

Chapter 5

Summary of the Survey on Hog Slaughtering and Processing Firms in Henan and Jilin

1. Outline of Survey

1.1 Survey Implementation

The firm survey was conducted in two provinces of China by the Institute of Developing Economies jointly with the Chinese Academy of Agricultural Sciences (CAAS) and the local statistical offices in each province from March to June 2008. In each province, more than 100 firms were interviewed. The questionnaire was prepared by the authors of this report with the consultation of local statistical officers as well as livestock experts in CAAS. A total of 208 firms were interviewed in Jilin and Henan provinces.

We chose the pork industry for a variety of reasons. We were fortunate to be able to collaborate with livestock experts from CAAS in this study and we therefore chose a livestock commodity for the aim of this study. The poultry industry had suffered serious shocks resulting from bird flu and was difficult to study due to potential biases. Also, the government would be reluctant to provide information directly related to bird flu due to the continued concerns by the citizens and media. The price of pork has been fluctuating relatively highly and there are various questions facing the pork industry. Thus, we chose pork (or hog handling firms) as our commodity of focus.

The firm questionnaire included detailed questions primarily on the characteristics, finance, investment plan, cash management, transactions with financial institutions, marketing, procurement, and transaction with contract farmers. The questionnaire was drafted by the authors, pre-tested by local enumerators, checked by the field supervisor and then revised. We finalized the questionnaire according to the results of the pilot surveys and the feedback from the enumerators.

The firm survey was conducted at 103 firms in Jilin province and 105 firms in Henan province. These provinces were chosen from among the few provinces where the local statistical offices provided permission to administer a field survey by CAAS and where the local statistical office and its department that maintains the firm-related information was cooperative in conducting the firm surveys. Without their collaboration, the firm survey would not have been possible. The interviewed firms were selected by stratified random sampling from the list of firms obtained from the local government statistical offices. Stratified by size, we interviewed small, medium, and large firms.

1.2 Structure of the survey

In order to capture characteristics of the hog market in China, we conducted a survey in Jilin and Henan Provinces. The objective of the survey was to obtain information, such as price, quantity, and other related transaction issues, of hog slaughtering and processing firms.

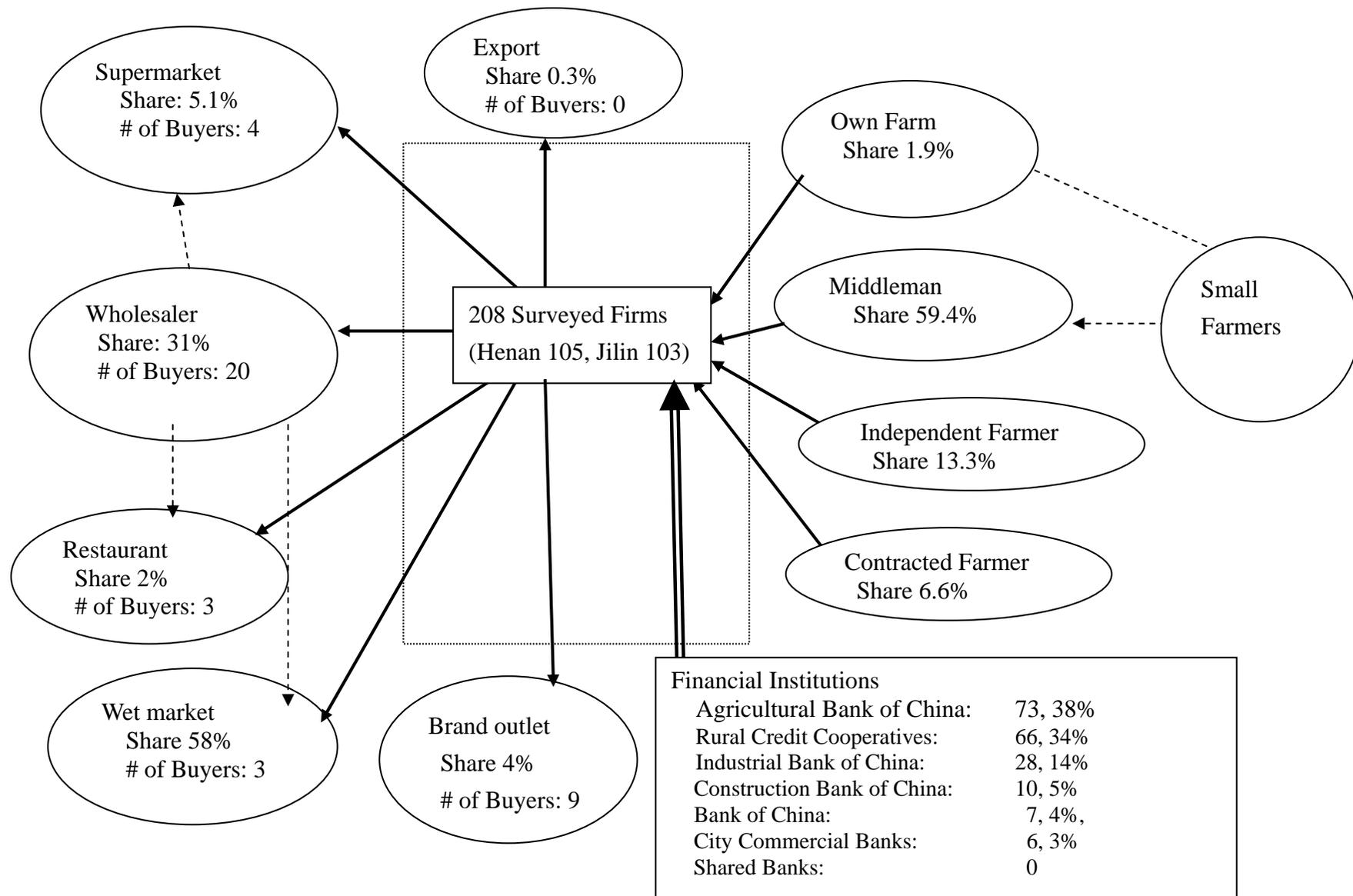
All pork marketed to consumers in China follows the same processes. Hogs are bred and produced by farmers, become pork via slaughtering firms and are then marketed to the consumers. The slaughtering firms are located between farmers and consumers and are related to whole types of pork supply chains, thus information from this phase of the process is ideal for capturing an overview of pork product chain. In addition, we are also interested in industry transactions with financial institutions.

Surveyed firms were asked to choose one concrete customers transaction partner among wholesalers, restaurants, supermarkets, and wet markets, and then from middleman, contracted farmer, and independent farmer. After firms made their choice, they were then asked to answer a number of questions related to pricing, quantity, and other transaction conditions with these partners. In addition to this, the surveyed firms were asked to answer regarding historical transaction records with financial institutions and basic information on firms' characteristics.

Figure 5-1 depicts the structure of information obtained through the questionnaire regarding transaction structures of the surveyed firms. Figure 5-1 also gives descriptions on number of transaction partners and their share of the surveyed firms. Hereafter, data on basic profiles of the firms, marketing,

procurement, and transactions with financial institutions are summarized without further comments.

Figure 5-1: Transaction Structure of the Surveyed Firms



2. Basic Profiles of Firms

Table 5-1 Basic Profiles of the Surveyed Firm

	Obs	Mean	Std. Dev.	Min	Median	Max
Year of firm establishment	208	1997	12.6	1954	2000	2008
Sale (0000RMB:2007)	208	15,608	152,628	0	103.7	2,184,458
Asset (0000 RMB:2007)	208	5,304	31,299	0	58	402,412
Share of controlling owner(%)	199	90.1%	19%	11%	100%	100%
# of employee	207	173	910.4	1	10	12,428
# of hog procured(=slaughtered:head)	204	58,987	230,665	21	4,000	2,267,888
Pork production voluem (ton)	200	4,638	17,736	1	300	153,563

Table 5-2 Sales, Assets, Profit, and Investment

000RMB		Obs	Mean	Std. Dev	Min	Max
Sales	2007	208	15,608	152,628	0	2,184,458
	2006	185	12,642	114,396	0	1,543,135
	2005	174	11,652	102,795	0	1,345,993
Asset	2007	208	5,304	31,299	0	402,412
	2006	187	4,632	29,015	0	370,420
	2005	173	4,217	27,938	0	350,060
Profit	2007	207	650	6,346	-2,228	89,067
	2006	199	540	5,106	-1,278	71,307
	2005	192	467	4,897	-2,239	67,170
Investment	2007	176	333	2,447	0	27,810
	2006	172	143	1,119	0	11,370
	2005	167	37	259	0	3,200

Table 5-3: Registered Capital and Capital Structure

Variable	Obs	Mean	Std. Dev.	Min	Max
Registered capital (000RMB)	205	1,150	6,332	0	60,600
Capital Structure (%)					
Share of Chairman cum General Mangers	206	45.8	47.3	0	100
Chairman	205	10.1	26.3	0	100
General Managers	206	15.7	33.8	0	100
Other managements	206	6.1	18.5	0	100
Employee	206	6.1	20.1	0	100
Foreign Investor	206	0.3	3.7	0	51
Customer	206	0.0	0.0	0	0
Supplier	206	0.0	0.0	0	0
Local government	206	7.4	25.8	0	100
State or Private company	206	6.3	24.1	0	100
Others	206	2.2	12.6	0	100

Table 5-4: Ownership Type

	Freq.	Percent
State or State controlling firm	22	10.6
Collective owned	10	4.8
Private owned	92	44.2
Foreigne owned	1	0.5
Limited company	41	19.7
Share limited company	12	5.8
Individual owned	10	4.8
Contract management	3	1.4
Others	17	8.2
Total	184	100

Table 5-5: Types of Controlling Owners

	Freq.	Percent
Chairman	24	11.9
Chairman cum General manager	53	26.4
Private outside firm	8	4.0
State company	22	11.0
Private company	46	22.9
Foreign Owned	2	1.0
Others	46	22.9
Total	201	100

Table 5-6: Corporate Reform Experience

Did the firm experienced corporate reform?

	Yes	No	Total
Year refomed	#	#	#
1990	1	0	1
1993	1	0	1
1995	1	0	1
1999	4	0	4
2000	5	0	5
2001	1	0	1
2002	9	0	9
2003	4	0	4
2004	2	0	2
2005	4	0	4
2006	2	0	2
2007	4	0	4
2008	1	0	1
?	1	84	85
Total	40	84	124

3. Marketing

Table 5-7: Sales Amount and Products Structure

	Obs	Mean	Std. Dev.	Min	Max
Sales amount in 2007	207	6,223	26,858	0.3	241,151
Share of products %					
Hog raising	201	1	8	0	80
Slaughtering and fresh meat	201	84	32	0	100
Freezed meat	201	12	27	0	100
Processed meat	201	2	10	0	100
Restaurant	201	0	2	0	30
Others	201	1	8	0	100
Number of slaughtered hog (0000 head)	205	6	23	0.0002	227
Prok production volume (ton)	171	2,337	8,258	1.4	73,555
Cleaned pork volume (ton)	200	4,638	17,736	1.4	153,563

Table 5-8: Number of Customers

Number of customers					
	Obs	Mean	Std. Dev.	Min	Max
Number of customer tota	206	46	142	1	1,580
Number of					
Wholsaler	207	20	84	0	920
Supermarket	206	4	22	0	300
Restaurant	206	3	17	0	180
Wet market	206	12	32	0	250
Brand outlet	206	9	46	0	515
Export	206	0	2	0	30

Table 5-9: Production Amount per Transactions

KG	Quantity of transaction with the transaction partner					
	With wholesaler			Supermarket		
	2005	2006	2007	2005	2006	2007
Obs	108	117	131	38	41	47
Mean	1,131,985	1,263,597	1,016,752	128,852	161,099	156,130
Std. Dev.	6,850,985	7,514,401	5,090,503	332,959	450,708	352,497
Min	375	450	400	450	420	440
Max	70,000,000	80,000,000	55,000,000	1,700,000	2,500,000	2,000,000

KG	Restaurant			Wet market		
	2005	2006	2007	2005	2006	2007
Obs	19	20	23	136	141	156
Mean	51,974	64,659	72,869	235,095	216,073	297,309
Std. Dev.	139,932	154,282	161,774	697,805	613,056	1,629,660
Min	700	1000	1000	100	150	220
Max	620,000	700,000	780,000	6,384,000	5,274,000	19,600,000

Table 5-10: Quality Control Criteria

Which items of quality control your firm is taking?

%	Yes	No	Total #
Hig fat ratio	14.9	85.1	208
Hig lean meat ratio	29.6	70.4	208
Low antibiotic	26.9	73.1	208
Low bacteria	20.9	79.1	208
Low heavy metal	16.8	83.2	208
Low meat increaser	32.9	67.1	208
Low dead meat	39.9	60.1	208
Others	4.6	95.4	208

Table 5-11: Brand, Trademark, and Quality Certification

Do your firm have any your own brand/trade mark/quality certificate		
	Freq.	Percent
1 No	110	56.7
2 Corporate brand	11	5.67
3 Trade mark	6	3.09
4 Quality certificate	41	21.13
1+3	1	0.52
2+4	2	1.03
3+4	2	1.03
2+3+4	21	10.82
Total	194	100

Table 5-12: Transaction Method and Transportation Cost Bearing

Transaction method	Wholesaler		Supermarket		Restaurant		Wetmarket	
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent
1 Slaughtering firm promotes	40	31.3	24	49.0	11	45.8	48	31.0
2 Firm's own outlet	5	3.9	1	2.0	2	8.3	8	5.2
3 Wholesaler comes the firm to buy	63	49.2	14	28.6	9	37.5	85	54.8
4 Long term Fixed contract	6	4.7	6	12.2	2	8.3	5	3.2
5 Others	10	7.8	1	2.0			8	5.2
Total	128	100	49	100	24	100	155	100

Table 5-13: Sources of Hogs Sold to Respective Customers

Sources of the hog sold to the customers	Wholesaler		Supermarket		Restaurant		Wet market					
	Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent				
1 Firm's own farm	1	0.8	1	2.0	1	4.2	3	1.9				
2 Contracted farmer	10	8.4	4	8.2	3	12.5	5	3.2				
3 Procurement team	18	15.1	10	20.4	7	29.2	23	14.6				
4 Middleman	50	42.0	20	40.8	3	12.5	83	52.5				
5 Farmers send hogs	7	5.9	3	6.1	1	4.2	8	5.1				
6 Not fixed	16	13.5	4	8.2	4	16.7	22	13.9				
	12	1	0.8	12	1	2.0	14	1	4.2	14	1	0.6
	14	1	0.8	14	1	2.0	23	1	4.2	23	2	1.3
	23	2	1.7	23	1	2.0	34	2	8.3	24	2	1.3
	24	1	0.8	34	2	4.1	45	1	4.2	34	3	1.9
	34	3	2.5	45	2	4.1				36	1	0.6
	35	1	0.8							45	3	1.9
	45	2	1.7							124	1	0.6
	46	1	0.8							235	1	0.6
	124	1	0.8									
	234	2	1.7									
	235	1	0.8									
	1234	1	0.8									
Total	119	100	Total	49	100	Total	24	100	Total	158	100	

Table 5-14: Trade Credit to Customers

Ratio of cash on delivery of the transaction in 2007 (%)						
	Obs	# of 100	Mean	Std. Dev.	Min	Max
%						
Wholesaler	129	104	94.8	12.7	40	100
Supermarket	47	33	89.2	21.3	20	100
Restaurant	23	12	82.3	26.2	10	100
Wetmarket	152	137	98.0	7.3	50	100

4. Procurement

Table 5-15: Share of Procurement Sources

	Obs	Mean	Std. Dev.	Min	Max
Number of Hogs procured	204	58,987	230,665	21	2,267,888
Share of procurement source (%)					
Firm's own farm	204	1.9	10	0	100
Contract farmer	204	6.6	20	0	100
Firm's procurement team	204	15.4	31	0	100
Middleman	204	59.4	43	0	100
Independent farmer	203	13.3	30	0	100
Other	203	3.5	17	0	100

Table 5-16: Number of Procurement Source Partners

Number of procurement partner					
Variable	Obs	Mean	Std. Dev.	Min	Max
Firm's own firm	208	0	0	0	0
Contracted farmer	208	97	507	0	5,000
Procurement team	208	11	109	0	1,570
Middelman	208	20	59	0	566
Independent farmer	208	14	52	0	500
Others	208	0	0	0	2

Table 5-17: Hog Procurement Volume per Transaction

Hog procurement volume per transaction					
	Obs	Mean	Std. Dev.	Min	Max
Contracted farmer					
2005	31	11,903	25,124	3	99,622
2006	33	14,042	31,455	3	141,612
2007	36	16,252	39,497	5	171,034
Independent farmer					
2005	62	3,716	10,606	10	51,000
2006	67	3,418	9,733	12	49,000
2006	71	3,187	9,048	4	45,000
Middleman					
2005	157	7,261	38,382	10	420,000
2006	168	7,613	40,177	10	460,000
2007	189	7,406	40,695	10	480,000
Pig raising days					
Contract farmer	36	146	25	100	200
Independent farmer	71	148	22	100	190
Middleman	184	156	21	110	289

Table 5-18: Transaction Method

Transaction method	Contracted farmer		Independent farmer		Middleman	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
1 Procurement by firm's team	11	30.6	28	38.9	13	6.8
2 Farmer send hogs to the firm	16	44.4	39	54.2	147	76.6
3 Middleman send hogs to the firm	2	5.6	4	5.6	28	14.6
4 Others						
1+2	7	19.4			4	2.1
2+3			1	1.4		
Total	36	100	72	100	192	100

Table 5-19: Timing of Inspection

Timing of hog inspection	Contracted farmer		Independent farmer		Middleman	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
1 No inspection	2	5.6	11	15.9	22	11.5
2 On slaughtering	8	22.2	22	31.9	70	36.7
3 Prior to slaughtering	26	72.2	36	52.2	97	50.8
2+3					2	1.1
Total	36	100.0	69	100	191	100

Table 5-20: Market of Hog Products of From Respective Procurement Sources

Market of the products made of the procurement sources								
	Contract farmer		Independent farmer		Middleman			
	Freq.	Percent	Freq.	Percent	Freq.	Percent		
1 Overseas	0	0	0	0	0	0	0	0
2 Supermarket	0	0	1	1.4	3	1.8		
3 Restaurant	0	0	0	0.0	0	0		
4 Wet market	8	22.9	27	38.6	83	49.7		
5 Brand outlet	1	2.9	2	2.9	2	1.2		
6 Wholesaler	7	20.0	11	15.7	25	14.97		
7 No fixed	8	22.9	17	24.3	28	16.77		
23	1	2.9	23	1	1.4	23	1	0.6
26	1	2.9	45	1	1.4	24	2	1.2
45	1	2.9	46	4	5.7	27	1	0.6
46	2	5.7	246	1	1.4	34	1	0.6
67	1	2.9	267	1	1.4	46	9	5.39
2456	3	8.6	456	1	1.4	56	1	0.6
2467	1	2.9	467	1	1.4	246	2	1.2
12356	1	2.9	2456	2	2.9	256	3	1.8
						456	4	2.4
						2345	1	0.6
						2457	1	0.6
Total	35	100	70	100			167	100

Table 5-21: Trade Credit with Procurement Sources

Ratio of cash on delivery of the transaction in 2007 (%)						
	Obs	# of 100	Mean	Std. Dev.	Min	Max
%						
Contracted farmer	36	29	95.2	17.4	0	100
Independent farmer	70	57	95.4	11.1	50	100
Middleman	190	161	96.0	11.9	20	100

5. Transactions with Financial Institutions

Table 5-22: The Financial Institutions with which Firms Transact

Name of Banks	Freq.	Percent
1 Industrial Bank of China	28	14%
2 Agricultural Bank of China	73	38%
3 Bank of China	7	4%
4 Construction Bank	10	5%
5 Share banks	0	0%
6 City Commercial banks	6	3%
7 Rural Credit Cooperatives	66	34%
8 Others	3	2%
1+2	1	1%
Total	194	100

Table 5-23: Access to Financial Institutions

Lag of Bank access	Freq.	Percent
Year of bank account opened - Year of firm's establishment		
-6	1	0.5
-3	1	0.5
-1	4	2.0
0	139	70.6
1	16	8.1
2	9	4.6
3	3	1.5
4	1	0.5
5	3	1.5
6	4	2.0
7	1	0.5
8	2	1.0
10	1	0.5
11	3	1.5
17	2	1.0
24	1	0.5
37	2	1.0
40	1	0.5
42	2	1.0
49	1	0.5
Total	197	100

Table 5-24: Firms Having Bank Accounts

Year bank account opened		
	Freq.	Percent
Not yet	10	4.8
1957	2	1.0
1958	4	1.9
1963	1	0.5
1965	1	0.5
1980	1	0.5
1987	1	0.5
1990	2	1.0
1991	1	0.5
1992	2	1.0
1993	5	2.4
1994	1	0.5
1995	10	4.8
1996	13	6.3
1997	8	3.9
1998	14	6.8
1999	12	5.8
2000	18	8.7
2001	11	5.3
2002	16	7.7
2003	18	8.7
2004	12	5.8
2005	10	4.8
2006	15	7.3
2007	17	8.2
2008	2	1.0
Total	207	100

Table 5-25: Investment Experience and Future Plan

	Have investment plan		Total
	No	Yes	
Investment plan in the last 3 years	#	#	#
No #	84	26	110
Yes #	42	43	85
Total	126	69	195

Table 5-26: Loan Default Experience

Have you met the customer defaulted in the last 3 years?			
	Obs	Mean	Std. Dev.
		%	
No	206	0.75	0.43
Delayed, but paid finally	206	0.13	0.33
Defaulted	207	0.12	0.33

Table 5-27: Investment Volume and Financing Structure 2007

Variable	Obs	Mean	Std. Dev.	Min	Max
Investment 2007	70	1,780	8,729	0	66,425
Financed amount (000RMB)					
Self capital	67	547	2,320	0	17,010
Bank loan	67	282	1,576	0	10,800
Interfirm borrowing	66	1	6	0	50
Borrowing from friend	65	16	84	0	605
Issuing securities	65	0	0	0	0
Outsider's investment	65	5	37	0	300
Government subsidy	65	2	14	0	113
Others	65	2	12	0	100
Share (%)					
Self capital	70	74.1%	39%	0%	167%
Bank loan	70	24.4%	77%	0%	600%
Interfirm borrowing	70	0.3%	2%	0%	13%
Borrowing from friend	70	6.9%	22%	0%	100%
Issuing securities	70	0.0%	0%	0%	0%
Outsider's investment	70	0.2%	1%	0%	12%
Government subsidy	70	1.4%	12%	0%	100%
Others	70	0.3%	2%	0%	20%

Table 5-28: Investment Volume and Financing Structure 2006

Variable		Obs	Mean	Std. Dev.	Min	Max
Investment	2006	53	1,461	8,877	1	64,206
Financed amount (000RMB)	Self capital	47	141	678	0	4,664
	Bank loan	32	172	825	0	4,663
	Interfirm borrowing	21	0	1	0	4
	Borrowing from friend	26	26	104	0	529
	Issuing securities	23	0	0	0	0
	Outsider's investment	23	0	0	0	0
	Government subsidy	23	0	0	0	0
	Others	23	15	73	0	350
	Share (%)	Self capital	53	77.4%	42%	0%
Bank loan		53	13.2%	34%	0%	100%
Interfirm borrowing		53	0.0%	0%	0%	0%
Borrowing from friend		53	13.2%	48%	0%	300%
Issuing securities		53	0.0%	0%	0%	0%
Outsider's investment		53	0.0%	0%	0%	0%
Government subsidy		53	0.0%	0%	0%	0%
Others		53	1.9%	14%	0%	100%

Table 5-29: Investment Volume and Financing Structure 2005

Variable		Obs	Mean	Std. Dev.	Min	Max
Investment	2005	43	1,061	6,005	1	39,387
Financed amount (000RMB)	Self capital	39	73	259	0	1,600
	Bank loan	28	70	301	0	1,600
	Interfirm borrowing	22	18	61	0	250
	Borrowing from friend	22	21	92	0	430
	Issuing securities	21	0	0	0	0
	Outsider's investment	21	29	133	0	610
	Government subsidy	21	3	14	0	63
	Others	21	0	0	0	0
	Share (%)	Self capital	43	66.1%	40%	0%
Bank loan		43	12.0%	26%	0%	100%
Interfirm borrowing		43	3.9%	15%	0%	75%
Borrowing from friend		43	5.5%	22%	0%	100%
Issuing securities		43	0.0%	0%	0%	0%
Outsider's investment		43	2.3%	15%	0%	100%
Government subsidy		43	12.6%	74%	0%	485%
Others		43	0.0%	0%	0%	0%

Table 5-30: Numbers of Applied and Approved Loans since Establishment of the Firm

Number of loan applied			Number of loan approved		
	Percent	Cum.		Percent	Cum.
#		%	#		
0	13	10.7	0	27	23.3
1	38	31.2	1	38	32.8
2	25	20.5	2	16	13.8
3	10	8.2	3	8	6.9
4	2	1.6	4	2	1.7
5	6	4.9	5	3	2.6
6	6	4.9	6	5	4.3
8	2	1.6	8	1	0.9
10	2	1.6	9	2	1.7
11	1	0.8	10	4	3.5
13	2	1.6	12	1	0.9
15	2	1.6	13	1	0.9
16	2	1.6	16	1	0.9
18	3	2.5	18	2	1.7
20	3	2.5	20	1	0.9
25	1	0.8	25	1	0.9
26	2	1.6	26	2	1.7
31	1	0.8	41	1	0.9
41	1	0.8			
Total	122	100	Total	116	100