The Savings Behavior of Small Investors

-- A Case Study of Taiwan*

Ever since Granovetter's argument concerning embeddedness[i], the social networks in which economic transactions are embedded have caught the attention of scholars in the field of economic sociology. Following his lead, a number of studies have been done on network organizations, focusing particularly on structural and institutional thinking[ii]. On the other hand, economic sociology has also a long tradition of studying consumption. Since Veblen's theory of conspicuous consumption[iii], Lazarsfeld's[iv] empirical works on interpersonal influence of consumption, Duesenberry's[v] relative-income consumption function, and Granovetter's development of the threshold model and demonstration effect[vi] have brought reference groups and relationship network into consumption studies. Frank[vii] viewed consumer's decision as maximizing social status in local social groups. Bourdieu[viii] took consumption to be the reproduction of class structure. Owning to the insights expounded in these outstanding works, consumption and its complement--savings behavior--as well as economic actions, are now considered to be embedded within the social structure. Economic sociology thus seeks to

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incorporate the institutional and structural environments in which social interactions are embedded into the study of economic behavior, under the name of embeddedness approach. Combining these two lines of thoughts, this paper investigates Taiwanese savings behavior embedded in a network-organization-based business structure.

I. Network Organizations and Small Investors in Taiwan

It is well recognized that the prevalence of entrepreneurship makes most Taiwanese rush into any available investment opportunity, a phenomenon dubbed by Gary Hamilton as the "Gold Rush Effect"[ix]. However, entrepreneurial motivation by itself is not enough; the institutional and structural environment must also provide adequate opportunities for seeking profit. For example, it has been observed that the framework of business activity in Silicon Valley and Northern Italy[x], which are made up primarily of network organizations, help to promote small investment. Ronald Burt developed a theory explaining this fact which showed the connection between the creation of business opportunities and the ability of an entrepreneur to bridge the structural holes between relationship networks[xi].

How a network-organization-based business structure promotes small investment can also be observed in Taiwan[xii]. The Taiwanese economy is built on a foundation of guanxi (personal relationships), and these relationships are

vital for initial investors in establishing a business organization, finding a profit niche in a subcontracting system and collecting initial capital. With the helps of guanxi to access forward and backward linkages, small investors in Taiwan generally put up capital for only a small part of the production/marketing phases needed to get a product out on the market. It is therefore easy for a worker to spin off into self-employment. The lack of vertical and horizontal integration makes it necessary for every businessman to draw on guanxi in order to gain access to inputs and markets. This business environment built on personal relationships is a web-like structure -- a typical case of alleged "small-firms network"[xiii], in which everyone needs various linkages and therefore connections proliferate continuously. Since every firm needs the others, the subcontracting system provides abundant business opportunities for small subcontractors[xiv].

To compare the economy of Taiwan, made up mainly of network organizations, with the economy of South Korea, which is composed primarily of vertically integrated business groups, can be helpful in this regard. The total sales of the top fifty Taiwanese business groups accounts for only 27.3% of GDP, in contrast to the 84.3% of South Korea's top fifty groups[xv]. South Korea's economy is similar in size to Taiwan's, with the same growth speed, but twice the population. From 1966 to 1986, Taiwan increased its number of registered firms by 315%, but the average firm size expanded only 15%. During the same

period, South Korea had approximately a 10% increase in firm numbers but a 300% expansion in average firm size[xvi]. From 1967 to 1969, South Korea had a gross entry flow only 2,124[xvii], while Taiwan had this figure 17 times as high as that of South Korea. During the period from 1986 to 1991, 318,252 new principals started their businesses in Taiwan (not including co-founders and those in the underground economy)[xviii] -- approximately one new principal emerged from every 15 households within a 5-year period.

Taiwan's decentralized and web-like business structure, which is common to most of its industries, provides unlimited opportunities for many small investors. With a population of approximately 21 million people grouped in 4.9 million households, Taiwan had 738,914 registered firms[xix] in 1991, i.e., about one formally-registered firm principal per seven households. This number does not include the heads of businesses in the underground economy, for example, 256,000 peddlers could be found on urban streets[xx]. If we estimate that about 20% of all businesses are those which operate in the underground economy[xxi] (where most business units are small and the number of firms large), and consider the co-founders of firms to be "principals" as well, this statistic is even more surprising. 1996 Yearbook of Manpower Survey Statistics in Taiwan area estimated that roughly 22.3% of total labor force, i.e. about 2 million workers, were employers or self-employed[xxii]. This is a reasonable estimation of possible small investors.

With the considerable liberalization and urbanization of Taiwan's economy during the 80's, not only its registered firms kept a 25% steady growth every 5 years, but its service sector has also provided abundant profit opportunities, an even wider field for the island's entrepreneurs. For example, in 1981 there were roughly 210,000 firms in the retail industry, and this statistics reached 287,101 in 1991[xxiii]. Direct marketing sales have also grown quickly in the 90's, with the total number of individuals in this industry reaching 1,986,000 in 1995, which was an increase of 22.67% over the previous year[xxiv]. Most of them may invest on capital.

A significant number of Taiwanese are now small employers, self-employed or workers at home, since prevalent entrepreneurship has combined with the web-like business structure to prompt many Taiwanese to invest. The expected separation between investment decisions and household savings decisions is simply not apparent in Taiwan. The popularity of small investment resulting from this business structure, and its influence on savings behavior have been observed by many economic sociologists[xxv], however, no statistical empirical studies have yet been done based on these observations. In the following pages, I will seek to demonstrate empirically how investment of small investors affect their savings behavior in Taiwan.

II. Savings Behavior of Small Investors

Small investments are defined here as individual

long-term profit-seeking activities linked to productive behaviors with small investment. As a result, assets choice and speculation are excluded from this category, although the latter two also require substantial capital. Assets choice refers to the allocation of existing savings in efficient ways, rather than an active profit-seeking activity. Individual speculation is a profit-seeking activity, but not long-term productive behavior.

An individual's small investment influences his/her savings behavior in three ways. (1) Small investors face more risk than wage earners, (2) they have expected yields larger than are generally available to them in the securities market because of this risk, and (3) they often faces liquidity constraints which make saving necessary for his/her investment.

A small investor has return rates for his/her savings which are different from those of a pure consumer. The profit rate of small investment depends on an investor's entrepreneurial ability. The expected rate of return for savings reflects the small investor's subjective evaluation of business opportunities and his/her attitude toward risk. According to Neo-classical hypothesis, the variation in interest rates over time or among various assets affects the propensity to save. A small investor has a higher savings propensity than a pure consumer, because he/she expects a higher return rate and faces higher risk.

Given a society in which financial intermediaries could not satisfy the investment of small investors,

people would save money for the purpose of investing, and the effect on savings behavior would thus be strengthened. Even in advanced economies with well-established monetary mediators, most small businessmen and initial investors experience liquidity constraints. Evans and Jovanovic[xxvi] argue that this is the case for initial investors in the USA, where the banking system is highly competitive. Their analysis shows that initial investment will not exceed 1.5 times the total value of an investor's assets. In developing countries without a well-established modern banking system, liquidity constraints are even more severe. Under liquidity constraints, small investors in general have a higher savings rate than the average consumer, because they need to save for their investments.

III. The Model Specification With Small Investment

A. The Data Specification

I used the 1988 "Survey of Family Income and Expenditure, Taiwan Area" to examine the saving behavior of small investors. The survey has been conducted annually since 1976 by the Directorate-General of Budget, Accounting and Statistics. The sampling method of the survey consists of a two-stage random sampling. In the first stage, the survey randomly samples 10% of all towns, villages, or communities within prefectures or cities. In the second stage, 4% of families are randomly drawn from each sampling area. In the end, only 4/1000 of all

families are investigated.

In my analysis, I exclude outliers. While most households have a positive savings rate, few households have a very small amount of income, making it necessary to borrow money to consume and making their savings rate a large negative figure. 99.79% of all households have a savings rate between minus one and positive one. But those outliers may distort the statistics, and therefore need to be excluded. In addition, some of the data is missing, so the total number having valid data is 16,395 in 1988. Thus, 41 cases are excluded or missing.

In the "Survey of Family Income and Expenditure, Taiwan Area", there are three categories of residential areas.

Table 1 about here

In my data analysis, the different residential areas display a fairly substantial difference in savings rates, and also reveal a huge income gap. The households in the countryside saved 30.7% of their income, while families living in towns saved 26.7%, and in the cities, 24.5%. On average, rural families earn only 65% of those living in the cities, while they have a higher savings rate than urban residents. In other words, given the same level of income, a rural family saves more than an urban household.

The primary focus of this paper is those urban areas which experienced the most rapid changes both in organizational structure and labor processes during the

process of Taiwanese industrialization. Towns and rural areas are also analyzed in a comparison study. 70.3% of households in the countryside own capital, in contrast to 42.5% in towns, and 19.2% in the cities.

B. The Indicator of Small investor

What are the indicators of the investment of small investors? Small investments for production behavior exists mainly among those who are small employers, full- or part-time self-employed, and moonlighting workers at home. However, the data of workers at home is absent from the survey. In addition, not all of these people invest on capital. Fortunately, the "Survey of Family Income and Expenditure, Taiwan Area" investigates five types of capital-owning. It provides us with direct data on households' small investment. In the urban areas, 9.7% of households invest in land for the purpose of production use. 8.1% of households have factories or shops, while 13.6% have production machinery or equipment, for uses including agriculture, manufacturing and office work. In addition, 6.3% own transportation equipment for their businesses. Not surprisingly, only 0.4% have large animals or plants. Combining these various indicators of capital-owning together, I therefore come up with one indicator for small investors with any form of family investment. 19.2% of households belongs to this category of small investors.

However, this indicator is based only on certain types of capital-owning, since it doesn't include such small

investment as the inventory investment of peddlers and direct marketing self-employed, etc. In addition, office equipment at home -- such as computers, telecommunication equipment and software -- is often difficult to distinguish from home-use electronics. This survey does not pay close attention on the trend of self-employment in the service sector. It is obvious that this indicator cannot give a complete picture of the small-investment effect on savings, so the explanatory power of the effect will be reduced. Therefore, I leave a comprehensive treatment of the small-investment effect to some future survey of this issue.

C. The Model Specification

The analytical model is based on the assumption that households that have opportunities to invest in small businesses expect to yield a higher rate of return than other investments available to them. The expected higher rate of return, combined with restraints that may exist with respect to borrowing to finance investments, induces small business households to save a higher percentage of their incomes than households that are primarily engaged in earning wages and salaries. It is this hypothesis that I test.

A savings model with the specification of small investment is built for this hypothesis testing.

$$S = \alpha + \beta_1 I + \beta_2 Y + \beta_3 Y^2 + \beta_4 P + \beta_5 A + \beta_6 Age + \varepsilon$$

1. **I** refers to a dummy variable indicating either of the

five types of holding capital goods. If either of the five indices is greater than zero, then **I** is 1; otherwise **I** is zero.

2. **Y** refers to the control for controlling an economic factor -- disposable income. Y^2 is included due to its significant impacts on savings in the previous cross-sectional regression analysis done by other economists.

3. **P** refers to size of household for controlling a demographic factor -- the effect of population of household on consumption.

4. **A** refers to assets, including houses, land and building not for production uses so as to control the effect of assets on consumption.

5. **Age** refers to another demographic factor -- the economic head of the household's age, in continuous measurement.

I is the factor under study. All other factors provide controls for the analysis, and are selected from various previous savings studies done by Taiwanese economists[xxvii].

IV. The Empirical Results

A. Interpreting the Regression Results

Before testing the hypothesis, it is necessary first to conduct a descriptive analysis of small investors' societal-economic status. Among the urban small investors, 18.9% are non-agricultural employers, 52.4% are non-agricultural self-employed, only 0.1% and 7.4% are agricultural employers and self-employed

separately. Of the total, 21.2% are moonlighting workers at home.

Some 27% of urban residents belong to the categories of employer or self-employed (moonlighting workers at home are not surveyed in my data set). Of this 27%, 25% are non-farming households, while only 2% are farming households. Among the non-farming employers and self-employed, 53.8% are small investors. This figure is much lower than their farming counterparts, of whom some 85% own capital. On the one hand, this illustrates that not all employers and self-employed need to invest to operate their businesses, though more than half of them own capital; on the other hand, farming households show a more urgent need for capital.

The following table presents the means for all variables, and the results of the savings regressed on small investment, after controlling for income, income squared, age of the economic head of the household, the size of the household, and assets.

Table 2 about here

In Taiwanese urban areas (refer to Model 1), the age of the economic head of the household is positive and significant, but not as important as the other factors. Taiwanese households are sometimes extended families, so the age of the economic head of the household may not reflect the life-cycle of the family. All other factors are highly significant predictors of savings. Looking at the control for income, quite significantly, it is

positive with regards to savings. Income squared is also a significant positive predictor, as illustrated in the preceding exploratory regression analyses[xxviii]. The size of the household is one of most important factors affecting the savings in my analysis (another one is income), and its influence is negative with regards to savings. Owning assets is also a negative factor; in other words, urban residents with properties save less than those without properties, which corresponds with results from a previous study showing that house-owners have a lower savings propensity[xxix]. The test results of these controls are consistent with what other previous empirical studies have shown.

The major conclusions of the analysis are that the indicator under study is positive and significant. The results of the test indicate that family's investment on capital cause higher savings, i.e., Taiwanese small investors do save their own money for investment. In general, urban small investors save 11,881 NT dollars (about 430 US dollars) more than the average urban resident, which is roughly 8.4% of average savings.

B. The Comparison Between Farming and Non-farming Households

Not surprisingly, while very few, (i.e. 7.5% as shown above) of urban small investors are agricultural employers or self-employed, a dominant 68.8% of rural small investors invest for agricultural reasons. The agricultural self-employed made up half of all rural

residents, and 96.6% of them invest on capital goods. On the contrary, only 12.9% of rural households are non-agricultural employers or self-employed, but 86% of them own capital, higher than their urban counterparts. Among these rural small investors, 88.9% invest on land, and 36.6% have equipment, mostly for farming reasons.

The important points of comparison between savings models for city and countryside are in the categories relating to small investors. The regression results (refer to Model 2) indicate that those with the status of small investor do exhibit a higher savings rate -- i.e. additional 6,328 NT dollars -- in the rural areas, which corresponds with the findings for urban areas. The most meaningful comparison is that between urban small investors -- more than 70% of them are non-farming employers or self-employed -- and those living in rural areas, of whom nearly 70% belong to farming households. These comparisons do not show any significant differences in savings behavior between farming and non-farming investors in Taiwan, except that a higher percentage of farming households own capital (96% in both the towns and the countryside) in comparison to non-farming employers or self-employed. But rural investors save 6.1% more than the average rural resident, a little lower than the figure in cities(i.e. 8.4%).

The results from towns are something of a mixture of urban and rural economic behavior. 42.6% of small investors in towns are non-agricultural employers or self-employed, while 37.6% are farming households. In

my regression analysis, the indicator for small investors is still a significant positive predictor of savings (refer to Model 3). Small investors in town save an additional 10,418 NT dollars. An interesting comparison to make is between farming investors and non-farming investors, since they form roughly equals proportions of the population in towns. Farming investors have a higher savings rate (i.e. 28.7% to 27.2%), but 67,800 NT dollars less in income, and 17,600 NT dollars less in savings. The comparison tells us that farming investors earn less income, but have a higher savings propensity.

All controls in both the countryside and towns have regression results similar to those for cities, except that in the towns and countryside the age of the household head becomes insignificant.

Small investment promote savings by farming investors, just as they do among small investors in urban areas. In Taiwan's highly commercialized agricultural sector, farming households are clearly small investors in terms of their needs for capital, whether it be for land or farming equipment. With the exception of a few types of farming households -- e.g. prototype peasants, semi-proletarian peasants, and full-time contracting farmers [xxx]-- they are also small investors in terms of their profit-seeking activities in the market.

C. The Historical Trends

Following is an analysis of the trends in small investors' behavior based on Taiwanese urban data from

1979 to 1991, which is helpful in providing some historical perspective.

Figure 1   about here

The proportion of small investors in the urban population rose steadily during this period, from 15% to 19%. Except two down-turns, the trend went up slowly and smoothly. This is consistent with the trends of Taiwanese change into a service economy . If the survey could include more items showing investments in service industries, the proportion would likely be higher, and the upward trend steeper. Following the great social and political transformation that the island has been undergoing since the mid-80s, Taiwan's economy has entered a new era. Income has risen sharply during this period. The savings rate of small investors has followed the business cycle of the 80's, which went down following the second energy crisis, but began to rise again after 1985.

Several replications have been conducted to test the model under consideration. Following is the result.

Table 3   about here

The 13 replications of regression analyses show that small investment do increase voluntary savings of small investors, after controlling income, age of household head, assets and household size. As shown in Figure II, the higher savings of small investors ranged from 4,500 to 20,000 NT dollars (in 1991 value), which represents 4% to 25% of average savings respectively[xxxi]. It fluctuated

according to expectations of economic boom or bust, which can be illustrated by examining gross domestic capital formation as a percentage of GNP. Right after the second energy crisis, the enthusiasm for investment was highly frustrated in Taiwan, it reaching bottom in 1985, then recovering since 1986. 1984 was an exception during this recession period. That year saw unexpectedly high investment of small investors as well as 10.6% of economic growth[xxxii].

Figure 2 about here

The consistency of these tests provides me with the confidence to conclude that the small-investment effect on savings does indeed exist in Taiwan.

That network organizations provide a structural greenhouse for small investment we established in Section I, which summarized previous relevant studies. In the preceding empirical study, we have also demonstrated that in the case of Taiwan, the investment of small investors does in fact influence their savings behavior. In what respect, if any, are these findings relevant for this era, an age characterized by "the rise of the network society"[xxxiii]?

V. Implications for the Post-Industrial Society

When giant bureaucracies in managerial capitalism emerged[xxxiv], most workers were indeed salary workers and thus separated from investment decisions. However, the changing of economic institutions in the "post-industrial society"[xxxv] points in the opposite direction. In this era,

mass-production economies and giant organizations alike have been in deep crisis. One main corporate response to this crisis has been to develop flexible specialization and quick-response to market changes[xxxvi]. With the benefits of flexibility, small businesses and network organizations have conquered many markets, even in most high-tech industries[xxxvii]. In the computer industries, decentralization and flexibility are considered the keys to organizational success[xxxviii]. Biotechnology industry is also the world of small firms and strategic alliances[xxxix]. Re-engineering became an important phenomenon among corporations since the late 80s. Bureaucratic structures have been steadily yielding more space to network organizations and flexible production.

A second major change, resulting from changes in labor processes, has been the emergence of "knowledge workers" and the increasing importance of subcontracting[xl]. Differentiated jobs locked in Tylerist assembly lines are gradually being replaced by contractible work which can be done at home. In addition, an increasing number of knowledge workers are seeking flexible working schedules which allow them to escape the traditional "nine to five" life. These social forces together have created the impetus behind the trend of workers working at home.

American businesses expanded from 10.5 million units to 16.8 million from 1958 to 1980[xli]. In an economy with a population of 96 million households, a significant proportion may invest capital for their businesses. Most of these businesses are small and their owners

self-employed. Out of this 16.8 million businesses that filed tax returns in 1980, 10 million were sole proprietorships and 1 million were partnerships[xlii]. About 70% of all businesses had receipts totaling less than $50,000, and many were operated on a part-time basis[xliii]. As a result of the rise of network organizations and subcontracting labor processes since the mid-70s, small businesses grew not only in quantity, but also in quality. Small businesses created most of the 19 million new jobs while the Fortune Industrial 500 lost 3.7 million from 1979 to 1989[xliv]. It is significant to note that the importance of the Fortune 500 peaked in 1979, when their combined sales accounted for 58% of the GNP. This figure declined to 42% in 1989[xlv].

Working at home is another trend encouraging small investments. According to data from the CPS[xlvi], there are now 1.9 million Americans working out of their homes[xlvii], and one-third of 7.1 million moonlighting workers(2.3 million) perform paid work at home. The trend is growing quickly. CPS data shows that 17.3 million non-farming workers reported doing some work at home in 1985. This figure reached 20 million 6 years later. These moonlighting or part-time "subcontractors" at home may also need working capital for their own subcontracting businesses.

Networking in various economic organizations and labor processes is already influencing people's economic life. The boundary between investors and consumers is becoming less and less distinct.

VI. Conclusion

As discussed above, the indicator I have chosen to use with regard to indicate small investors is not enough to demonstrate all types of small investment. The merits of the "Survey of Family Income and Expenditure, Taiwan Area" are its large sample size and unbiased sampling. However, various types of small investment in the service industry were not given deserved attention. The secondary data analysis of this study can only provide a rough estimate of the effect, since to date there has been no complete measurement of small investment. A specially designed survey and further collection of data are needed to compensate for this lack.

This paper is only a pilot study to this issue. The savings model is too simple to precisely measure the effect of small investment on savings. In order to complete this study, it is necessary to devise an analytical model of this effect that takes into account both the subjectively expected return rate and liquidity constraints. Then, relevant data about these two variables must be collected, so as to test the completed model.

What can I conclude from this empirical study? My tests confirm that households that are engaged in small investment save a higher percentage of their incomes than do other households. In addition, this paper summarizes other previous studies to argue that small investment is not limited to a small social group in Taiwan since the web-like business structure provides a warm climate for small investors.

Can this conclusion be considered valid for other societies as well? In theory, small investors in any society face liquidity constraints, higher risk as well as different expected return rates of savings than the average consuming publics. However, this generalization obviously requires empirical tests from other countries. The popularity of small investors is commonly seen now, including the USA, where mass production first originated. In addition to the changing economic institutions, people's economic lives are also being changed. As a result, the phenomenon of small investment is becoming increasingly significant. Since the economic institutions which had separated investors and consumers are quickly being transformed, it is the right time to pay close attention to the behavior of small investors.

Table 1: Definition of Resident Area and Variables

	POPULATION & DENSITY	INDUSTRIAL TYPE
City	a.population > 50,000 and density > 2,000	1.service sector> 60% or 2.agriculture < 30% and service > 50% or 3.industry+service > 75%
	b.population > 30,000 and density > 2,000	1. service > 70% or 2. agriculture < 10% and service > 60%
Town	a.population > 40,000 and density > 600	1.agriculture < 50% or 2.service > 40% or 3.industry > 40% or 4.agriculture50%-60% and service > 30% or 5.agriculture50%-60% and industry > 30%
	b.population > 20,000 and density > 1,000	1.service > 50% or 2.agriculture < 20% and service > 40% or 3.industry+service > 70%
Country	all others	all others

VARIABLES NAME...DENOTATIONS...DEFINITION

SAVINGS......S.....SAVINGS

INVESTMENT...I.....INDICATOR OF SMALL INVESTORS

INCOME.......Y.....ANNUAL DISPOSABLE INCOME

INCOMESQU....Y^2....DISPOSABLE INCOME SQUARED

ASSETS.......A.....FAMILY INVESTMENT PLUS REAL ESTATE

POPULATION...P.....POPULATION IN THE HOUSEHOLD

AGE.........Age....THE AGE OF ECONOMIC HOUSEHOLD'S HEAD

Table 2: Partial Regression Coefficients for the Effects of Small investment in 1988

Means of All Variables

Variables	urban areas	rural areas	towns
SAVINGS RATE	24.5%	30.7%	26.7%
SAVINGS	141,565	103,878	117,259
INVESTMENT	19.2%	70.7%	42.8%
INCOME	481,437	322,226	385,249
POPULATION	4.16	4.39	4.52
ASSETS	1,612,432	654,120	945,511
AGE	42.1	45.2	41.5

Dependent Variable: Savings

Independent Variables	Model 1 urban areas	Model 2 rural areas	Model 3 towns
INTERCEPT	-49271 **	8927	-26769 **
INVESTMENT	11881 **	6328 *	10418 **
INCOME	.5082 **	.447 **	.5097 **
INCOMESQU	5.9E-8 **	1.73E-7 **	8.5E-8 **
POPULATION	-15886 **	-12880 **	-13535 **
ASSETS	-.014 **	-.021 **	-.018 **
AGE	310 **	-190	96
R^2	.753	.743	.752
Case No.	9060	2922	4320

DENOTATION: * < 0.05 ** < 0.01 in one-tail test

Table 3: The Replications of Testing for the Effects of Small investment on Savings from 1979 to 1991

Dependent Variable: Savings

Explanatory Variables

←————————————————————————————————

year	Inter-cept	Invest-ment	Income	Income-squ	Assets	Popula-tion	Age
1979	-10387**	12576**	.417**	9.1E-8**	-.004**	-6879**	-36
1980	-14288**	9131**	.449**	1.1E-7**	-.007**	-9008**	-47
1981	-19734**	7235**	.483**	8.9E-8**	-.013**	-9745**	-26
1982	-19366**	8961**	.505**	6.6E-8**	-.014**	-11199**	-131*
1983	-24771**	4803*	.442**	8.3E-8**	-.006**	-9864**	-69
1984	-26244**	13752**	.523**	5.1E-8**	-.016**	-13689**	-160*
1985	-26393**	3837	.450**	9.1E-8**	-.017**	-11531**	107
1986	-36716**	5938**	.493**	5.0E-8**	-.014**	-12974**	187*
1987	-29613**	11606**	.487**	5.3E-8**	-.018**	-15239**	219*
1988	-49271**	11881**	.508**	5.9E-8**	-.014**	-15886**	310**
1989	-64038**	12600**	.515**	2.9E-8**	-.008**	-14976**	401**
1990	-69036**	19277**	.532**	4.7E-8**	-.017**	-19105**	400**
1991	-62035**	13547**	.489**	5.7E-8**	-.017**	-18947**	616**

DENOTATION: *   < 0.05 **   < 0.01 in one-tail test
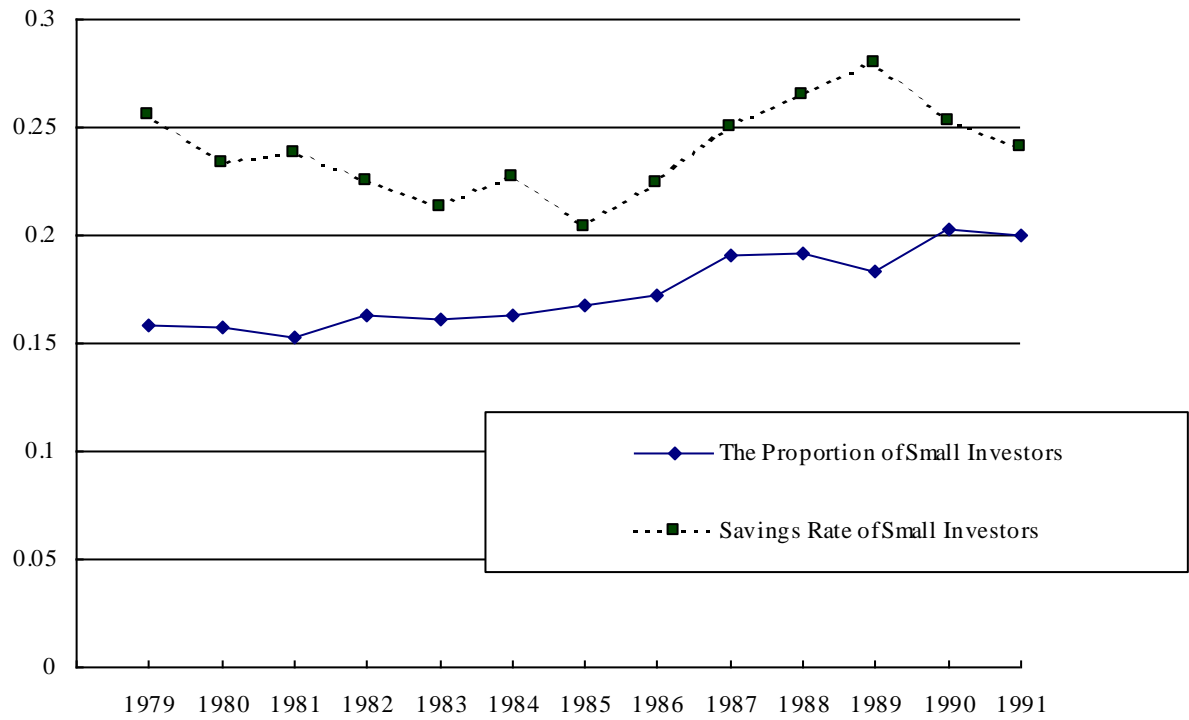
Figure 1: The Historical Trends of Some Statistics

of Small Investors
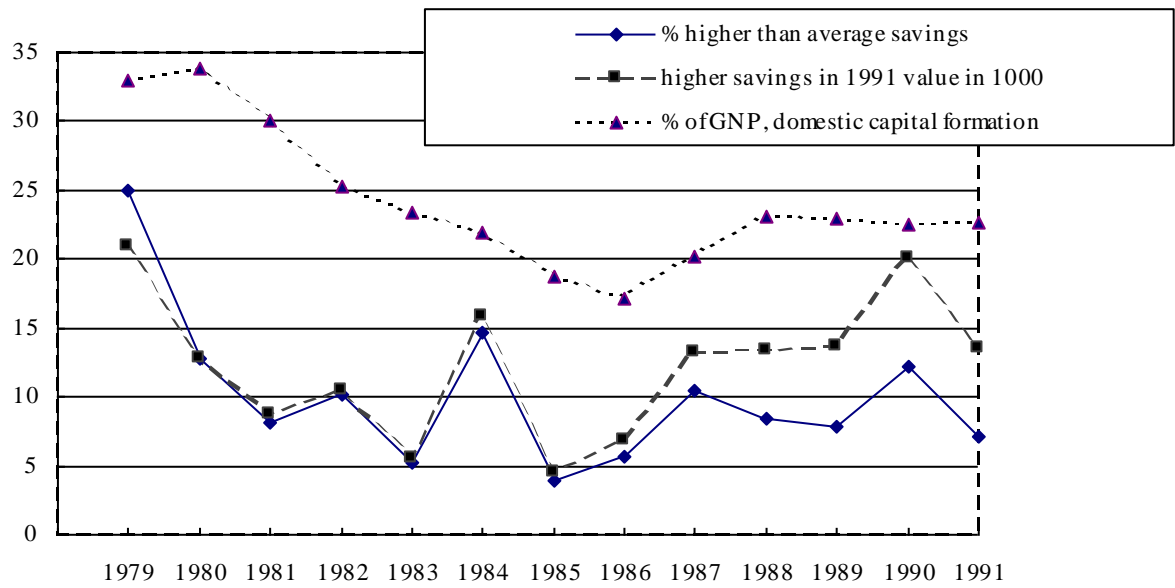
Source--Data of domestic capital formation are from Taiwan Statistical Data Book in 1996

Figure 2: The Historical Trend of Higher Savings

of Small Investors

Notes

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vii Robert H. Frank, <u>Choosing the Right Pond -- Human Behavior and The Quest for Status</u> (New York: Oxford University Press, 1985).

viii Pierre Bourdieu, <u>Distinction: A Social Critique of the Judgment of Taste</u> (Cambridge: Harvard University Press, 1984).

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x About Silicon Valley, see AnnaLee Saxenian, <u>Regional Advantage: Culture and Competition in Silicon Valley and Route 128</u> (Cambridge: Harvard University School Press, 1994). About North Italy, see Mark Lazerson, "Future Alternatives of Work Reflected in the Past: Putting-Out Production in Modena," <u>Explorations in Economic Sociology</u>, ed. by Richard Swedberg (NY: Russell Sage Foundation, 1993).

xi Ronald S. Burt, <u>Structural Holes:The Social Structure of Competition</u>, (Cambridge:Harvard U. Press, 1992).

xii Jar-Der Luo, "The Significance of Networks in the Initiation of Small Businesses in Taiwan," <u>Sociological Forum</u> 12 (June 1997).

xiii see Charles Perrow, "Small-Firm Networks," <u>Networks and Organizations</u>, ed. Nitin Nohria and Robert Eccles (Cambridge: Harvard Business School Press, 1992):445-471.

xiv See Luo, "The Significance of Networks in the Initiation of Small Businesses in Taiwan" (n.12 above):12-20.

xv Gary Hamilton, William Zeile and Wan-Jin Kim, "The Network Structures of East Asian Economies," <u>Capitalism in Contrasting Cultures</u>, ed. Steward R. Clegg & S. Gordon Redding (New York:

Walter de Gruyter, 1990):table 3.

[xvi] See Hamilton, "Patterns of Asian Capitalism" (n.9 above):20.

[xvii] Leroy Jones and Il Sakong, Government, Business, and Entrepreneurship in Economic Development: The Korea Case (Cambridge: Harvard U. Press, 1980).

[xviii] Data are from Directorate-General of Budget, Accounting and Statistics, The Report on 1991 Industrial and Commercial Census, Taiwan-Fukien Area (Taipei:Executive Yuan, 1991).

[xix] Data are from Executive Yuan, 1991 (n.18 above). In Taiwan, businesses are required to register and obtain licenses from a related administration. Licenses are sometimes limited for the sake of government economic policies. Therefore, many small business, such as peddlers, family factories, etc. operate without registration.

[xx] Data are from Directorate-General of Budget, Accounting and Statistics, Yearbook of Manpower Survey Statistics, Taiwan Area in 1993 (Taipei: Executive Yuan, 1993).

[xxi] Ch'ien, Ch'uan-Deng, "A Study of Underground Economy," Quarterly Review of Taiwan Bank 32 (Dec. 1981):145-171.

[xxii] Data are from Directorate-General of Budget, Accounting and Statistics, Yearbook of Manpower Survey Statistics, Taiwan Area in 1996 (Taipei: Executive Yuan, 1996).

[xxiii] Data are from Executive Yuan, 1981 and 1991 (n.18 above).

[xxiv] Data are from Fair Trade Commission, Survey on Multi-level Direct Sales in Taiwan Area in 1995 (Taipei: Executive Yuan, 1995).

[xxv] Such as Gary G. Hamilton and Cheng-Shu Kao, "The Institutional Foundations of Chinese Business: The Family Firm

in Taiwan," <u>Comparative Social Research</u> 12 (1990):135-151; Shieh-Shyuan Chen, <u>Monetary Networks and Structure of Daily Life</u> (Taipei: Lian-Jin Press, 1995); Pao-An Lin, "The Social Sources of Capital Investment in Taiwanese Industrialization," <u>Business Networks and Economic Development in East and Southeast Asia</u>, ed. Gary Hamilton (Hong Kong: University of Hong Kong Press, 1991).

[xxvi] S. David Evans and Boyan Jovanovic, "An Estimated Model of Entrepreneurial Choice under Liquidity Constraints," <u>Journal of Political Economy</u> 9 (1989)4:808-827.

[xxvii] The model specification are mainly from Liu, Shou-Hsiang, "An Empirical Study of Household Savings and Assets Choice in Taiwan Area -- An Analysis of Decision Behavior under Financial Dualism," <u>Quarterly Review of Taiwan Bank</u> 39 (Mar. 1988):1-37. See also Luo, Chi-Chiung, "The Influence of Social-Economic-Demographic Factors on Savings -- A Study of 1981 'Survey of Household Income and Expenditure in Taiwan Area," <u>Paper Collection of Annual Meeting of Chinese Economics Association</u> (1983):189-203. See also Hsu, Song-Ken "A Study of The Patterns of Households Savings in Taiwan Area," <u>Taiwanese Economic Forecast</u> 4 (Jun. 1973):36-59.

[xxviii] See Hsu, "A Study of The Patterns of Households Savings in Taiwan Area," (n.27 above):40.

[xxix] see Luo,"The Influence of Social-Economic-Demographic Factors on Savings,"(n.27 above):200.

[xxx] About the behavior of different Taiwanese agrarian classes, please refers to Ka, Chih-Ming and Own, Su-Jei, "The Differentiation of Agrarian Classes in Taiwan," <u>Bulletin of the Institute of Ethnology</u> 72 (1991):107-150.

[xxxi] These regression coefficients and percentage are rough estimates. There must be some specification errors and sampling errors influencing regression results. However, since the model specification explains about 70% of variance of savings, rarely seen in cross-sectional analysis, and the data set contains more than 15,000 observations, the influence of specification uncertainty and sampling uncertainty should be limited.

[xxxii] Data are from Council for Economic Planning and Development, <u>Taiwan Statistical Data Book in 1996</u> (Taipei: Executive Yuan, 1996).

[xxxiii] Manuel Castells, <u>The Rise of The Network Society</u> (Cambridge: Blackwell Publishers, 1996).

[xxxiv] Alfred D. Chandler, "The Emergence of Managerial Capital-ism," <u>The Sociology of Economic Life</u>, ed. Mark Granovetter and Richard Swedberg (Boulder: Westview Press, 1992):131-158.

[xxxv] Daniel Bell, <u>The Coming of Post-Industrial Society: A Venture in Social Forecasting</u> (New York: Basic Books, Inc., 1973).

[xxxvi] Michael J. Piore and Charles F. Sabel, <u>The Second Indus-trial Divide: Possibility for Prosperity</u> (New York: Basic Books, Inc., 1984).

[xxxvii] John Case, <u>From The Ground Up: The Resurgence of American Entrepreneurship</u> (New York: Simon & Schuster, 1992).

[xxxviii] AnnaLee Saxenian, <u>Regional Advantage</u> (n.10 above).

[xxxix] Stephen Barley, John Freeman, and Ralph Hybels, "Strategic alliances in Commercial Biotechnology," <u>Networks and Organizations</u>, ed. Nitin Nohria and Robert G. Eccles (Cambridge: Harvard Business School Press, 1992).

[xl] Peter Drucker, <u>The Age of Discontinuity: Guidelines to Our</u>

Changing Society (New York: Harper & Row Publishers, 1969).

[xli] Data are from Internal Revenue Service, Statistics of Income in 1980.

[xlii] Data are from The State of Small Business, A Report of the President in 1980.

[xliii] See Case, From The Ground Up (n.37 above).

[xliv] David Birch, Job Creation in America (New York: The Free Press, 1987).

[xlv] See Case, From The Ground Up (n.37 above).

[xlvi] Deming, William G., "Work at home: data from the CPS," Monthly Labor Review (Feb. 1994).

[xlvii] CPS data shows that there are 5.6 million self-employed people who work at home. In addition, more than 12 million wage and salary workers bring unpaid work back home. However, it is not clear whether the unpaid work required working capital or whether the working capital was provided by employers.