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<u>Research Paper (NPT program B3)</u>

MARKET STRUCTURE AND MARKETING CHANNEL ANALYSIS: THE CASE OF SWINE IN THE MEKONG DELTA – VIETNAM

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Abstract

The study was made to interview 200 respondents from breeders, collectors, and slaughter houses by using convenient sampling method in order to present and analyze the status of market structure and marketing channel of swine in the Mekong Delta (MD), Vietnam. The study shows that swine market places are competitive market, all elements of market structure have good function; there is no room for individual behavior in the swine market. The result also illustrates that although the swine marketing channel is rather effectiveness, it still needs to increase the effectiveness of market information and transportation systems. Among actors in the swine marketing channel, collectors have the highest profit margin among actors in swine marketing channel. Next is swine breeders. The third is retailers and the last one is slaughter-house. Two ratio is used to measure the distribution profit among actors, but it is very hard to withdraw the conclusion about the situation of distribution profit among each actor in the swine marketing channels. It is needed to have further information to support and evaluate. This study finally suggests some further researches to increase the effectiveness of swine marketing channel as well as develop swine industry in MD. These are: (1) to build the market information system so that actors can access market information effectively; (2) to establish a new distribution channel in order to reduce the number of middlemen and improve the effectiveness of swine distribution channel; (3) to build new swine marketing channel for large scale production; (4) to suggest some policies and regulations from government to support and encourage large production entrance foreign markets; (5) to reduce feeding cost and swine variety cost; (6) to evaluate about "risk assessment" among actors in swine marketing channel.

1. EXPLORATION OF THE PROBLEM

Vietnam economy transition from concentrated economy to market economy has encouraged farmers to produce more agri-products not only to increase farmer's income but also to contribute on GDP. The Mekong Delta, 4 millions ha in area and more than 13 million labors work in agricultural production, is a great potential and advantage area in producing high value agri-products such as rice, aquatic products, animal feeding and fruits, etc.

In recent years, it is said that the contribution of agri-products in local and export consumption from the MD has increased rapidly, especially in rice, pork meat and aquatic products. However, there are many weaknesses in production system and distribution channels of agri-products. For example, maintainable product quality are low, price fluctuation, ability to supply product at the right time and right place are weaknesses, and the complex of distribution channel, etc.[1] These problems have created negative effect to the competitive efficiency in both local and interregional markets.

After market liberalization, the present marketing system of agricultural products is very young, not all market mechanisms are expected to be operational. Many buyers-sellers and/or middleman involve in the channel of distribution, it leads to high cost of distribution, lower price for farmers and higher price to final consumers[2]. The distribution channel of agricultural products, especially in swine, chicken content many obstacles need to be solved.

Among the development goals of the Vietnamese government for the next few years are:

- To increase the volume of swine production for domestic consumption and processed pork for export market.
- To obtain an efficient method of pork marketing at all times and at competitive prices in the market.
- To improve the channels of distribution at regional and interregional levels.

To attain the above mentioned goals, there is a need for adequate information on the market structure, conduct, and performance of the swine industry. Knowledge of the market structure, conduct and performance of the Vietnamese swine industry will be useful to researchers and policy makers in developing a marketing program for the country's swine industry. Information on the marketing

[1] Hai LTD-Trinh BV (2004). *Marketing solutions for improving the channel of distribution of livestock in Cantho, Haugiang, Angiang and Vinhlong provinces*

practices, costs, and margins for swine product can also help in identifying the weakness of the swine marketing in Vietnam. Further more, planners and policy makers in Vietnam will be provided with necessary information in formulating strategies and market alternatives geared towards the improvement of the swine marketing system. The aim of this study is to explore a general picture about swine marketing channels in the MD and find out some issues in the swine marketing channels for further researches.

2. RESEARCH QUESTION

The research named ***"Market Structure and Marketing Channel Analysis: The Case of Swine in the Mekong Delta – Vietnam"*** was conducted to answer the following questions:

- What is the situation of the swine distribution channel in the MD?
- How is the effectiveness of marketing channels in the MD?
- How is the value-created of marketing channels in the MD?
- What kinds of issue/topic should have further researches?

3. RESEARCH OBJECTIVES

This study is a part of NPT project to enrich the knowledge and strengthen research capacity of SEBA staffs; and swine is one of the commodity goods chosen for conducting a research. Moreover, with the globalization and high competition tendency, it is necessary to know the effectiveness and value-created of the swine marketing channel in order to have a general picture of current swine marketing channels. Therefore, this study aims to examine the current marketing system and channels in selected provinces of the Mekong Delta. The research also focuses on domestic market structure as well as the relationships between different intermediaries in the market and tries to assess the effectiveness of the market services supplied. The results of this study will also provide recommendations for further researches to improve the swine distribution channels.

[2] Hai LTD (2003). *The analysis of swine marketing costs and swine distribution system in selected provinces in the Mekong River Delta-Vietnam*

4. METHODOLOGY / THEORETICAL FRAMEWORK

Integration of the SCP, marketing channel and the division of value-created approaches

In this study, the SCP approach is integrated with the marketing channel approach, and the division of value-created approach. These approaches are used as a guideline, to identify the different aspects of the problem.

According to SCP model, there is a dynamic relationship between market structure, conduct and performance. Market structure and market conduct influence market performance. In turn, market performance will influence market structure and market conduct in the long run (See Figure 1 below). It is clear that performance in particular industries or markets is said to depend upon the conduct of sellers and buyers with regard to pricing policies, product line, investment in production facilities, and so on. Conduct depends in turn upon the structure of the relevant market, embracing such features as the number and size distribution of sellers and buyers, the type of marketing channels, the degree of product differentiation, the presence or absence of barriers to the entry, etc.

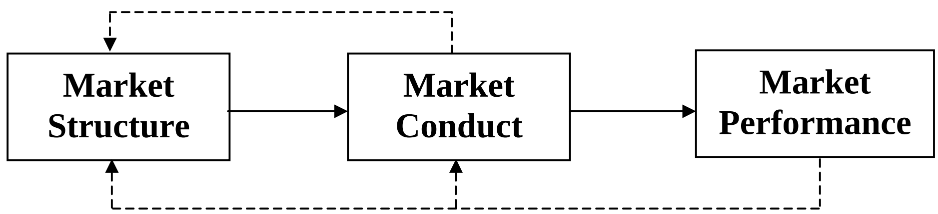


Figure 1: Dynamic model derived from the SCP approach

According to Hai (2003), he applied SCP model and integrated some concepts of the theory of institutional economics and the marketing channel approach in his paper. Table 1 presents the principal aspects that were used by Hai.

Table 1: Elements of Structure-Conduct-Performance

Elements of structure	Elements of conduct	Elements of performance
- Intermediaries involved in the marketing system	Conduct with respect to:	- Effectiveness of supplied services; product suitability in relation to consumer preferences
- Barriers to entry and exit	- Buying	- Efficiency of supplied services
- Buyer and seller concentration	- Selling	+ Rate of profit in relation to marketing costs and price margins (arbitrage in time, space and form).
- The assortment of product quality	- Transport	+ Transaction cost analysis (market searching; negotiating and concluding a contract; enforcing a contract)
- Distribution of market information	- Storage	+ Analysis of price differences and seasonal price fluctuation
- Structure of marketing channels	- Negotiation	+ Market integration
- Price formation process	- Processing	- Dynamic analysis of the market process
- Rules and/or regulations that coordinate market exchange.	- Information	
	- Finance/risks bearing	
	- General trading strategies that traders conducted in order to follow market rules and increase marketing efficiency (reduce transaction costs)	

Source: Hai LTD, 2003

Knowing that there are thousands of producers and collectors involved in the swine market, we are allowed to assume that competition is high. Therefore, there is not much room for actors in the market to behave independently; they have to follow the market rules as defined by its structural elements[3]. In this paper, the element of "buyer and seller concentration" will not be considered as thousands of breeders are small scale producers; and hundreds of traders and slaughter houses are small scale traders and small enterprises. Therefore, buyer and seller concentration is not a relevant element and will not be used in this study. In addition, to analyze the elements of performance, this paper will not evaluate the efficiency of marketing channels, market integration, the transaction costs as well as the analysis of seasonal price fluctuation because of limited data. In Hai's model, one of the components concerned is an analysis of "margin". We also apply this method and use the result to analyze the distribution of value created among actors in the supply channel. Consequently, table 1 was modified into table 2 which contains the elements under study in this paper.

Table 2: Modified Elements of Structure and Performance

Elements of structure	Elements of performance
- Intermediaries involved in the marketing system - The existences of entry and exit barriers - The assortment of product quality - The distribution of market information - Price formation process - Rules and/or regulations that coordinate market exchange.	- Effectiveness of marketing channels; supplied services; product suitability in relation to consumer preferences - Value-added and value created analysis to identify where the economic value is created within a value chain.

Elements of market structure

With respect to market structure, first of all we pay attention to the actors/intermediaries involved in the marketing system by visiting market places, and interviewing actors in the marketing channel. This information defines the general picture of the channel systems. The term intermediary refers to any channel member other than the manufacturer or the end-user. The marketing channels information is also integrated into the first element of market structure (actors/intermediaries). Marketing channels are defined as the flow of products from the place of production to the place of ultimate consumption. The marketing channels help to determine the relationships between different actors in the markets. Secondly, we focus on competition by using three major criteria: the existence of entry and exit barriers, the assortment of product quality and distribution of market information.

- The existence of entry and exit barriers influences the competitive relationship between firms and potential entrants. If the barriers to entry and exit are minimal, new firms can easily enter into and exit from the swine markets and compete with established firms. However, with the presence of very high barriers to entry and exit, established firms become well protected

[3] Bain, J.S. (1968). *Industrial Organization, 2nd Edition, John Wiley, New York.*

from potential rivals[4]. There are three main types of structural entry barriers: (1) Control of essential resources: an incumbent is protected from entry if it controls a resource necessary for production; (2) Economies of scale and scope. When economies of scale are significant, established firms operating at or beyond the minimum efficient scale will have a substantial cost advantage over smaller entrants. Economies of scope in production stem from the flexibility in materials handling and scheduling that arises from having multiple production lines within the same plant. Economies of scope in marketing are due to substantial up-front expenditures on advertising that are needed for a new entrant to establish a minimum acceptable level of brand awareness. Economies of scale and scope create barriers to entry because they force potential entrants to enter on a large scale or with many products to achieve unit cost parity with incumbent firm; (3) marketing advantages of incumbency. Exit barriers arise when firms must meet obligations whether they produce or not[5]. In the case of swine, the entry and exit barriers will be measured by (1) control of essential resources (raising techniques, labor force); (2) Capital requirement; and (3) marketing advantages of incumbency (low demand, fluctuation of market price, market information).

- The assortment of product quality examines the extent to which sellers differentiate, distinguish or express their specific preferences among competing products of the various sellers. Factors such as product quality and kinds of product marketed are common attributes of product differentiation. In the case of swine, product differentiation both at the farmers' and the traders' level are examined in terms of different kinds/qualities of swine; degree of weight; and different types of swine variety (local swine, hybrid swine and foreign swine varieties). The quality of swine will depend on genetics and animal health. The quality of pork meat will base on the color of meat, the amount of fat and healthy swine.

[4] Philip Kotler. *Marketing Management, 8th*

[5] D.Besanko, Dranove, M. Shanley and S.Schaefer. *P301-310, Economics of strategy, International Edition.*

- The distribution of market information refers to the availability of relevant market information. This could be expressed by assessing the producers' awareness of the market price, the manner by which price information is disseminated among producers. The distribution of market information shows how market information is disseminated to producers and traders, what/who are the sources of market information, and the adequacy of this information in terms of reducing risks.

The process of price formation is determined by the following fundamentals: market power, bargaining skills, and some transaction specific characteristics such as quality of product, volume of sales per transaction, and sales location. In general, a large trader usually has high market power on setting prices in the market. Quality of product is related to consumers' preferences. Volume of sales expresses the sales of traders and retailers. Finally, sales location will directly effect to the price of a product as transport costs may be significant.

Rules and/or regulations that coordinate market exchange: we focus on describe the role of government in swine market and major policies and regulations changes to promote and enforce swine trading.

Elements of market performance

Analyzing market performance we focus on the degree of effectiveness in marketing system.

Effectiveness means that marketing channels should offer proper service outputs. It means that the distribution channel has to meet the demand for services expressed by consumers. First of all, the marketing channel has to provide the following generic services: exchange functions (ordering, assembling, negotiation, market information, payment and distribution), physical functions (storage, processing, transport), and facilitating functions (grading, financing)[6]. In the case of swine, the key functions of generic services will be examined to see each function work well or not. Secondly, the swine marketing channel evolves because end-users

[6] Anne T.Cougnlan, Erin Anderson, Louis W.Stern, Adel I.El-Ansary, PP 10, Marketing Channels, 6th Edition, Prentice Hall.

(both business-to-business buyers and individual consumers) usually prefer to deal with a marketing channel that provides higher service outputs such as bulk breaking, spatial convenience, waiting and delivery time, product variety.

Bulk breaking: refers to the end-user's ability to buy its desired (possibly small) number of units of pork meat, liver, etc. even though they may be originally produced in large, lot sizes.

The spatial convenience factor of the service output mainly refers to the distribution of wholesale and retail shops as well as the availability of transportation services. According to gravity models used in marketing research, the attractiveness of wholesale and retail shops to consumers is related to its location. Wholesalers and retailers in the case swine trading usually choose their shops at places that offer convenience for transport, loading and un-loading the product (space for parking, near the main roads or canals), or at a central place that customers can easily visit in order to attract more customers.

Waiting and delivery time: is defined as the time period that the end –user must wait between ordering and receiving goods.

The wider the breadth of assortment or the greater the product variety available to the end-user; the higher is the output of the marketing channel system and the higher are overall distribution costs, because greater assortment typically entails carrying more inventory.

Division of value – created

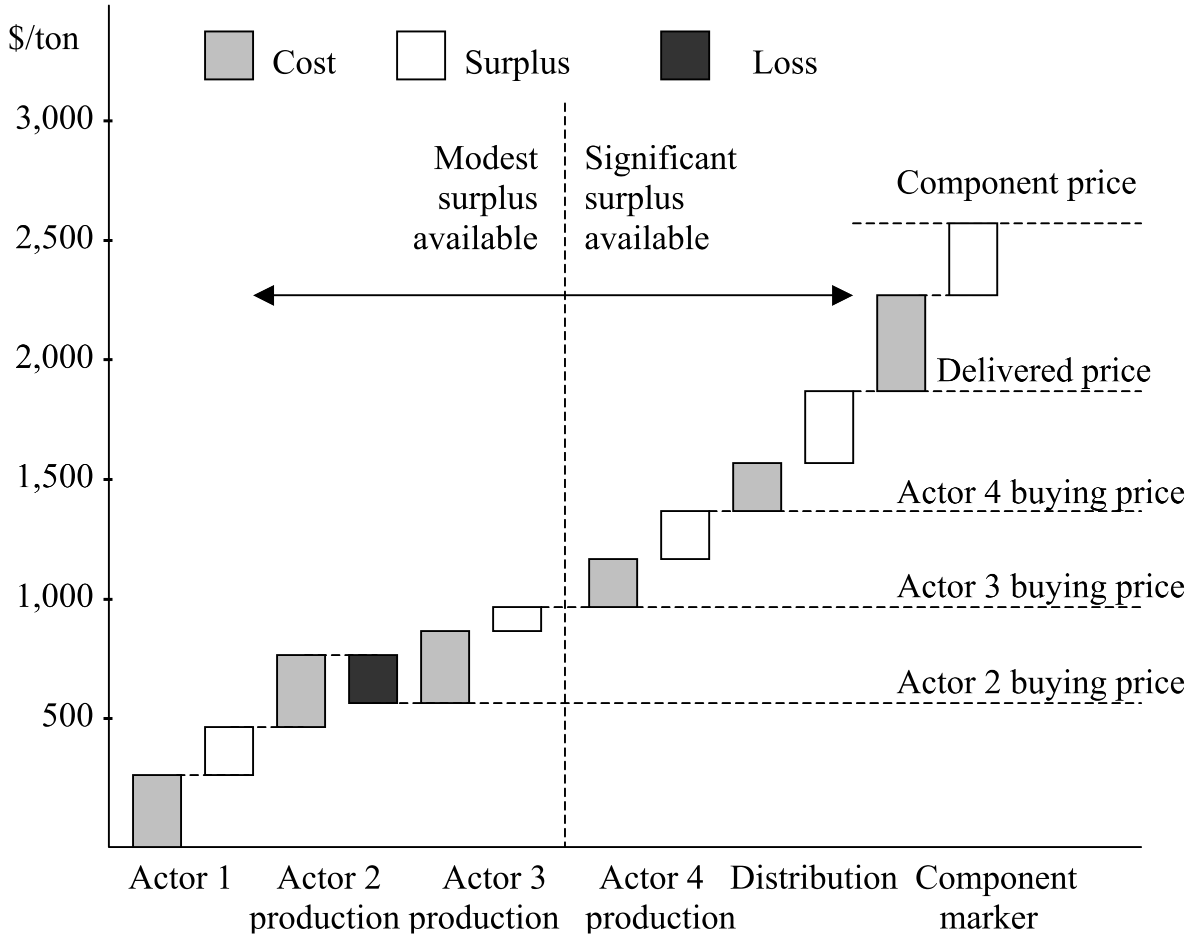
Value-created is the difference between the benefit B and the unit cost C of the product. Value – added analysis is a tool for understanding where economic value is created within a firm's value chain.

The value – added analysis proceeds as follows:

- Value-added in manufacturing = profit that would have been made if the all product of producer are sold to next actor in the channel

- Value-added in distribution = incremental profit made by self-distributing product to retailers or to wholesalers[7]

Figure 2: Division of value – created in the production of one industry



Source: Adapt from Figure 11.11 in D.Besanko, D.Dranove, M.Shanley and S.Schaefer, "Economics of Strategy", Wiley International Edition, 3, 2004, pp. 382.

Figure 2 illustrates the division of value –created in one industry. Actor 1, 2 and 3 capture only modest portions of the overall value-created. They are characterized by strong price competition and low profitability. Distributors and actor 4, by contrast, capture a relatively larger proportion of value-created and earn high profit.

Division of value-created will be applied in the case of swine. Each actor in the swine marketing channel will be analyzed based on their production costs, incremental cost and marginal profit in order to define the distribution of profit

[7] D.Besanko, D.Dranove, M. Shanley and S.Schaefer, *PP 418-419, Economics of strategy, International Edition*

among actors. Then there are two ratios will be used in analyzing: profit margin_total cost ratio and profit_incremental cost ratio.

$$\text{Profit margin\_total cost ratio} = \frac{\text{Profit margin}}{\text{Total cost}} \qquad (1)$$

$$\text{Profit\_Incremental cost ratio} = \frac{\text{Profit}}{\text{Incremental cost}} \qquad (2)$$

These ratios will show the relationship between profit margin and total cost (or extra cost) that each actor earns. Then, a comparison between these ratios for each actor in distribution channel will be performed to determine which actor has high percentage of profit in order to find out reasons why profit of each actor is distributed differently and have further researches in the future.

To do above things, primary data are collected to estimate production cost of producers; marketing costs and marketing margins of various traders. From these results, total cost and total marketing costs of various marketing channels will be calculated. Direct marketing costs include costs for transportation, electricity and water, rent selling-buying ground, processing will also be taken into account. Thus the percent share of each cost item for each type of trader is computed.

Secondly, profit margin measures the rate of return on gross sales after all costs in rendering marketing services have been deducted. The profit margin will be calculated as follows:

$$\begin{array}{c} \text{Profit margin} \\ \text{of each type} \\ \text{of trader} \end{array} = \begin{array}{c} \text{Total marketing margin} \\ \text{of each type} \\ \text{of trader} \end{array} - \begin{array}{c} \text{Variable marketing cost} \\ \text{of each type} \\ \text{of trader} \end{array}$$

5. DATA DESCRIPTION

The data concerning the different sectors involved in the Vietnam swine industry such as the breeding sector, processing, distribution and marketing sectors, the financial system interface, and the public sector, were gathered through researches from different sources and through interviews with people in the industry.

For more details, the survey was conducted in the four swine-producing provinces: Tien Giang, Vinh Long, Soc Trang and Hau Giang provinces, and Cantho city. These provinces had different scale of swine production and represent to provinces in the MD. Interviews were conducted with 150 swine producers, 30 assemblers and 20 slaughter-houses. Thus, a total of 200 respondents were selected and interviewed in the study by using convenient sampling method.

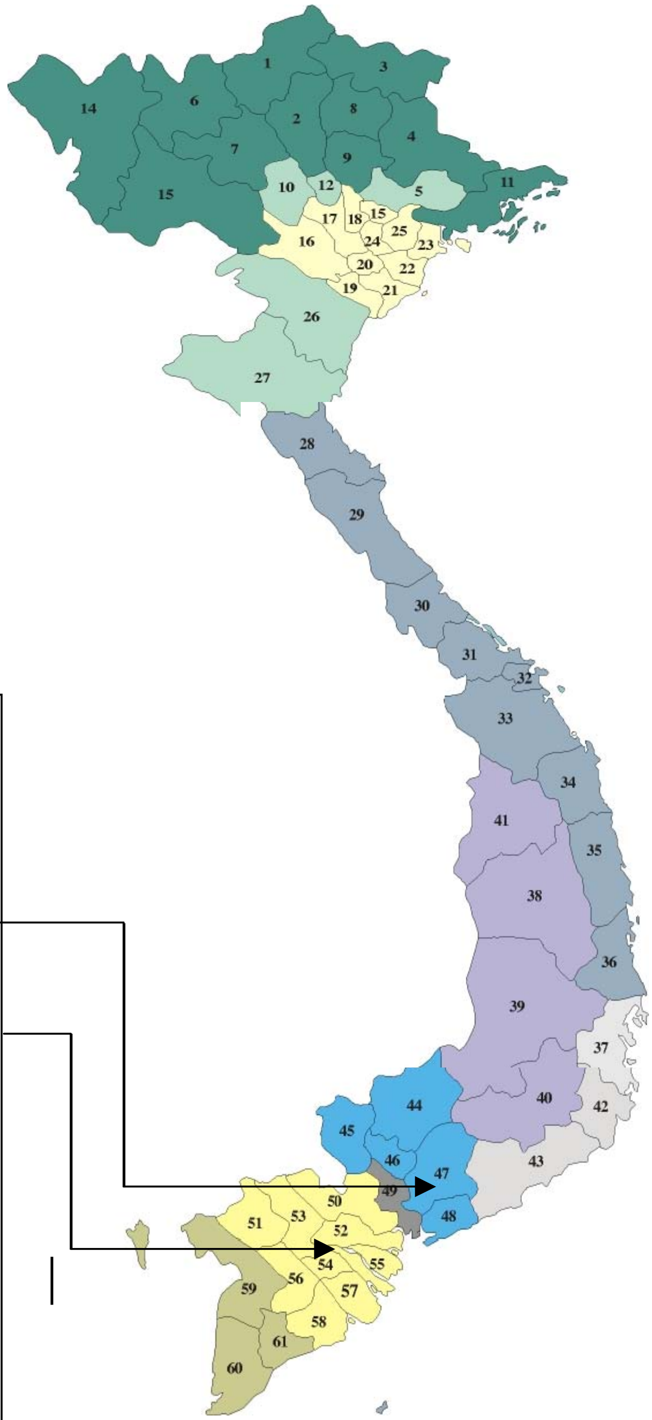
Statistical data such as quantity of swine, population in the MD in the past period, etc. were gathered from General Statistical Office and other government agencies involved.

Descriptive statistics like frequency (by using SPSS 10.0) was used to describe the situation and to identify the main factors affected in swine marketing channels.

6. LIMITATIONS OF THE SCOPE OF THE STUDY

The study is conducted in four provinces such as Tien Giang, Vinh Long, Soc Trang and Hau Giang provinces, and Cantho city.

Due to limited data, the study does not focus on analysis and evaluation the efficiency of marketing channel, market integration, the transaction cost as well as analysis of price differences and seasonal price fluctuation. The study also does not consider on foreign trade and the limitation data from supermarket system.



Southeast

42 Ninh Thuan
43 Binh Thuan
44 Binh Phuoc
45 Tay Ninh
46 Binh Duong
47 Dong Nai
48 Ba Ria - Vung Tau
49 Ho Chi Minh City

Mekong River Delta

50 Long An
51 An Giang
52 Tien Giang
53 Dong Thap
54 Vinh Long
55 Ben Tre
56 Can Tho + HauGiang
57 Tra Vinh
58 Soc Trang
59 Kien Giang
60 Ca Mau
61 Bac Lieu

Chart 1. Location map of the region and provinces of the study sites in Viet Nam

7. RESULTS

7.1. Overview of Vietnamese swine industry

7.1.1 General characteristics of Vietnamese swine industry

Swine industry supplies meat not only in Vietnam but also in many countries on the world. The important advantages of raising swine are the short feeding time, quick growing and short production cycle. On average, one sow can deliver twice per year; every time sow delivers from 8 to 12 piglets. These piglets can grow up and reach from 800 to 1,000kg in case of local varieties and reach to 2,000kg in the case of foreign swine varieties (Hang 2005). The production level and mature of swine husbandry will be higher from 5 to 7 times than cow husbandry in the same feeding conditions. Moreover, the proportion of meat per weight is rather high from 70 to 72%. In addition, swine is an animal consumes less food compare with his/her weight; feed can get from many sources such as waste food in farming household and food from processing industry. Therefore, it is easy to develop swine industry in farming households.

Swine husbandry not only supplies food for local consumption, but also exports to foreign markets. For example, piglet is one of the high value exported products to foreign markets such as Russia, Hong Kong, China, Japan, Singapore and Korea markets. In some rural areas of Vietnam, swine husbandry supplies raw material like swine shit to fertilizer industry and to enrich land.

7.1.2 The development process of Vietnamese swine industry

Vietnamese swine industry has been developed early in every rural areas base on household sizes. In the past years, with the condition of unstable and dependable food, feeding swine almost based on the waste food of farming households. Therefore, the swine varieties in this period were local swine varieties because of easily feeding and less requirement of heavy investment capital.

In recent years, swine husbandry has transferred from raising scatter to raising concentration. The swine varieties are hybrid and foreign swine varieties with good characteristics such as high consuming food and short feeding time.

7.1.3 Situation of swine production in the Mekong River Delta

The Mekong Delta includes Cantho city and 12 provinces. The population of the MD in 2004 was 17,098,900 people, which was 20.87% population of Vietnam; population density were 430 persons/km^2 (see table 3). There were 10,905,171 labor forces which are 64.6% population of the MD.

Table 3: Areas and population of city/provinces in the MD

No	City / Provinces	Area (km^2)	Population (person)	Population density (person/km^2)
1	CanTho city	1,390	1,127,100	810.9
2	LongAn	4,490	1,407,100	313.2
3	DongThap	3,238	1,643,700	507.6
4	AnGiang	3,406	2,174,700	638.5
5	TienGiang	2,367	1,684,300	711.6
6	VinhLong	1,475	1,047,200	710.0
7	BenTre	2,322	1,345,600	579.5
8	KienGiang	6,269	1,632,800	260.5
9	HauGiang	1,607	776,300	483.1
10	TraVinh	2,215	1,015,800	458.6
11	SocTrang	3,223	1,259,800	390.9
12	BacLieu	2,547	786,400	308.8
13	CaMau	5,211	1,198,100	229.9
	Total	**39,763**	**17,098,900**	**430.0**

Source: Data summary Social Economy of 13 provinces in MD, 24/12/2004

In recent years, the economy of the MD has transferred positively. The GDP was 10.6% in 2004 and the average income per capita was VND 484,000, increased 36% compare with the year 2002. In the planning of year 2005, the number of swine in the MD will be 3.4 millions and the quantity of pork will be 357,000 tons. Until year 2010, the number of swine in the MD will be 4 millions and the quantity of pork will be 470,000 tons (Hang 2005).

In general, the MD has good weather and natural conditions to develop and reach the targets above in swine industry.

Table 4: Number of swine by province in the MD from 2000-2004

Unit: thousand heads

Area/Province	**Year**				
	2000	**2001**	**2002**	**2003**	**2004**
Whole country	20,193.8	21,800.1	23,169.5	24,884.6	26,143.7
MD	2,976.6	2,946.1	3,151,6	3,448.6	3,713.8
LongAn	187.1	212.1	213.7	241.1	280.2
DongThap	186.5	214.3	227.4	272.2	304.0
AnGiang	186.1	164.9	179.8	203.8	252.3
TienGiang	429.1	437.6	464.6	486.4	495.4
VinhLong	245.7	256.9	269.0	285.2	300.9
BenTre	280.8	272.6	288.5	312.1	315.4
KienGiang	277.0	265.2	296.7	331.0	358.2
Cantho city	242.6	289.2	288.0	314.5	149.3
HauGiang					181.0
TraVinh	225.2	232.0	282.5	307.8	349.6
SocTrang	224.7	226.4	236.3	256.1	273.8
BacLieu	206.0	187.1	203.3	222.3	226.4
CaMau	285.8	187.8	201.8	216.1	227.3

Source: Statistics yearbook 2004

The number of swine in the MD has been continuously increased in recent years. Comparing with year 2001, it increased by 26% (from 2,946 thousands head in year 2001 to 3,713 thousands head in year 2004). Among provinces in the MD, TienGiang province had the largest swine production (495.4 thousands head in year 2004).

Advantages of Raising Swine in the MD:

- The central and local governments are interested in developing the swine production and consumption.
- Natural conditions are suitable for developing of swine breeding
- Breeding feeds are available and in multiform.
- Veterinary networks are available and in line service at villages, have an ability to treat deadly diseases.
- Researchers are available in the MD provinces, particularly in CanTho University.
- Trading conditions are favorable.

Disadvantages of Raising Swine in the MD:

- Local piglets have poor productivity, low meat quality
- Animal protein feed is not enough.
- There are fluctuation of domestic and foreign markets in terms of price and demand
- Professional skill of swine breeding is low
- There is a slow improvement in pork processing
- There are threats of epidemics in swine production

7.2. Market structure in the swine marketing channels

7.2.1 Intermediaries involved in swine marketing system

a. Swine breeders/Raisers / producers

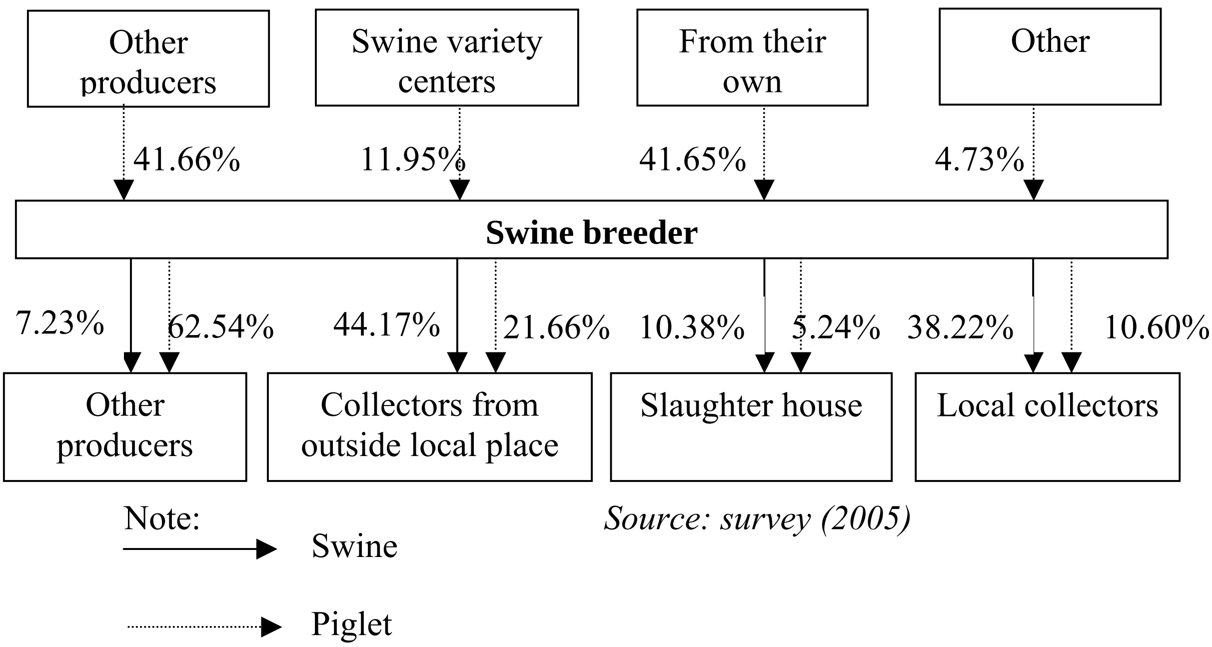
Raisers include farmers who join in raising swine (sow, piglet, and swine). In case of raising sow, farmers raise sow not only for getting piglets but also for selling piglets (13 kg per piglet), to their neighborhoods, collectors and traders. The price of piglet is high enough for farmers to earn profit. Currently in the MD, there are a few centralized producers; most of swine raisers are non-centralized producers, they raise average 15 heads per time and 2-3 times per year.

About raising technique, most of breeders raise swine in small and simple pigpens which are suitable with economic condition of households. The waste of swine was not processed; it was collected and put in the garden or pour into ponds. To the centralized producers, however, they use biogas systems to process the waste of swine.

Nowadays, most of swine breeders use industrial cattle-feed to raise swine and they mix industrial cattle-feed with by products from agricultural production such as bran and broken rice; from processing soft noodles and noodles; and from waste food of restaurants and eating houses. This traditional raising swine helps swine breeders reduce feeding cost and earn more profits.

According to survey, half of swine breeders has entered swine industry from year 2000, their average ages are more than 40 years old. Most of them are small scale swine production. They raise average 10 heads per household per time and 2 to 3 times per year. To them, raising sow is more efficiency than raising porker as breeders can sell piglet to earn more profit.

Figure 3: Inflow and outflow operation of swine breeders



Source: survey (2005)

Inflow operation

Swine breeders either buy piglets from other producers who are their neighborhoods, state companies like Swine Variety Center and others producers account for 48.35% or use their own ones (account for 51.65%).

Outflow operation

There are 62.54% and 21.66% of swine breeders sell piglets mainly to other producers and collectors respectively; the remains will sell to local collectors and slaughter-house. With 44.17% collectors from outside local place and 38.22% local collectors are main buyers who buy swine from breeders. The reasons why breeders sell swine mainly to these actors are: (1) there is a good relationship between these actors and breeders (2) these buyers pay by cash as well as offer with reasonable price. The consumption swine of other producers for wedding party, worship, etc. is 7.23%. The remains are sold to slaughter-houses.

b. Collectors

Collectors enter in swine industry as this kind of business does not require much educational level, capital investment or that is their family traditional career. Most of them are small enterprise; they do not own stocking ground or selling facilities. They normally own transportation facilities or rent boats to transport swine or piglets from farm gate to the purchasing points. There are three level of investment capital of collectors: less than 10 millions VND; from 10-20 millions VND and more than 20 millions VND. Part of these investment capitals will be used to buy boat and motorcycle as main transportation means in MD.

Table 5: Transportation means of collectors

Means	%
- Motorcycle	60.00
- Boat	33.33
- Motorcycle and boat	6.67

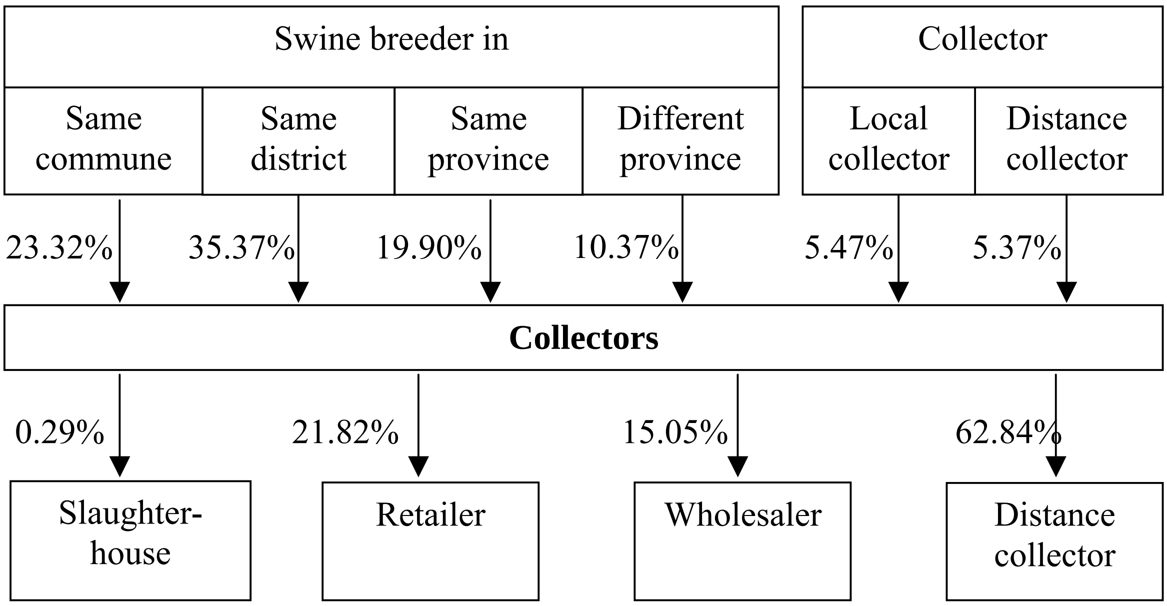
Source: survey (2005)

There are three kinds of collectors (1) collectors buy swine from breeders then slaughter and sell pork to retailers. (2) Collectors buy swine from breeders then re-sell to retailers. (3) Collectors buy swine from breeders then re-sell to other collectors from other places/provinces. The number of collecting swine will depend on the months of year and demand of market. The average number of swine collected is 5 heads per day. In most of the cases, collectors use family labors. Sometimes they also hire labor forces, especially in Tet holiday season.

Inflow operation of collectors

The activities buying swine of collectors are described in figure 4 that indicates there are 35.37% of swine that bought directly from breeders living in the same district, and 23.32% from whom living in the same commune. Besides buying directly from producers, collectors also buy swine from the producers outside of province (10.37%) and from other collectors too.

Figure 4: Inflow and outflow operation of collectors



Source: survey (2005)

Outflow operation of collectors

The swine bought by collectors will be re-sold under the three various forms (1) collectors will slaughter swine then sell pork to retailer (accounting for 36.87%), (2) collectors will re-sell swine to slaughter-houses (3) collectors will re-sell swine to distance collectors (occupying 62.84%).

c. Slaughter house

The main activity of slaughter house is slaughtering swine before delivering them to the consumption market. Therefore, slaughter-house participates in swine distribution channel as a slaughtering service. There are two kinds of slaughter-house: small scale slaughter house and centralized slaughter-house. To small scale slaughter-houses, the owners are also collectors. They buy swine from breeders or collectors then slaughter and sell pork to retailers. They have enough space to keep swine when they buy swine. In doing business, slaughter house will pay the fee of checking quality to local Veterinary Agency (8,000VND/head). In some cases, slaughter-houses also do business as wholesalers and distribute pork to other key players in marketing channel such as retailers, restaurants, eating houses and final consumers. Through the survey, most of slaughter-houses' managers are men.

To centralized slaughter-house, the slaughtering scale depends on investment capital of owner or local government. Their activities are slaughtering services with the slaughtering fee are 10,500 VND and checking quality of swine. Their main customers are retailers, collectors and others (household, restaurant, etc.).

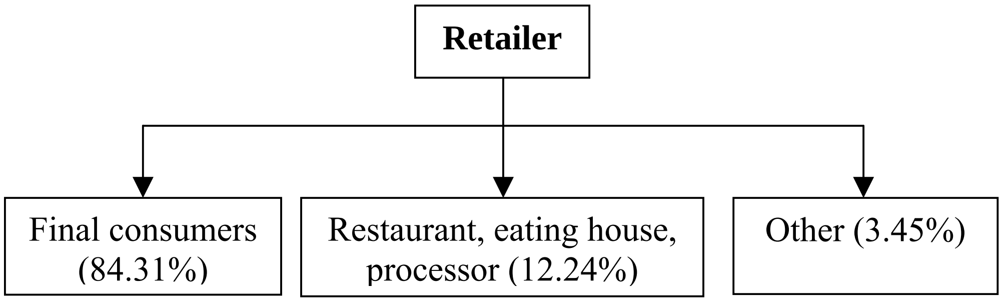
d. Traders (wholesalers, retailers)

Wholesalers: who bought a large amount of products from farmers or collectors and then sold to retailers.

Retailers: Who bought a little amount of products from wholesalers and sold directly to final consumers or industrial consumers, who own restaurants or meal shops.

As going shopping is the main function of Vietnamese women. That is why most of retailers are women (more than 85%). They usually buy pork from slaughter-house, collectors and wholesalers. As mention above, most of retailers play a role as collectors, they buy and slaughter swine in slaughter house then sell pork in the market. The majority customers of retailer are final consumers (accounting 84.31%). Next consumer groups are restaurants, eating houses and processors (accounting 12.24%).

Figure 5: Outflow operation of retailers



Source: survey (2005)

The majority of these consumers live in same hamlets or communes or districts inside the province. In which, the ratio of consumers living in same location is the highest.

e. Processors

Processors who own transport facilities, and mainly bought swine from collectors coming from inside and outside of the province and also bought from swine breeders. Some processors have a function as slaughter-houses. After processing, processors deliver processed products to supermarkets, eating houses and retailers.

Inflow operation

In production process, processors either buy pork from slaughter house /retailers (occupying 73%), or buy half done products which were processed a part (accounting 27%). Most of them must pay by cash when buying products from sellers, the remaining will pay some days later.

Outflow operation

Processing products are grilled chopped meat, pate, etc…and sold to final consumers, retailers, wholesalers and supermarkets inside and outside of province. The form of payment between processors and buyers is mainly by cash or credit after selling products.

7.2.2 Competition in the Mekong Delta swine market

a. The existence of entry and exit barriers

Control of essential resources

According to the survey, raising swine techniques are not really difficulty. There are many sources to support raising swine techniques such as from television, radio, books, and magazines, etc. Breeders can also learn from their neighborhoods, from breeding engineers or from themselves. Another issue related to raise swine is labor force. According to statistical yearbook, the average number of household members in countryside is 6 persons. Comparing with breeder households, the average members of household is 5.5 persons; the result of survey also showed that almost households do not really get difficulties in labor force (lack of labor force was ranked at 7, in which 1 is the most difficulty). Therefore, it is concluded that there is enough labor forces to raise swine in the case of new comers. In short, raising techniques and labor forces are not really a big barrier for new breeders to entry breeding swine industry.

Capital requirement

Thousands of swine breeders in the MD are small scale producers; they raise average 15 heads per time and 2-3 times per year. Around 58% of swine breeders raise swine because of using by products in agricultural production or using waste food in order to increase income. Usually the new breeders will start to raise swine with two or three piglets. Therefore, they do not need to have much money to invest in raising swine and everyone can jump into raising swine easily with a limited of money. At the first stage, they only spend money on buying piglets, raising swine facilities and feeding cost. During breeding stage, they will feed swine by waste food, and by products in agriculture, etc. So capital requirement is not a high barrier to enter swine industry.

Marketing advantages of incumbency

There are thousands of swine collectors in the MD. Therefore, swine breeders are not much worry about the buyers. The important thing is the fluctuation of market price. When swine price is growth up, many breeders start to raise swine or raise swine more than usual, as the result there are surplus supply and market price of swine goes down. Then many breeders stop or reduce number of raising swine. After that, there is shortage supply and leads the growth of market price. The fluctuation of market price was ranked the first difficulty issue in raising and expanding swine production scale by the swine breeders (see table 6). Moreover, the fluctuation of market price is influenced by other factors such as bird flu, swine diseases, and etc. To stabilize the profit, the breeders usually sell swine to familiar collectors. In the case of surplus supply, there are a few collectors who buy swine from new swine breeders with the low price. So market information is very important to the swine breeders, it will help them to decide whether or not to raise swine and how many swine should be raised.

In short, from analysis above we can conclude that the market environment in raising swine is the competitive market. The existence of entry barrier to raise swine is low as: (1) households can raise easily a few heads of swine with their available labor forces; (2) it does not require much on investment capital as well as raising techniques and marketing advantages.

However, during production process and expanding production scale, swine breeders still get some difficult issues as showing in table 6.

Table 6: Difficult issues in raising and expanding swine production scale

ISSUES	RANK	Percentage
- Fluctuation of market price	1	25.4
- Lack of capital	2	23.6
- Swine disease	3	19.2
- Lack of raising technique	4	13.5
- Lack of market information	5	4.3
- Few of buyers	6	3.8
- Lack of labor force	7	2.4

Source: survey (2005)

Among those factors above, fluctuation of market price, lack of capital and swine disease are three main issues that strongly affect to the raising and expanding swine production scale. Lack of raising techniques and market information are ranked at the fourth and fifth positions. If they expand production scale, they need to have more knowledge about raising techniques and market information to make sure that they can raise and sell their swine with the high value.

To the traders, the existences of entry and exit barriers are low, too. Retailers just need a little bit capital to have a small shop for selling pork and they are easily to stop their business if their business has trouble or loss. However, retailer is the second risk player (the most risk player is swine breeder). The retailers take more risk because there are many substitute products on the market such as fish, eggs, etc. and the price of these substitute products are very competitive with pork price. Moreover, if retailers can not sell all products within day, they will be lose as they can not store and sell on tomorrow. These are some difficult issues that affected to the traders' activities (see table 7)

Table 7: Difficult issues in traders' activities

Factors	Rank	Percentage
- Fluctuation of market price	1	28.3
- High tax rate	2	19.4
- Lack of capital	3	16.9
- High competition	4	14.5
- Business license	5	11.2
- Lack of information	6	8.8

Source: survey (2005)

Fluctuation of market price is the most difficult issue in the activity of traders. Second is a high tax rate. In few years ago, traders did not need to get business license, so there was no tax payment. But from year 2005 high tax rate will influence to the profit of traders and the competition among traders will increase too. Lack of capital is the third difficulty of traders; they need more money to buy swine. Moreover, consumer price is going up day by day and the value of money goes down, these things had effected to trader's capital.

b. The assortment of product quality

The selling price of swine will be different base on the differentiation among varieties of swine. In general, there are three kinds of swine variety in MD. These are local swine variety, hybrid swine variety and 100% of foreign swine variety. More than 50% of swine breeders use foreign swine varieties such as Yorshir Large White, Landrace, Duroc, etc. which have great advantages of high productivity, high value and growing quickly (180-270 kg per sow, 280-350 kg per boar, 100-130 kg per porker), etc. Swine breeders clarify swine into many kinds in which foreign swine varieties are porker class 1. Table 8 will show the clarification of swine when they were sold to the market.

Table 8: The clarification of swine   Unit: kg

Clarification	Weight for selling
Piglet	12 – 15
Swine	30 – 40
Porker class 3	80 – 90
Porker class 2	91 – 99
Porker class 1	100 –125

Source: survey (2005)

According to breeders, they prefer to raise porker than piglet as the price of porker is more attractive. Among porkers, porker class 2 is easy to sell as porker class 2 has much lean meat and collectors prefer to buy this kind of porker. To the collectors, swine price will depend heavily on its weight, variety and healthy. The different price between porker class 1, class 2 and class 3 are VND500 per kg.

According to retailers, slaughtered swine will be classified into many kind of products base on swine functions such as pork, born, liver, swine's triples, and etc. The quality of pork will base on the color of meat, the amount of fat and free of disease.

In short, the swine differentiation is not really high. Swine products are rather homogenous.

c. The distribution of market information

The distribution of market information refers to the availability of relevant market information. Table 9 shows the awareness of market price from each actor in the distribution channels. Around 80% of actors are easy to access and obtain market information. Very few actors get very difficult to access market information. Those results show that lack of access to market information is not a barrier to enter the market, since most of information related to swine trading such as qualities signal, form of delivery and payment, buying-selling prices, consumer behavior, regulation, etc… are easy to obtain

Table 9: Access to market information of each actor in the distribution channels

ACTORS	Percentage of response to different levels (%)		
	Easy to obtain	Sometimes difficult	Very difficult
Breeder	80.5	18.1	1.6
Collector	86.4	12.5	1.1
Slaughter house	78.9	19.6	1.5
Retailer	82.7	17.3	0.0

Table 10: Sources of market information

Sources of information	**Percentage of response to different sources (%)**		
	Breeder	**Collector**	**Retailer**
- From media sources (newspaper, radio, TV)	34.85	29.41	33.33
- From family, relative, other producers	30.30	11.76	13.33
- From middlemen in marketing channels	25.38	29.41	53.34
- Others:	9.47	29.41	0.00
Total	100.00	100.00	100.00

Source: survey (2005)

Sources of market information are described in table 10. More than 65% of swine breeders get market information through two main sources: media sources; and relative and other producers. To the collectors and retailers, they access to market information mainly from media sources and from middlemen in the marketing channels. They usually meet other traders in slaughter house and share market information together. However, a negative consequence of the many sources of market information is that some information is incomplete and cannot be trusted.

7.2.3 The process of swine price formation

In general, price was set up base on market power, bargaining skills, quality of product, volumes of sales per transaction and sales location.

Table 11: Output – price – formation

Price formation	Percentage of response by different actors	
	Collector	Retailer
1. Buyer	2.94	3.57
2. Supplier	41.18	39.29
3. Negotiation between buyer and supplier	55.88	57.14
Total	100.0	100.0

Source: survey (2005)

Table 11 shows the percentage of response by different actors through the question "who is setting the price". The figures in this table indicate that more than 55% of the case is the negotiation between buyer and supplier. Buyers do not have strong market power to determine the buying price. In the other hand, suppliers have a power to set the selling price (around 40% of the cases). To the case of collectors, normally collectors will offer the buying price then swine breeders will negotiate with collectors about the price and selling requirements. In some cases, collectors will offer price and breeders sell swine if they accept that price. Similarly, the price of swine that collectors re-sell to other collectors and slaughter houses will base on the negotiation between buyer and seller (55%). In doing business, the risks of collectors are less as they are middlemen. They just buy and re-sell immediately swine within one or two days because of feeding cost and losing weight, etc.

With regard to bargaining skills, the process of bargaining in the swine market usually concerns negotiation on price per unit. As shown in table 11, the price per unit is fixed by some retailers (39%). Final consumers can bargain to get the good price or reasonable price. Moreover, the process of bargaining in the swine market depends on swine breeders' prestige and good relationship with buyers.

Table 12: Some criteria affect to the process of setting price in 2005

Criteria	Rank
- Good swine variety, high productivity	1
- Weight or volume of sales per transaction	2
- Time (seasons)	3
- Payment by cash/credit	4
- Swine breeders' prestige	5
- Good relationship	6

Source: survey (2005)

In table 12, good swine variety and high productivity will strongly affect to the setting price process. These criteria show the quality of swine. To the collectors, the quality of swine will depend on swine variety, high productivity and free of disease. Weight or volume of sales per transaction is also paid attention in the process of setting price. To the small scale production breeders, they usually raise swine less than 10 heads. When they harvest, they will sell all of swine at the same time and the collectors will deliver swine within 5 days. Moreover, when swine grow up and reach suitable weights, the breeders will sell them as soon as possible. The reason is that mature swine can gain more weight and get fat if breeders still feed them. As the result, it will effect to the income of breeders.

Buyers will pay to swine breeders directly by cash, credit and normally they will pay to swine breeders after one or two weeks (table 13). Finally, sales location will directly effect to the price of swine as transport costs are significant.

Table 13: The payment way of buyers to swine breeders in 2005

The payment way of buyers to swine breeders	Percentage	
	Porker	Piglet
- Pay advance buying swine from breeders	5.83	1.49
- Pay by cash	7.77	16.44
- Pay after one or two weeks	86.41	82.07

Source: survey (2005)

Normally, swine breeders will make a call to the buyers if they really need to sell swine. In some cases, traders/slaughter houses will call to swine breeders or visit their houses to negotiate and sign purchasing agreement (table 14).

Table 14: The communication way of swine breeders in 2005

The communication way of swine breeders	%
- Swine breeders call to buyers	85.98
- The buyers visit swine breeders	13.08
- Visit through raising schedule	0.93
Total	100.00

Source: survey (2005)

To the collectors

Table 15: The ways to collect selling information of collectors in 2005

The ways to collect selling information	%
- Get calls from breeders	48.21
- Connect with breeders	25.00
- Make advance arrangement with breeders	10.71
- Look for randomly	7.14
- Get information through other people	5.36
- Other	3.57

Source: survey (2005)

Half of activities of collectors base on the familiar with swine breeders; they just wait for the call from breeders. The quality of swine that buys from familiar breeders is more stable. However, there are several ways that collectors used to collect selling information from breeders (table 15).

Table 16: Some other criteria to decide buying price of collectors in 2005

Criteria	%
- The variety of swine	54.72
- The number of selling swine	11.32
- The distance	9.43
- Other: market demand	24.53

Source: survey (2005)

There are other criteria that will effect to the process of setting price of collectors (table 16). With the different variety of swine, the buying price is also different. For example, the buying price of swine class one will be higher than the buying price of swine class two 50,000 VND/100kg and the buying price of swine class II will be higher the buying price of swine class three 50,000 VND/100kg. Therefore, the variety of swine is one of the most important criteria to determine buying price.

To retailers

Most of retailers buy pork from slaughter-houses. Some retailers play a role as collectors that buy swine from breeder and bring to slaughter-houses for slaughtering. In some cases, the retailers have their on slaughter-houses, so they do not buy pork from other sellers. The price setter in this case depends much on the negotiation between slaughter-houses and retailers. Similarly, the buying price of retailers will depend on the proportion meat of swine, weight, swine variety and time, etc.

7.2.4 Government policy, regulations and informal trade in the swine market

a. The role of the government in swine market

The government has encouraged developing swine industry as the average GDP is from 7-8% per year; the Vietnamese average consuming meat, egg, milk per capita equal 40%-60% of countries in region (50-70%). Therefore, the demand for consumption high quality meat and food also increase day by day.

In recent years, Agriculture Department in each province has been improved in terms of controlling and managing animal husbandry, especially in swine industry. This Department manages the organization system from the highest to lowest level. In every year, the Veterinary Agency province and districts conduct statistical analysis of swine population in each household, training new techniques and management practices to each household on raising boar. This is a program for improving productivity and quality of swine production.

Moreover, the Extension Agriculture Department network to each level of organization system supply information such as breeding the right animals that are suitable with each region and introduce techniques on how to manage and raise swine, especially on how to prevent and control epidemic diseases effectively. In 2004, Extension Agriculture Departments have been built extension agriculture systems from central government to local government; improve knowledge and skills to extension staffs, especially to local extension staff. Now there are more than 22,000 extension staffs in Viet Nam; 520 districts have extension agriculture departments; more than 7,140 communes have extension staffs. In the future, Ministry of Agriculture and Rural Development and Vietnamese Extension Agriculture Center will have cooperation activities to attract foreign investment like investment projects from ADB and WB to develop stronger extension agriculture activities.

b. Major policy and regulations changes to promote swine trading

Breeding and Quality control policy

The government has promoted the breeding system to develop high-level exotic bloodlines and crossbred animals for dispersal. Ideally, this should be achieved through a pyramid breeding system disseminating high quality animals into the general livestock population**.**

- Decision 14-CP (March 19, 1996) on the management of domestic animals.
- Decision 68/1998/QD-TTG (March 27, 1998) allowing the experimental establishment of state enterprises in training as well as research institutions.

- Decision 225/1999/QD-TTG (December 10, 1999) approving the program of plant seeds, livestock breeds, and forest tree seeds in the 2000-2005 period.
- Decision 166/2001/QD-TTG (October 26, 2001) on a number of measures and policies to develop swine farming for export in 2001-2010.
- Session two-chapter one of Decision No 34/2001/QĐ-BNN/VP (March 30, 2001) - Minister of Agriculture and Rural Development about "Conditions for doing business on planting, breeding variety and cattle-feed"

Currently, there are more than 27 research institutions, 11 centers for producing variety. Especially, in MD there is a few private enterprises satisfied the conditions to operate "breeding variety" business. With these numbers of research institutions and centers, there are not enough varieties to supply for production with high competition in local and foreign markets. They only satisfy 30% market demand. As the result, it effects to the fluctuation of the variety price. So the government should have policies to develop more high breeding variety centers in each district or commune.

Similarly, according session two-chapter two of Decision No 34/2001/QĐ-BNN/VP on March 30, 2001 - Minister of Agriculture and Rural Development about "Conditions for doing business on slaughtering service", slaughter-houses must satisfy the conditions in this session and under management of Veterinary Division.

After government issued this decision, the number of swine has been increased rapidly as farming households in rural areas have many choice in choosing swine varieties and the number of slaughter house s have increased too.

Moreover, the decision on July 1, 2004 about "Breeding variety" focuses on improving administrative works, not adds any management division into the system so that the administrative system will not be too complex. Encourage people discover new breeding varieties with high quality, productivity, and economic efficiency; especially encourage farmers to do research.

Feeding policy

Commercial feed production has increased substantially from 1988 up to the present, and the share of commercial feed consumption in total grain based animal feed consumption has grown from less than 1 percent to about 27 percent (MARD, 2002). While commercial feed quality, supply, and demand are increasing and prices are slowly falling, the industry is affected by a number of problems constraining the development of efficient feed industry and affecting the adoption of commercial feed by producers (Nam, 2003). Animal feed policies were established that aimed to develop both agricultural and industrial feed for swine, livestock and animal industries. For example, Decision 166/2001/QD-TTG (October 26, 2001) on a number of measures and policies to develop swine farming for export in the 2001-2010 period.

Until now there is Decree No 15 of government on March 19, 1996 about "Managing animal feeds, and Circular 08/1996, guiding the implementation of decree 15-CP" but there are still many cattle-feed import unofficially, the quality of cattle-feed is bad. The quality information on brand name is so different with what the quality of cattle-feed is. So these things affect directly not only to the quality of swine but also to production cost as the feeding cost occupied a large proportion in production cost.

Animal health and veterinary services policies

Current policies for animal health and veterinary services are many and varied. However, there are five major animal health and veterinary services policies in the livestock sector established by the central government.

- Decree 93/1993 on implementing the sub-law of 1993, and addressing procedures and regulations on animal health.
- Directive 403-TTG (July 11, 1995) on improving the supervision of animal slaughter and the control of veterinary hygiene for animal based foods.
- Decision 08/1999/QD-BN-TCCB (January 12, 1999) on the organizational system of border-gate animal quarantine stations.

- Circular 53/2001/TT-BTC (July 3, 2001) guiding the regime on the collection, remittance, management of the use of charges and fees in the veterinary service.

Extension and agricultural research policies in the livestock sector.

In general, there are three main articles of legislation covering the livestock sector pertaining to research and extension services.

- Decision 14-CP (March 19, 1996) on the management of domestic animals.
- Decision 68/1998/QD-TTG (March 27, 1998) allowing the experimental establishment of state enterprises in training as well as research institutions.
- Decision 166/2001/QD-TTG (October 26, 2001) on numbers of measures and policies to develop swine farming for export in the 2001-2010.

Commercialization policies in the livestock sector.

Swine production is one of the livestock that offers the opportunity to capture higher value added per hectare than crop-based agriculture. Swine production plays an important role in providing a large share of cash income to farm households, which in turn can have strong multiplier effects on local communities. Thus, the commercialization policies were enacted to promote and enhance market function in the livestock sector.

- Directive 22/2000/CT-TTG (October 27, 2000) on the strategy of developing the export and import of commodities and services in the 2001-2010 period.
- Decision 02/2001/QD-TTG (January 2, 2001) on policies of investment support from development assistance fund for exports production and processing projects and agricultural production projects.
- Decision 46/2001/QD-TTG (April 4, 2001) on management of export and import goods in the 2001-2005 period, and Circular 62/2001/TT-BNN (5 June 2001) guiding the export and import of goods subject to the specialized management by the agriculture service under this Decision.

- Decision 65/2001/QD-BCT (June 29, 2001) on rewards based on export turnover of rice, coffee, pork and canned vegetables and fruits in 2001.
- Decision 166/2001/QD-TTG (October 26, 2001) on a number of measures and policies to develop swine farming for export in the 2001-2010.

Marketing and distribution policies in the livestock sector.

Vietnam has transited to open economy market that operates under competitive mechanism. But its marketing system and distribution have faced some issues that limited market function.

Decision 166/2001/QD-TTG (October 26, 2001) on "A number of measures and policies to develop swine farming for export in the 2001-2010 period" is one of the main policies was established to stimulate the livestock market to function well.

Financial Institution

The importance of financing has been proved not only for swine production, but also for other commodities and industries as well. There are several institutions or programs, which can help by providing the financial needs of small and medium scale enterprises. The Agriculture and Rural Development Bank is the primary financing institution that engages in agriculture which allows the farmer loan with reasonable interest rate without distinguish level of breeding. The Agriculture and Rural Development Bank system has agencies in city, districts, villages and hamlets. This is a strongest financing institution in agriculture. However, in recent year the process of delivering money from the bank is slowly because of the form and many procedures of credit and fixed amount of money that can be loan.

7.2.5 Conclusion on analysis of market structure

This chapter describes the framework within which the swine actors operate. Different types of market intermediaries are illustrated and the existence of marketing channels is presented. Base on the elements of market structure, we can conclude that the swine market places in our study are competitive. With regard to competition: (1) barrier entry and exit are low; (2) product differentiation is not a major issue in the market; (3) information is accessible for actors in channels, the main sources of information are public media and other middlemen; (4) the formation of price does not depend strongly on supplier or buyer, it depends on the negotiation between buyer and supplier. The formal rules and regulations of the government are important to swine market system. Changes in regulations and policies have promoted swine trading. In short, all elements of market structure have good function; there is no room for individual behavior in the swine market.

7.3 The effectiveness of swine marketing channels

The swine marketing channel performs three main functions such as exchange functions (ordering, assembling, negotiation, market information, payment and distribution); physical functions (storage, processing, transport); and facilitating functions (grading, financing).

To the collectors, they buy swine from swine breeders and transport to slaughter house with amount of swine from 1 to 13 heads for slaughtering. On the average, the traders sell 350kg slaughtering swine per day. Swine are clarified in buying process but after slaughtering, swine products are clarified based on the proportion of meat and fat. To the retailers, they sell slaughtering swine in the wet markets by clarifying slaughtering swine into many kinds such as pork, liver, fat, stomach, etc. They sell more than 100kg per day to final consumers, restaurants, eating house and etc. and try to sell them within a day as slaughtering swine can not be stored for the day after.

In swine marketing channel, however, the market information is not performed well as lack of market information system in channel. Actors can access market information as mention in previous sections but the trust of information is low and sometimes the information does not update daily. Moreover, actors in swine marketing channel also get difficulties in financing. They lack of money for their businesses expansion.

To the non-centralization slaughter house, they will keep non-slaughtering swine in the pigsty with the average losing weight of 3% per night. Normally, the keeping time is less than two days accounted 57.5%; from 2-4 days accounted 36.3% (table 17).

Table 17: The keeping time of non slaughtering swine

Time	Percentage (%)
- Less than 2 days	57.5
- From 2-4 days	36.3
- More than 4 days	6.2
Total	100.0

Source: survey 2005.

To the retailers, most of input is from slaughter house. There is a half of retailers contact and buy slaughtering swine directly from slaughter house. Therefore, the retailer plays an important role as a collector that buying swine then slaughtering them at slaughter house, as well as retailer. Because of specialization characteristics, making order advance was not used much by the retailers as they were afraid of unable to consume all products.

Table 18: The payment way of the buyer

Customers	Pay by cash	Pay by credit
1. Final consumer	84.70	15.30
2. Eating house, restaurant	21.30	78.70

Source: survey 2005

According table 18, there is a large proportion of selling slaughtering swine by credit to eating houses and restaurants performed by the retailers. This issue creates difficult problems in running business such as collecting money slowly, creating a large amount of debt and etc. As a result, there is a lack of capital for expansion business of retailers and they will take more risk due to unable to collect debt from customers. To reduce the risk, the retailers usually sell by credit to the prestige customers, account 44.55%. Moreover, the sellers will determine the payment time and how many percentages that sellers can sell by credit to the customers.

The swine marketing channel evolves because end-users (both business-to-business buyers and individual consumers) usually prefer to deal with a marketing channel that provides higher service outputs such as bulk breaking, spatial convenience, waiting and delivery time, product variety.

Bulk breaking: the actors in swine marketing channel can buy with different sizes, and weights. Especially, the end-users can buy swine product with desired (possibly small) number of units of pork, liver, etc. even though they may be originally produced in large, lot sizes. Usually the pork will be consumed most (45%), next was borne (17%) and others.

The spatial convenience factor of the service output: the actors in swine marketing channel used several kinds of transportation such as boat, motorcycle, van, etc. According to the survey, wholesale and retail shops have chosen good locations to do business so that they can sell directly to consumers effectively. Good locations where their shops can offer convenience for transport, loading and un-loading the product (space for parking, near the main roads or canals), or at a central place that customers can easily visit in order to attract more customers. Like in the case of collector, around 60% of collectors used motorcycle or van to transport swine. Around one third of collectors used boat as main transportation.

Waiting and delivery time: the end –user is no need to wait much time to buy swine products; they can easily buy swine products from retailers. To the slaughter houses, they operate from 1:00AM – 3:00AM and from 2:00PM – 3:00PM so that their customers can get more benefit from these time schedules. In most of the cases (80%), the transaction and payment between actors in swine marketing channels are by cash. The remaining percentages of payments are paid in advance or paid in several times.

In general, the swine marketing channel is rather effectiveness; however, it still needs to increase the effectiveness of market information and transportation systems.

7.4 Value-created in the swine distribution channels

7.4.1 Analysis of marketing cost and margins

Farmer (Swine breeders)

The production cost of swine breeders includes swine variety, feeding, veterinary, labor costs and other costs. As most of swine breeders use their own capital, so in this part the production cost will not include interest rate.

Table 19: Swine production cost

Costs	Amount (VND/Kg)	Percentage (%)
- Feeding (purchase)	6,522.17	49.5
- Swine variety	4,731.42	35.9
- Family labor	1,049.39	8.0
- Feeding (own)	419.16	3.2
- Electricity, water	172.18	1.3
- Veterinary	145.45	1.1
- Pigpen	133.90	1.0
- Other	14.31	0.1
Total cost	**13,187.98**	**100.0**
Selling price	17,192.39	
Profit	**4,004.41**	

Source: survey (2005)

Among production costs, feeding cost occupied the largest proportion. One of the reasons why the production cost increased properly as the price of feeding increased remarkable, 230,000VND/25kg for example. Next one was swine variety cost which depended on the fluctuation of harvesting swine price. The labor cost was family cost and breeders did not hire labor as they just raise a few swine and not take much time to take care.

On average, swine breeders earned 4,004VND/Kg on harvesting swine. Actually if family labor cost is omitted, the profit of swine breeder will earn higher than 4,004VND/Kg.

Collectors

In doing business process, the cost of collectors include mainly on labor and transportation cost. However, if collectors buy and slaughter swine by themselves, the cost will be higher. Table 20 will show detail the marketing cost of collectors.

Table 20: The marketing cost and profit margin of collectors

Unit: VND/kg

Items	Cost
- Labor cost	282
- Transportation cost (buying and selling)	197
- Quarantine fee	102
- Tax	82
- Electricity and water costs	24
- Others	107
- Total cost	**794**
- Buying price	18,125
- Selling price	23,500
- Marketing margin	5,225
- Profit margin	4,431

Source: survey (2005)

Base on calculation total cost above, if collectors buy and resell swine without slaughtering, they will earn 40.000 – 50.000 VND/100kg. If collectors slaughter swine by themselves, they will earn 70.000 – 100.000 VND/100kg.

Slaughter house

According to the survey, there is at least one or two slaughter houses in each commune of district. The scale of slaughter house will depend on the scale of market. The cost of slaughter house includes electricity and water costs, fuel, labor cost, tax and etc. To centralized slaughter-house, people will pay quarantine cost (7,000VND/head) and 10,000 slaughtering fee. To small scale slaughter-house, the cost will be presented in following table.

Table 21: The cost of slaughter house

Unit: VND/kg

ITEMS	AMOUNT
Total cost	**92,65**
Chemical	8,20
Fuel	26,16
Electricity and water	11,55
Labor	29,84
Environment fee	0,34
Tax	9,72
Others	6,84
Earning	108,96
Profit	**16,31**
Profit/Total cost	0,18
Profit/Earning	0,15

Source: survey (2005)

Retailers

On the market, products from swine are sold into 2 kinds: fresh meat and processing products. The fresh meats are sold by retailers in the wet markets or in supermarkets such as lean meat, liver, swine bone, etc. As pork is easily damaged, sellers try to sell them within a day. Therefore, if customers buy pork with a large volume, they will be discounted from 500 -1,000 VND/kg or will be sold with high quality pork. In some cases, the retailers deliver pork to customers' house.

The consumption pork also depends much on the day of month or year. For example, on January, July and October of China calendar, the consumption of pork is low as many people will not eat pork in these months because of their religions.

Table 22: The marketing cost of retailers Unit: VND/kg

Items	**Amount**
• Transportation cost	302.86
• Rent selling-buying ground fee	211.60
• Labor cost	204.33
• Tax	66.51
• Electricity and water fee	13.69
• Others	175.80
- Marketing cost	974.79
- Buying price	25,000.00
- Selling price	27,800.00
- Marketing margin	2,800.00
- Profit margin	1,825.21

Source: survey (2005)

Among the costs, transportation cost, rent buying-selling ground fee and labor cost occupied a large proportion. Here, the selling price of retailers is much higher than buying price. As the result, they get more profit as they need more effort to sell pork within a day, especially selling in the morning.

Table 23: Summary the marketing cost and profit margin of each actor in marketing channel

Unit: VND/kg

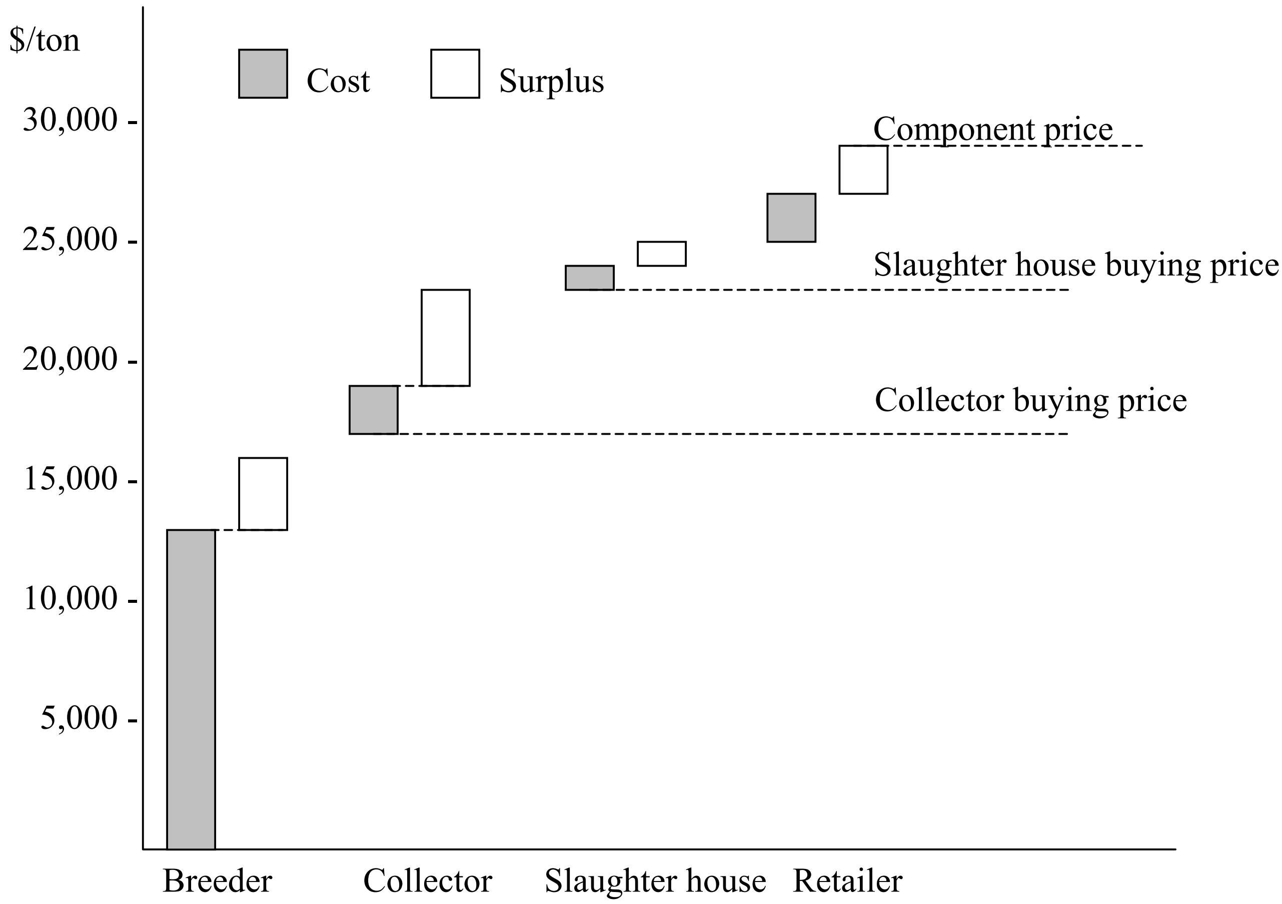
Actors	**Production/ buying price**	**Selling price**	**Marketing margin**	**Marketing cost**	**Profit margin**
	(1)	(2)	(3)=(2)-(1)	(4)	(5)=(3)-(4)
- Breeder	13,187.98	17,192.39	4,004.41		
- Collector	18,125	23,350	5,225	794	4,431
- Slaughter house	92.65	108.6	16.31		
- Retailer	25,000	27,800	2,800	974.79	1,825.21

Source: survey (2005)

In table 23 indicates that the marketing cost of collectors are highest but they have the highest profit margin among actors in swine marketing channel. Actually some collectors have their own slaughter-houses. That is why they can earn more profit like that. The second highest profit margin is swine breeders. In recent months, the price of harvesting swine has increased rapidly as people consume more on pork and can not consume poultry because of bird flu. The third is retailers. With the lower marketing cost, the profit margin of retailer is quite high and acceptable. The last one is slaughter-house. As mention in previous section, slaughter-house plays a role as slaughtering service. Although slaughter houses profit (VND/kg) is lower than other actors in distribution channel, they still get much profit because of slaughtering many swine per day.

7.4.2 The division of value – created in the swine marketing channels

Figure 6: Division of value – created in the production of swine industry



Source: survey (2005)

Figure 6 illustrates the division of value –created in swine industry. Swine breeder and collector capture a relatively larger proportion of value-created and earn high profit. However, the swine breeder gets the highest risk in raising swine. Slaughter house and retailer, by contrast, only capture the modest portions of the overall value-created. They are characterized by strong price competition and low profitability. To retailers, they also face with high risk because of two main reasons. First, there are many substitute products to pork; the customer has many choices to buy goods. Second, the retailers try to sell all their swine products within a day as they can not store and sell them in the day after.

Consider to the percentage of contribution in value-created, the highest percentage contribution in value-created is breeder sector (having highest production cost). They play an important role in swine marketing channel. However, their profit is lower than other actors (in the case of using Profit_Incremental cost ratio)

To be more detail, there are two ratio used to analyze the situation of distribution profit among actors in the channels:

$$\text{Profit margin\_total cost ratio} = \frac{\text{Profit margin}}{\text{Total cost}} \qquad (1)$$

$$\text{Profit\_Incremental cost ratio} = \frac{\text{Profit}}{\text{Incremental cost}} \qquad (2)$$

Table 24: The distribution profit among actors **Unit: %**

Ratio \ Actors	Breeder	Collector	Slaughter house	Retailer
Profit margin_total cost ratio	30.36	23.42	0.07	7.03
Profit_Incremental cost ratio	30.36	558.06	17.60	187.24

These ratios will show the relationship between profit margin and total cost (or Incremental cost) that each actor earns. If Profit margin – Total cost ratio is used to measure the distribution profit among actors, the swine breeder has the highest percentage, next one is collector. The third is retailer and the lowest one is slaughter house.

But if Profit_Incremental cost ratio is used to calculate, the highest percentage profit is collector (558%). Next one is retailer (187%). Breeder and slaughter house get low percentage. So the swine breeders spend more cost on production but get low profit even their risk in raising swine is high.

Base on information from table 24, it is very hard to withdraw the conclusion about the situation of distribution profit among each actor in the swine marketing channels. It is needed to have further information to support and evaluate like information related to risk assessment. The collector sector has high profit but there are low entry and exit barrier. So it is necessary to have a further research about this sector.

8. CONCLUSION AND RECOMMENDATIONS

8.1. Conclusion

The volume of swine has been increasing in recent years in MD. There are five key players in swine marketing channel: swine breeder, collector, slaughter-house, retailer and consumer. Most of the breeders are backyard raisers and produce with a small and medium numbers of swine level. Swine breeders can use many kinds of cattle-feed for raising swine as MD is the rich feed resource. Among production costs, the feeding and variety costs occupied a large proportion in production cost and effected directly to the income of swine breeders. Swine breeders get market information from newspapers, radio, TV; from family, relative; from middlemen in marketing channels; and from other sources.

The activities of breeders, assemblers and slaughterhouses are strongly affected by internal and external environment such as insufficiency of capital, lack of raising technique, seasonable factor, fluctuation of market price, competition, lack of market information and risks caused by epidemic diseases. Breeders also get many difficulties in expanding their operation. They sell their swine based on friendship, cash basic transaction and by sending message to the buyers; and the selling price will be strongly affected by swine variety, weight after harvesting and period of harvesting swine.

The government has played an important role in developing swine industry. It has issued positive policies to encourage developing swine industry such as breeding and quality control policies; feeding policies; animal health and veterinary services policies; extension and agricultural research, commercialization, marketing and distribution policies in the livestock sector.

In public sector, breeders are strongly supporting and getting benefits from Provincial Agriculture Department, Encourage Agriculture Center, and local government policies to develop swine industry. In general, the most problematic subsystem is distribution and marketing sector. These problems are market access problem, market information constraint. It is hard for swine producers to collect market information that may result in low market power of swine producers.

In doing business, collector is one of the key players in swine marketing channel that get the highest profit margin. Next one is swine breeders, then retailer and slaughter-house. Although the swine marketing channel is rather effectiveness, it still needs to improve the market information and transportation systems.

8.2 Recommendations for further researches

To increase the effectiveness of swine marketing channel as well as develop swine industry in MD. This study gives some suggestion for further researches. These are:

- To the breeder as well as other actors in marketing channel, they are able to access market information but sometimes the information is not trust and update lately. Therefore, it is necessary to conduct a further research to build market information system so that actors can access market information effectively.

- Moreover, there are many collectors that participate in swine marketing channel, it needs to have a research for establishing a new distribution channel in order to reduce the number of middlemen and improve the effectiveness of swine distribution channel.
- The current swine marketing channel is suitable with small scale production and local distribution. For the huge market like HCMC, it needs to have a large scale production and new marketing channel that are suitable and effectively. The further research is needed to conduct for this purpose.
- In the case of encouraging large production and high quality products for export market, it is needed to have further research about what policies and regulations should Government Issue to support and encourage large production and quality of product are satisfied to export in the foreign markets.
- In process of value creation, the proportion of feeding cost and swine variety cost are occupied a large part in total production cost. A research is needed to conduct in order to reduce these kinds of cost and improve swine breeder income.
- Related to the evaluation of distribution profit among actors, it is needed to have another research related to "risk assessment" among actors in swine marketing channel.

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