured with a relatively stable exchange rate USD-VN Dong during the indicated period.

Description/Year	**1999**	**2000**	**2001** est.
Total cold storage equipment market size	320	357	450
Total local production	21.6	24	30
Total imported equipment	298.4	333	410
Average exchange rate (USD-Dong)	14.000	14.200	14.500

Table 6.2 Demand for refrigeration equipment 1999-2001. *Source: International Business Strategies, 2001. Numbers in USD million*

Although the displayed figures are not recent anymore it gives an indication of the market for cold storage facilities at the early years of the economic improvements in Vietnam.

Many improvements and developments in the cold chain industry have occurred in the period 2001-2005. However, a regular supply chain of transport for perishables does not apply in Vietnam. TNT express has launched in January 2007 a project for a cold chain network. This project is in cooperation with the Dutch government, under the program for cooperation with emerging markets (PSOM). There is currently a large demand for cold storage and transport. In particular storage and transport which can handle perishables at different temperatures (Interview: DHL). Also, proper facilities at key locations are needed. A good example of a key location is the airport. The cargo area at Tan Son Nhat International airport is the most important place for import and export through the air in

Vietnam (Interview: Jupiter). At the airport large traders of perishables lack the current state of cargo handling (Interviews: Dalat Hasfarm, Jupiter). The cold chain facilities at the airport are mainly used for export from Vietnam. Since transport through air is very costly relative to sea or road transport, air transport is meanly used in cold chain for highly temperature sensitive perishables like flowers. Although there are several techniques to prevent flowers decay quickly and thus to extend the life of flowers, exposure to high temperatures is fatal for flowers. Adding and improving cold chain facilities for storage and handling would improve both the cold chain and the attractiveness of Tan Son Nhat International airport as main port for products into South-East Asia. However, there are plans for a dedicated cargo airport (Interview: Dalat), but there are so many things that have to be done and improved in Vietnam/HCMC. It remains a question whether the Vietnamese government gives priority to a cargo airport prior to improving and extending the existing airport and its facilities.

6.3.3 Related and supporting industries

This element is about the presence or absence of internationally competitive supplying and supporting industries. An international successful industry can lead to advantages in other related or supporting industries.

Although Vietnam does not have many major sophisticated industries, which are internationally competitive, it has some important industries that are directly or indirectly related to cold chain and play an important role on the world market.

For a better understanding of what might be related and supporting industries for the cold chain, cold chain can roughly be divided into two groups. On one side there is the facility side with equipment such as cooling equipment, cold storage warehouses and cooling trucks. On the other side there are the products that demand cold storage; the perishables.

Increase of production, volume, quality, and exports of perishables can stimulate the development of the cold chain sector. The mentioned industries are related industries to the cold chain for storage, handling and transport.

For the equipment and facility side it is noted that one of Vietnam's major import products are machinery, equipment and parts. Figures and first-hand information from cold chain suppliers show that most equipment for cold chain is delivered by foreign producers (through export), see table 6.2.

Vietnam does have an international competing market for perishables. Especially the industry of agriculture, fruits & vegetables, and fishery is an important sector for Vietnam, both for as well exports as for domestic consumption. The domestic demand side has been analyzed in the previous paragraph. This, because of the demand condition for perishables.

Related and supporting industries to the cold chain do not only focus on the facilities and equipment. Electricity and fuel is a necessary condition to run air conditioners, refrigerators, cold storage warehouses and cooling trucks. Especially in a country like Vietnam with a tropical climate, cooling is essential for perishables. High prices for electricity and fuel can negatively influence cold chain. On the other hand stable prices can have a positive effect for cold chain and – products. Unfortunately fuel prices have been doubled in the period 2004-2006 (AC Nielsen, 2006).
Although Vietnam's per capita electricity consumption is among the lowest in Asia, demand has risen in recent years, leading to maximization of the country's limited generating capacity. Rapid commercial sector growths, population migration to major cities, and elevated living standards have all contributed to a growing demand for fuel and electricity (Energy Information Administration, 2005). The demand for electricity from now until 2010 will grow annually at 13-15% (EU Counsellors 2006).

There are some significant improvements however in the distribution and supply of electricity in Vietnam. Together with the World Bank, Electricity of Vietnam (EVN) has initiated several energy programs. Vietnam's rural electrification program has been one of the most successful in the world. The number of rural households with access to electricity increased from 51 percent in 1996 to 88 percent in 2004. Vietnam's power sector has kept pace with extraordinary increases in the demand, and succeeded at maintaining basic service for its customers most of the time. Together with the economic improvements these developments are promising for the development of the (domestic) cold chain.

Widespread *anecdotal* evidence also points to substantial increases in the quality of electricity service over the last ten years, with supply to most customers in urban and the near surrounding (peri-urban) areas becoming noticeably more reliable. However, service is not yet seen as reliable enough by firms, which report an average of 12 power defects or surges per year and, in the case of small and medium-sized firms, losses amounting to 2 to 3 percent of sales due to defects (World Bank, 2006).

6.3.4 Firm strategy, structure and rivalry

This element in Porters Diamond focuses on the conditions in a country that determine how companies are established, organized and managed. This can determine the strategy of companies. Porter (1990) mentions ownership and control as characteristics that can play an important role in the element structure. Rivalry (competition) together with competitive advantage can help provide organizations with bases for achieving advantages on a global scale. Intense domestic rivalry can be an incentive for innovation (Porter, 1990).

The strategy for companies involved in producing perishables seems to be growth and development. Agriculture has step by step moved in the direction of producing goods with higher quality and value which is responsive to market demands (socio-economic development plan, 2006).

The variable ownership contains information on the relations between owners and controllers of private property rights and controllers of economic resources and activities. Thus, who are the owners of firms and other organizations. According to Whitley (1999) an important dimension for distinguishing economies concerns "the extent of owners' direct involvement in managing businesses." In Vietnam there are roughly three parties involved in ownership'; the state, domestic non-state and foreign investors. For the cold chain it is difficult to say who has the ownership. This due to the relevance of many involved industries like products (agriculture, aqua culture, horticulture, pharmaceuticals) and facilities (cold storage, cooled transport). For sure it is certain that the state of Vietnam will retain 100% ownership in “sensitive” fields like public utilities and power transmission (EU Counsellors, 2006). However practical examples and some figures as in table 6.2, show the involvement of foreign investors. In 2001 there were around 35 major companies in Vietnam that were specialized in cold storage services, both foreign and domestic (International Business Strategies, 2001). Most large storage companies have foreign involvement or are foreign linked enterprises (FLE), with no equity partners (Interview: Maersk, Metro, Swire). For transport it is known that it is possible for companies to be fully foreign owned (Interview: TNT).

Rivalry for a cold chain network does not exist in the Vietnamese market. However there are some related services that are currently (Nov 2006) available on the market that have some relation to a cold chain network. There is a limited amount of local commercial operators who rent out trucks with cooling storage. This happens mostly on a short term basis. These operators transport various types of perishables, of which many of them do not compete with the cold chain. Given examples of these products are fresh caught seafood for delivery to processing manufacturers and any other products including those products not related to perishables. The used vehicles that are being used for the domestic transport are usually imported secondhand trucks with out-dated cooling equipment. Contracts with these transporters generally do not include terms concerning quality maintenance during transport and allow flexible times of delivery. The condition of the trucks is generally poor and can cause considerable contamination risk of the products. When legislation concerning age and technical status of commercial vehicles is being introduced in Vietnam, many local operators may seriously be affected by this (TNT/PSOM, 2006)

Some local and foreign-owned producers or processors of temperature sensitive products have invested in cooled trucks. These trucks are mainly used for the transport of their own goods. According to TNT these companies sometimes offer their capacity/ trucking services to third parties. These trucks mostly operate closely to their facilities and their known routes.

Other than the local transporters and self-owned cooled trucks, there is also the availability of cooled container transport (reefer transport), mostly by ship for long distances or for international destinations.

Both foreign as well as Vietnamese companies are active in the field for cold storage. Foreign companies encounter a lot of competition, mainly from local Vietnamese cold stores. These Vietnamese stores have improved tremendously over the past few years and they are growing quickly. It is particularly difficult to compete with these companies on price. Foreign companies are constantly under price pressure as the local competitors offer cheaper prices and their facilities and services are improving (Interview: Swire).

6.3.5 The Role of Government

The fifth element in the diamond is the role of government. A government can influence the environment for companies, both positively as well as negatively. A government can do this in several ways.

Government involvement in the cold chain is limited and there are very few rules and regulations that pertain particularly to the industry. There is of course the usual rules and regulations that pertain to fire systems, environmental discharges etc., but these are rules that apply to all industries, not specifically to the cold chain business (Interview: Swire).

For large projects there is however, government support. The Dutch government currently supports projects within the cold chain. This, through a Program for Cooperation with Emerging Markets (PSOM). With this funding, investments can be made in the industry and projects can start. Beside the involvement of the Netherlands there is big support from the Vietnamese government for a (domestic) cold chain network. This is based on the demand from the market and with the focus on investment opportunities. Most material and equipment used in the project is either produced or bought in Vietnam (Interview: TNT).

6.4 Synthesis

A proper working, fully mature cold chain takes many years. Securing food safety is a first step. Each step in the chain contains different actors. Each of these actors makes its own contribution to the whole chain. The availability of cheap labor is a major attractiveness to not only the cold chain, but to many markets. The limited education of the gross of the labor force, however, makes it mainly attractive for low skilled work, like mass production.

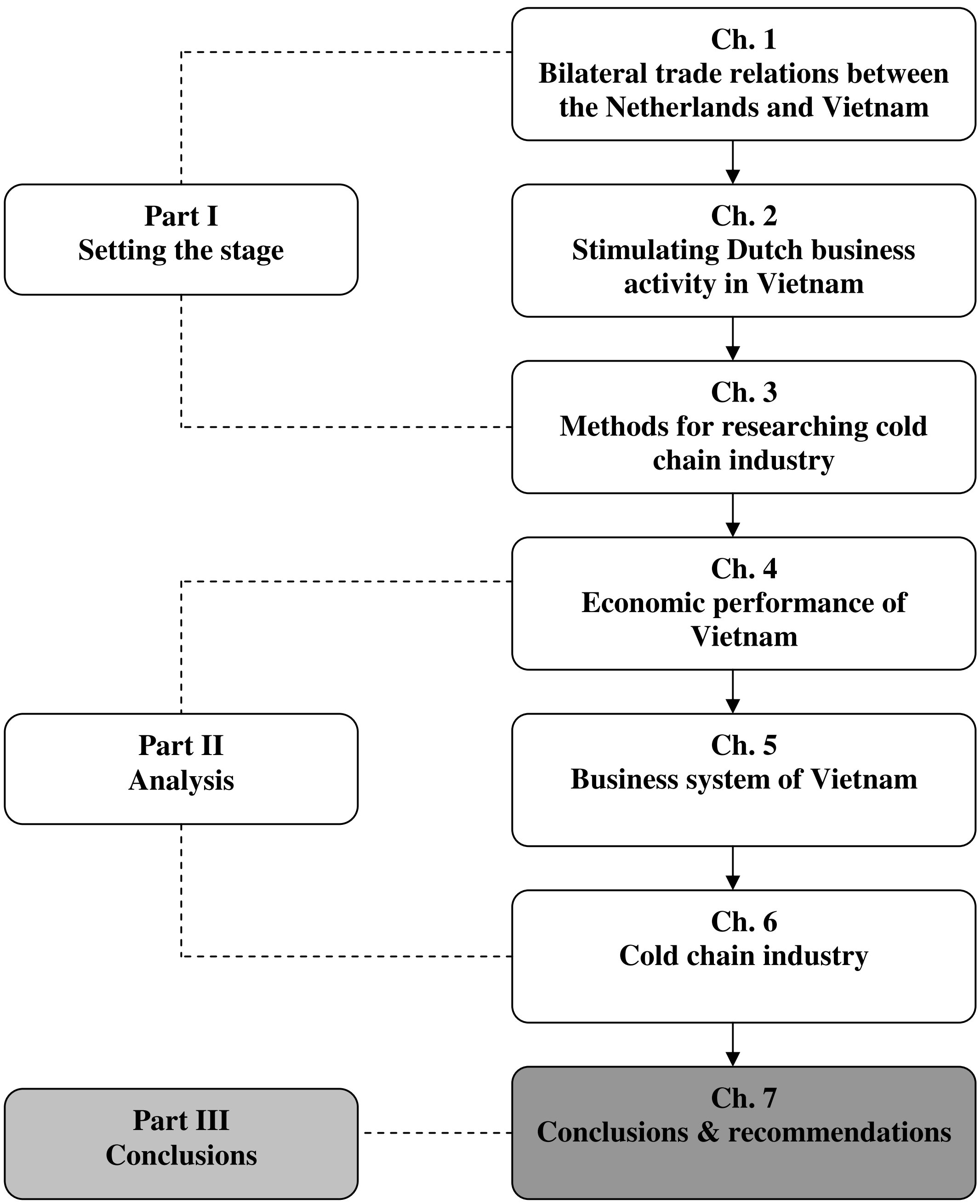
Distribution is a key element in a cold chain. The quality of the existing roads, bridges and other infrastructure in Vietnam are poor. The lack of a good network of highways and separate roads for the different users makes it difficult for distribution. The numerous amounts of motorbike couriers, together with their inventiveness hold the distribution channel running. The question here is for how long this will hold, with the predicted increase of people, motorbikes, cars and other means of road transportation, not even considering the logical increase in demand for products and materials country wide.

Consumer behavior is changing. The purchasing power of consumers is increasing and with the developments, their demands are changing as well. Fresh food was already important in Vietnam, and this will be continued as such. The sudden increase of grocery stores is a practical example of the results of the change in supply and demand. Facilities to the cold chain have to grow along the increase of supply and demand of perishables.

When cold chain facilities are growing and expanding, related industries are growing as well. An expanding industry attracts other companies and with this competition will grow. Rivalry is, however, small, which allows existing actors to fully invest and grow in the cold chain and even in some related industries. The government supports large projects in cold chain. The lack of rules for quality and control stimulate activity in the cold chain, but discourages exports to developed countries.

Chapter 7

7 Conclusions



Chapter 7

Conclusions

7.1 Conclusions

In the former chapters the results of the research has been presented. In this final chapter the results will be combined to a final conclusion on the main research question and the sub questions.

The conducted research is in line with the scope of the Netherlands Consulate General in Vietnam. This research tries to contribute to the information feed-function of the CG and in particular tries to give insights in the business opportunities for Dutch firms in the cold chain industry in Vietnam. Therefore, the main research question is formulated as following:

What are the business opportunities for Dutch firms in the cold chain industry in Vietnam?

The main research question has been divided into three sub questions. Each sub question contributes to the final result of this research. The sub questions will now be answered separately.

1. *How does the cold chain industry in Vietnam looks like?*

A proper working cold chain is a complicated network of reliable actors. Along with economical development, cold chain will further develop. The research of the case of Vietnam shows that the different actors in the cold chain are in that process of development. When taking the overview of the cold chain in perspective as shown in figure 6.1, one can say there is 'some' of every actor in this overview. The research shows that cold chain for exports are in a further stage of development than for the domestic market. However, the economical development has its effect on the actors in the cold chain as well. Quality and competition of cold chain services are increasing and so are investments and foreign involvement in the sector.

2. *What kind of business system does Vietnam have?*

The research shows that Vietnam's business system is close to the fragmented business system and the state organized business system. Both systems are characterized by the direct form of ownership. Although ownership control is nowadays changing to a less direct form of ownership, it still applies for the case of Vietnam.

Between the matched business systems, Vietnam seems to be more related to the state organized business system. Although Vietnam is dominated by small firms (fragmented business system), the influence of the government in the daily business still appears. It can be expected that due to further reforms, the economical development and the foreign influences, the domination of small firms will decrease. With this, the spread of ownership will change with it, which eventually will result in a shift of business system, away from both the fragmented business system as well as the state organized business system.

3. *Which investment opportunities do exist?*

Cold chain in Vietnam cannot meet the standards and quality of the cold chain in developed countries. Throughout the whole cold chain in Vietnam attention is needed for the development of that stage in the chain. The sector analysis shows that cold storage at all times is necessary for food safety. Since cold storage from harvest to consumption is required and most interviewed companies lack the storage possibilities right after harvest, it can be concluded that cold storage is an opportunity, in particular near or right at production facilities of perishables. Further, distribution is a key element in cold chain. The lack of solid infrastructure, like bridges and above all a reliable road network with separate roads for the different traffic participants really hinders the distribution of perishables. Opportunities can therefore be found in this area as well.

7.2 Limitations

The data that have been used in this study was the result of literature studies and empirical research. The empirical research was necessary and very helpful to gain firsthand information from the cold chain sector. Without this data, this study would not have been complete. However, it has to be noted that the amount of interviewed companies is relative limited, but efforts have been taken to interview a representative amount and types of companies involved in the cold chain industry in Vietnam.

Whenever possible the most recent information has been used in this study. However, not always the most recent information was present. Sometimes information from, i.e. 2001 to 2003, had to be used. In an additional case the information source (Nielsen) was up-to-date (November 2006), but that source used relatively older information.

A limitation of the literature can be found in the theory of Whitley. Whitley does not include a culture analysis in his theory of business systems. Although culture plays a significant role in behavior of people and organizations, in his method this does not become clear.

7.3 Recommendations for future research

During this research many questions have raised related to the subject of this study. Significant efforts have been taken to answer most of the raised questions, however is it possible some questions have not been answered by this research. Additional research related to this topic is therefore conceivable. Here, some suggestions to additional research following this study will be given.

The cold chain industry is more than the temperature controlled storage and transportation of goods. It is inevitable to involve related industries, like infrastructure, to the cold chain, although they can be considered as a separate industry. The research has shown that a complete cold chain involves all kind of actors. Therefore it would be interesting for future research to focus on one of these related actors, like distribution of goods and the road network and infrastructure.

During the research of the cold chain in Vietnam, many fields that somehow are related to the cold chain have come across. Not all related fields have been discusses in this study. This, due to the relevance of related field to the subject of this research. One field that is somehow related to cold chain is the food processing sector and the packaging sector. The loss of perishables after harvest is relatively high. Better packaging and/or processing of perishables and other (non-perishable) agriculture goods, would lead to better quality and less fall out of products.

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