Can the Precautionary Motive Explain the Chinese Corporate Savings Puzzle? Evidence from the Liquid Assets Perspective

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This paper uses matched customs and firm-level data from Q1 2002 to Q4 2009 to examine which factors influence corporate savings decisions in China. The investigation shows that the precautionary motive plays a crucial role in explaining firms' savings behavior. I start by showing that a firm's savings are highly sensitive to its ownership structure. Private firms tend to save more than state-owned enterprise (SOE) when firms with valuable future investment opportunities and limited access to finance might accumulate precautionary savings. To address endogeneity concerns, difference-in-difference estimations support the causal impact of precautionary motives on corporate savings. Strikingly, I find that export firms tended to save more during the recent crisis. This finding challenges the mainstream view that an unexpected negative shock to external demand for the export-oriented industry would cause its savings to drop significantly. One interpretation of the results is that the precautionary motive under financial friction increases corporate propensity to save. The results highlight the importance of developing Chinese financial markets in order to channel savings into investment. One policy implication is that the low dividend payment by SOEs is less important in causing the gap between saving and investment than previous studies have suggested.

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1. Introduction

China's national savings rate as of 2009 was more than twice the overall world rate and finds few historic parallels among other economies. It has increased more than 15 percentage points, from 39% to 54% of GDP over the past five years (IMF, 2010). The extraordinarily high savings rate, which is determined by various economic and institutional factors, results in a large gap between savings and investment, and, therefore, massive current account surplus and global imbalance[1]. Why is the savings rate so high? Not only is the question challenging, but it also has important policy implications[2]. However, previous studies have mainly focused only on household savings in China (Modigliani and Cao, 2004; Chamon and Prasad, 2010).

Several studies find that the real driver of the recent Chinese savings boom is the corporate sector, in which savings shot up to more than 26% of GDP in 2007 from about 15% of GDP at the beginning of the decade (Anderson, 2009). Savings in the corporate sector increased relative to savings in other sectors. According to the IMF (2010), the rise in corporate savings reflects a combination of rapid growth, limited competition, financial underdevelopment, and low input costs. Despite high profits, Chinese firms pay very low dividends in comparison with firms in both developed and emerging markets (Porter et al., 2009). Therefore, the IMF suggests that China should manage high corporate savings by raising the costs of factor inputs (including capital), widening corporate ownership, boosting dividend payouts, and increasing competition in domestic markets.

Goldstein and Lardy (2009) argue that an undervalued exchange rate boosts relative competitiveness and thus corporate profits in the manufacturing sector, which often results in current account surpluses. Lin (2009) emphasizes that in China the high level of corporate savings can partly be attributed to a financial structure dominated by state-owned banks and an equity market with restricted entry, both of which favour large firms. Similarly,

[1] This literature includes Blanchard and Giavazzi (2006); Kuijs (2005, 2006); Aziz and Cui (2007); IMF (2009); Wei and Zhang (2011); Wolf (2006, 2010); Kraay (2000); and Ma and Wang (2010).

[2] Bernanke (2005) analyzes the U.S. current account deficits by focusing on the "savings glut" in emerging Asia and oil-producing countries, which has been said to be an underlying cause for the housing bubble. Portes (2009) points out an underlying cause of the crisis is the interaction of global imbalances with the financial market's "search for yield" when the real interest rate is lower.

Prasad (2009) notes that the restricted financial system provides cheap capital to favoured firms, most of which are large state-owned firms. As a response, Prasad and others recommend appreciation of the currency and development of the domestic financial market[3].

In contrast, Bayoumi et al. (2010) employ firm level data to compare the corporate savings rate across countries[4]. First, they find that Chinese firms do not have a significantly higher savings rate (relative to total assets) than the global average because corporations in most countries have a high savings rate[5]. The rising corporate savings rate is also consistent with a global trend. Second, revisiting the aggregate flow-of-funds data[6], they show that corporate gross savings rates are high and have been rising in a number of countries. South Korea and Japan, in particular, tend to have substantially higher than average savings rates by their corporate sectors. Third, they find no significant difference in the savings behaviour between the majority of Chinese firms that are state-owned and those that are privately owned and publicly listed. In addition, they find that the dividend pay-out ratio averages 16% for Chinese listed firms compared to less than 13% for firms in the rest of the world. Finally, they suggest that, to understand why China's national savings rate is so high, the corporate sector is the wrong place to start.

The conflicting results of Goldstein and Lardy (2009), Lin (2009), and Prasad (2009) on the one hand, and Bayoumi et al. (2010), on the other, show that the existing empirical

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[3] Prasad (2009) suggests that a broader array of financial markets - insurance, corporate bond markets, and a variety of derivatives markets such as currency futures—would provide more instruments for savings, borrowing, and hedging risk. Also, more channels for raising funds means firms could rely less on retained earnings for financing their investments.

[4] To my knowledge, this is the first research on the Chinese corporate savings puzzle with firm level data that identifies export firms and excludes financial firms. The previous studies mainly rely on macro level data: expenditure-based and production-based approaches. The latter, so called "flow of fund" statistics, allow for decomposing the national savings by sector.

[5] Interestingly, they note that, to the extent that these financial assets are liquid and significant, corporate savings may be higher than currently reported under their definition.

[6] Bayoumi et al. (2010) also check the quality of macro level from China's National Bureau of Statistics, which have major limitations for studying China's savings. Due to that data limitation, they adopt the definition of firm-level corporate savings to match more closely with that of aggregate corporate savings in the flow of funds data.

evidence on Chinese corporate savings puzzle is far from conclusive. My aim in this paper is to fill this gap.

First, this paper empirically studies corporate savings behavior in China using an extensive, hand-collected dataset of all publicly listed non-financial firms between 2002Q1 and 2009Q4. Second, the paper explores which factors influence corporate savings decisions; the factors include firm level fundamentals, firm's ownership structure, industry, and local macroeconomic conditions. Third, following Bayoumi et al. (2010), I overcome the data limitations by adopting a measure of corporate cash saving which is closer to a liquidity perspective. In addition, to address the effect of the precautionary motive on corporate savings, I construct a unique database that contains information on ultimate corporate control, ownership concentration and location information. And lastly, I supplement these data by matching them with hand-collected information about export firms in our samples.

In this paper, the empirical strategy not only explores what drives corporate savings, but also studies the joint effects between future investment opportunities (Tobin's q and industry average q alternatively) and ownership. To address endogeneity concerns, I apply difference-in-difference (DID) estimations to analyze the change in corporate savings distinguishing between export firms (the treatment group) and non-export firms (the control group) in response to the recent crisis. The financial crisis of 2008 was a negative shock to external demand for the products of export industries, which has not been previously explored. Moreover, as an additional investigation of identification, I conduct a sensitivity check between privately owned export firms and privately owned non-export firms. Finally, I explore the consistency of results by checking the subsample of export firms for robustness.

The results agree with the macro evidence provided by flow of fund statistics. Corporate savings in China are relatively high, which has been a critical factor in the increasing national savings[7]. In contrast to evidence from previous studies, corporate saving by the firms in our sample is negatively associated with state-ownership. This negative correlation indicates that private firms tend to save more, as indeed is plausible in circumstances when firms with valuable future investment opportunities and limited access

[7] The finding of Prasad (2010) is in the line with my predictions: the share of corporate savings has risen markedly, accounting for almost half of national savings by 2007–08.

to finance might accumulate precautionary savings[8]. Indeed, firms that have accumulated more cash savings tend to have higher leverage, less inventory, a higher share of intangible assets, and higher expected profitable investment opportunities, and tend to be located in areas that give them limited access to the financing available in the wealthier cities. Finally, my findings cast doubt on the previous view that the governance structure of state-owned firms and the resulting low dividend payouts are a major cause of the gap between saving and investment.

The magnitudes of the precautionary motive are both statistically and economically significant. Both DID and joint effect results support the causal impact of the precautionary motive on corporate savings. Surprisingly, firms in the export industry tended to save more during the recent crisis. This finding challenges the mainstream view that the unexpected negative shock would cause a decline in external demand for exports, hence a fall in the export industry's savings. Generally speaking, firms with valuable investment opportunities and volatile cash flow should accumulate precautionary cash balances. This is because, if these firms found themselves short of funds, then they might have to forgo profitable investments. Therefore, firms that might need external finance in the future might choose to save during the good times (McLean, 2011). One interpretation of the results is that the precautionary motive under financial frictions increases the corporate propensity to save. In addition, the effects of the financial crisis on corporate investment support this story; investment declined significantly following the external demand shock. Finally, after further sensitivity investigation and robustness checks, the findings show that the precautionary motive plays a crucial role in explaining firms' savings behavior.

This paper contributes to several strands of literature. First, it connects with a growing body of research on corporate savings and precautionary motive. Ever since Keynes (1936)[9], it has been well documented that cash flow volatility could affect firm's cash saving

[8] Almeida, Campello and Weisbach (2004) and Riddick and Whited (2007) respectively find a positive response of cash savings to future investment opportunities.

[9] Keynes (1936) defined the precautionary motive as preparation for contingencies requiring sudden expenditures or unforeseen opportunities for advantageous purchases. A further motive for holding cash is to hold an asset with fixed monetary value in order to meet a subsequent liability which also has fixed monetary value.

behavior (Opler et al., 1999). The mechanism of corporate saving is consistent with the findings of Carroll et al. (2007) about precautionary saving. In their models, precautionary motive is the response of current spending to future risk, conditional on current circumstances. Similarly results are obtained by Sandri (2010) with a model emphasizing the uninsurable idiosyncratic investment risk. The uninsurable risk of losing invested capital forces entrepreneurs to rely on self-financing, so that when business opportunities open up entrepreneurs increase saving to finance the investment. The idea that financial friction may be playing an important role in precautionary saving is common to other recent insightful papers. Acharya, et al. (2007) develop a model showing that firms accumulate cash savings instead of reducing debt when the correlation between operating income and investment opportunities is low (i.e., "funding gap").

Empirically, Bate et al (2008) find the increase in US's industry cash flow risk is the main determinant of cash saving. They show that the increasing cash saving of US firms may be caused by the precautionary motive. Several studies have also shown that that the higher the level of corporate governance, the more shareholders are able to exercise their rights and prevent firms from hoarding cash (Cardarelli and Ueda (2006)). Kalcheva and Lins (2007) show that cash saving is valued more highly in firms with low agency costs than in firms with high agency costs. To the best of my knowledge, my paper is the first study to explain systematically the Chinese corporate saving puzzle under the precautionary motive.

This paper also contributes to a growing body of research about financial development and state misallocation of saving and investment (Bai et al., 2006; Song et al. 2011). Caballero et al. (2008) present a model emphasizing heterogeneity across countries in the capacity to provide financial assets due to the level of financial market development. Mendoza et al. (2009) show that lower domestic risk sharing and underdeveloped financial market increase precautionary savings in developing countries.

The underdeveloped financial market also has a role to play in the high level of retained earnings among profitable Chinese firms. One restriction on financing is a ceiling on deposit rates, which means that firms have faced very low or sometimes even slightly negative real rates of return on their bank deposits. Moreover, the lack of alternative financing mechanisms, such as a deep corporate bond market, has led firms to retain their earnings in

order to finance future investment projects (Prasad, 2010). Similarly, Lardy (2008) and IMF (2009) suggest that the more liberalized the financial market, the less firms hoard cash, because they have easier access to funding and are less worried about being shut out of financial markets[10]. This paper contributes evidence of the negative relationship between access to finance and corporate saving within a fast growing economy in an environment where financing opportunities are restricted.

The remainder of the paper is structured as follows. In section II, I provide the basic stylized facts based on macro evidence. In section III, I explain the measurement of variables; describe the sample and sources; present descriptive statistics; and describe the identification methods. In section IV, I report the results of the regressions and sensitivity investigation. In section V, I present various robustness checks. The last section will conclude with policy implications.

2. Stylized Facts

This section sets out the stylized facts about saving, investment, and financing in China based on annual macro data from the IMF, World Bank, OECD and CEIC. I use the measurement from flow of fund data, which is the less biased estimate, and also adjust the factors for inflation, tax revision and inventory change.

[Figure 1 series about here]

High National Savings Rate: Figure 1.1 shows China's national savings rate for selected years from 2000-09. The rate rose rapidly, beginning at 40% of GDP, reaching 50% of GDP in 2008, and finally exceeding 54% of GDP in 2009. This has been an enormous increase of more than 14 percentage points over the past nine years. China's large national savings has been mostly absorbed by domestic investment. During 2000-09, the growth in national savings was accompanied by growth in investment, from 35% of GDP in 2000 to 45% of GDP in 2009; the growth in investment, however, was slightly less than the growth in national savings. The saving-investment gap corresponded to a large current account surplus. Figure 1.2 shows the international comparison of savings rates from 2000-09. China's national

[10] For a more detailed discussion of the role of restricted financing opportunities and an undervalued exchange rate in boosting national saving, see Riedel et al (2007) and Lardy (2008).

savings rate of 54% is currently more than twice the average savings rate of 27% among advanced economies.

Rising Corporate, household and government savings: Figure 1.3 provides more detailed information about the decomposition of national saving: corporate (including financial firms), household and government. The corporate savings rate was greater than 23% of GDP in 2007 and more than doubled since the last decade. The share of corporate savings has risen markedly, accounting for almost half of national savings by 2000–07. The household savings rate is high but has remained relatively stable in the past five years. Government savings picked up rapidly from 2004 and rose from 2% in 2000 to the peak of 12% of 2007. Figure 1.4 presents the international comparison of the decompositions. China's household saving from 1992-2002 and 2003-07 is much higher than the average level of OECD countries. The corporate and government saving rate of OECD countries from 2003-08 is slightly lower than China's from 1992-02. However, from 2003-07, China's corporate and government savings increased by more than 10% of GDP. However, the household savings rate only increased about 1%. Overall, the increased corporate and government savings has contributed the most to the rise of China's national savings.

Restricted financing opportunities and financial market underdevelopment: Figure 1.5-1.7 show the investment, financing and performance between state owned firms and private firms. Investment growth has been especially rapid in non-state owned companies, both private and foreign companies. Private companies are likely the most financially constrained, have limited access to the formal financing market, and have to rely heavily on retained earnings (corporate savings) to finance their investments. On the other hand, since the early 2000s, profits in the corporate sector have risen markedly, especially among private companies. Figure 1.9 shows the significant gap between the deposit and lending rate from 2000-2009. Firms have faced very low or sometimes even slightly negative real rates of return on their bank deposits. Also, financial frictions indicate a disincentive to channel savings into investment.

In the following sections, I will use firm level data to compare the saving patterns based on macro data and examine the factors contributing to the accumulation of so much

corporate saving. Also, I will take advantage of these unique institutional features in China to explore the effects of different ownership structures on corporate saving behaviour.

3. Data and Empirical Strategies

As discussed above, Bayoumi et al (2010) have contributed pioneering work about the Chinese corporate saving puzzle. However, the limitation of their research, as they note, is that, if the question is related to a corporation's access to liquidity, then it would be appropriate to include minority stock investment and inter-corporate loans in addition to deposit and internal cash as savings. In this paper, I will adopt the measure of corporate cash savings which is closer to a liquidity perspective. The empirical strategy is similar to that used in Mclean (2011) and Frésard (2010). In addition, the annual data of gross saving, which is equal to profits minus dividend, might be under reported[11] as well and more biased at a yearly base. Therefore, I define the cash saving as the holdings of the cash and other liquid assets divided by asset, the liquidity measure of corporate saving[12].

[Table 1 about here]

[Figure 2.1 about here]

For the empirical analysis, I construct a unique data base of all non-financial listed companies in China from Q12002 to Q42009. Meanwhile, I collect information of the firm fundamentals, ownership information, industry allocation, location and macroeconomic conditions from various sources. In table 1, I provide detailed definitions of each variable used in the paper. The sample consists of quarterly data on 1721 non-financial publicly traded companies listed on the Shanghai and Shenzhen stock exchanges. I employ the CCER China Stock Database[13] to obtain the stock returns and financial statements. To be included in the sample, a company must have been listed for at least one year, and have filed the necessary financial information required for the analysis. The ownership related data,

[11] Cai and Liu (2009) find that China's firms tend to hide profits to avoid tax.

[12] The cash saving is the measure of the stock value rather than the flow value. Meanwhile, I investigate this measure at robustness check section as well.

[13] CCER Database is provided by *SinoFin Information Services*, which is the major financial data service company in China and is funded by China Centre of Economics Research of Peking University. For more information, see Jiang, Lee and Yue(2010).

namely, the percentage of shares held by the large shareholders (the largest to the tenth largest shareholders) and their identity (government-related or not) are collected mainly from annual reports of individual companies.

The China Securities Regulatory Commission (CSRC) states that a listed firm in China may have six types of shares: state, institutional (or legal person), foreign, insider, employee, and individual shares (A-shares). State shares are either shares retained by the state or shares issued to the state through debt-equity swap when privatizing a state-owned enterprise. Institutional shares (also called "legal person" shares) are shares owned by Chinese domestic legal entities, including domestic mutual funds, insurance companies, government agencies and other enterprises. Many of these legal entities are fully or partially owned by different levels of governments (provincial, municipal, or county). Foreign shares are shares owned by investors with non-mainland Chinese residency, including foreign investors and residents of Hong Kong, Macau, and Taiwan.

But, as Chen et al. (2009) argue, the reliance of prior studies on the legal definition of shares to infer investor type is very simplistic and ignores institutional realities. Most importantly, legal person shares can be owned by a number of heterogeneous entities, ranging from solely state owned enterprises to private firms. These entities have different objectives and incentives, so grouping them together, as done in previous studies, distorts the results and leads to erroneous conclusions. Similarly, state shares can be owned by different types of investors.

[Figure 2.2 about here]

I collected the ownership information by hand to obtain more precise information of the ultimate ownership. This investigation is based on ownership information data from CSRC. The main data used are the largest 10 shareholders for each listed firm, with shareholders' name, share percentage and ownership type. The ownership data are finally categorized into 4 types: state, domestic institutional, domestic individual, and foreign. I define a dummy "type" for state ownership, which equals one if it is state-owned, and zero otherwise. Overall, state ownership represents 68% of all samples.

Moreover, I exploit the detail of the export firm data from the Ministry of Commerce and Ministry of Customs. I obtain the customs data from the internal statistics, reports and publications of functional agencies (MOC and Customs Clearance of Reporting) between Q1 2002 and Q4 2009. Collecting the export data involves using a web crawler (Java program) to download each individual export document and hand-matching it with firm level financial data. The dataset also contains information about trade partners and currency transactions. The information and industry allocation is consistent with OECD's China economic studies (2010)'s findings. Finally, I chose the following firms as our industry sample: Major Export Industries in China: C1 Textile, Apparel and Leather; C5 Electronics; C7 Electrical Equipment Manufacturing; G81 Communication and Related Equipment Manufacturing; and G83 Computer and Related Equipment Manufacturing. Overall, my sample consists of 11,582 observations of our export firms, which represent 27% of the entire sample.

[Table 2 about here]

Table 2 presents the sample distribution. Panel A reports the yearly distribution; Panel B shows the industry distribution following CSRC classification; Panel C provides the information about ownership distribution. Panel D presents the export firm distribution. Also, I report the distributions within industry by ownership types.

[Table 3 series about here]

Table 2 and 3.1 report some descriptive statistics for our sample. In total, I have 11,036 firm-year observations. Chinese firms all have December year-ends, and the financial information for year t is based on fiscal year-end t-1 financial reports. I report the mean, median, and standard deviations for the variables. All variables are winsorized at 1% and 99%, except for reform dummy variable, ownership measures, and macroeconomic and location indicators. The average cash saving in our sample is 15.1% of firm assets, which is high but not exceptional among the highest global level[14].

Table 3.2 reports some descriptive statistics for our sample by ownership. Notably, the average cash saving over total assets of private firms is 1.3 percentage points higher than

[14] For international experience, see Kalcheva and Lins (2007) and Lins, Servaes and Tufano (2010). The overall mean is 12%, which ranges from a low of 4% for firms from Argentina to a high of 16% for Norwegian and Japanese firms.

state- owned firms. Table 3.3 reports some descriptive statistics for our sample by expert industry. The average cash saving over total assets of export firms is 2.1 percentage points to higher than non-export firms. Table 3.4 reports some descriptive statistics for our sample within export industries. The average cash saving over total assets of private export firms is 1.1 percentage points higher than state- owned firms. Table 3.5 reports some descriptive statistics for our sample between industries by ownership. The average cash saving over total assets of private export firms is 2.5 percentage points higher than private non-export firms. Table 3.6 reports some descriptive statistics for our sample before-after financial crisis. The average cash saving over total assets of firms after 2008Q1 is 2.3 percentage points to higher than before the crisis.

[Figure 4-8 series about here]

Figure 4- Figure 8.2 show the cross sectional average of cash savings from 2000-2009 by ownership, industry and within subsamples. To summarize, our firm level corporate saving pattern is similar to the pattern shown by the macro data. In the next section, I will employ different identification techniques to explore the drivers of corporate savings.

3.2. Empirical Strategies

Why do corporations save cash and liquid assets? In particular, Almeida et al. (2004) present the idea of precautionary cash savings. Specifically, they show that, when future projects are valuable and when future external financing is uncertain, corporate saving becomes a key element of a firm's financial choices. This is consistent with the general view that enhanced financial flexibility, in other words, ensuring a firm's ability to finance present and future investment undertakings, is the main goal of managers' financial decisions. They show that firms save more intensively when they anticipate valuable future growth opportunities - when their Tobin's q (market-to-book ratio) is high – and when their access to external financing is limited (Frésard, 2009).

To explore why Chinese corporations accumulate huge savings, I analyse the factors that influence their saving decisions. Following the approach by Bates et al. (2009) on the U.S. experience, I employ three kinds of regression techniques to examine the effects from firm fundamentals, ownership, and macroeconomic conditions. To start with, I apply the baseline

regression with OLS, random effect and fixed effect regressions. Also, I conduct an additional test of the joint effects of ownership, investment opportunities, and access to finance. I start with a baseline estimate of cash saving by the following reduced form regression

$$Saving_{j,t} = \alpha + \beta_1 Ownership_{j,t} + \sum_{i=2}^{n} \beta_i \ FirmFactors_{j,t-1} + \delta AccessFinance_t + Controls + \eta_k + \lambda_c + \theta_t + \varepsilon_{k,c,t} \quad (1)$$

The dependent variable in all regressions is the natural log of (cash saving/ total assets). With this specification, the coefficient $\beta_1$is interpreted as measuring the correlation between saving and state ownership (government agencies, state-owned firms, and state controlled firms) of the firm in contrast to private ownership (domestic institutions, individuals and foreign entities), holding constant sector, macroeconomic indicators, time, and other firm characteristics. The coefficient δ is interpreted as measuring the correlation between saving and access to finance, which indicates the local financial market's development, holding constant sector, macroeconomic indicators, time, and other firm characteristics. In the following panel regressions, I also control for the firm-specific and macro level factors, sector (η_k), province (λ_c) and time (θ_t) effects, where, for firm i in year t, all independent variables are as defined in table 1.

Regarding the firm level factors, I examine the series of variables that are generally believed to affect the marginal costs and benefits of cash saving[15]. I also adopt major factors summarized from Cardarelli and Ueda (2006). Their finding is that firms that have accumulated more cash saving relative to their total assets tend to have higher leverage, a higher share of intangible assets, and higher Tobin's q (which proxies for higher expected profitable investment opportunities). At the same time, however, cash-rich firms are also the ones with larger excess cash flow (the difference between gross savings and capital spending), suggesting that strong profitability has also played a role.

Moreover, most studies use Tobin's q based on stock market valuation to capture future investment opportunities. Riddick and Whited (2009) question whether those explain a

[15] See Opler et al. (1999) for a summary of firm level factors on corporate cash saving.

firm's propensities to invest because they don't adjust for measurement error in Tobin's q. Also, the market to book value of q might be systematically biased and serially correlated (Bond and Cummins, 2001). Following the approach by Kalcheva and Lins (2007), I adopt the less biased measurement, industry average q. I also study the interaction with ownership and further interaction with access to finance. I expect to shed light on more sensitive impacts on cash saving by checking the joint effects.

Turner (1988) finds that the domestic savings are negatively related to the real exchange rate. Recently, Antràs and Caballero (2009) study how financial frictions and the saving rate shape the long-run effects of trade liberalization on income, consumption and the distribution of wealth in financially underdeveloped economies. I also include access to finance, macroeconomic conditions, and location proxy into my analysis. I employ an indicator variable denoting whether the firm is based in a city that is an Economic Zone or SEZ (Shenzhen, Zhuhai, Xiamen, Shantou, and Hainan) as a measure of trade openness. Generally speaking, SEZ cities have more liberal trade policies than other local governments, particularly for private and foreign firms (see Calomiris et al. (2010) for an extended discussion). Also, I use an indicator variable denoting whether the firm is based in a city located in a coastal area. Usually, coastal cities have better access to the global market in terms of international trade.

Opler et al. (1999) found that firms tend to hold more liquid assets if their industry has greater than average cash flow volatility. From this approach, I note that cash savings vary with industry characteristics. To address the endogeneity concerns, I adopt the difference-in-difference approach in which I compare the saving behaviour of export firms before and after the financial crisis. The financial crisis allows us to test the effect of an unexpected external demand shock on export firms; I find that the shock has had direct impact on corporate saving behaviour.

To identify the sensitivity results, I analyse the private firms only between treatment group and control group. Of course, the firm fixed effects subsume the level effect of cash saving and control for all sources, observed or unobserved, of time-invariance in Tobin's q across firms. Standard errors are heteroskedasticity-consistent and clustered at the firm level, following Duchin, Ozbas and Sensoy (2010). The following specification will be employed to

identify the causal impact between precautionary motive and corporate savings by employing difference-in- difference (DID) estimation.

$$Saving_{i,t} = \alpha_1 + b_1 Crisis_t + c_1 Export_i + d_1 Export_i * Crisis_t + \beta_1 Ownership_{j,t}$$

$$+ \sum_{i=2}^{n} \beta_i \ FirmFactors_{j,t-1} + \delta AccessFinance_t + Control + \varepsilon_{i,t} \qquad (2)$$

Where Crisis_t is a dummy variable for the financial crisis period, which started in 2008 Q1. The dummy variable Export_i captures possible differences between exports and non-exports groups prior to the crisis shock. The time period dummy captures aggregate factors that would cause changes in saving even in the absence of a policy change. The coefficient of interest, d_1 multiplies the interaction term, $\text{Export}_i * \text{Crisis}_t$, which is the same as a dummy variable equal to one for those observations in the treatment group in the second period. Importantly, the coefficient of interest,d_1, measures the cash saving gap between export firms and others after the financial crisis.

The DID method is appropriate if the control group and treatment meet up with common shock and treatment is random. In this paper, the cash saving decision might be the function of unobservable factors. For example, the effects of ownership structure from export and other firms might obscure our result. Due to this concern, I select the subsample of privately owned firms from export and non- export firms, and then apply DID estimation to explore the robustness of the result. In addition, I also provide evidence of the determinants of investment regression, which is consistent with our results.

4. Results

In this section, I first report the results of our cash savings regression models and joint effect regression models and then report difference-in-difference results of our cash saving and investment model.

4.1. The Baseline Regressions of Cash Saving

Table 4 shows that differences in firm characteristics are the major drivers of cash saving from 2002Q1 to 2009 Q4.

In model (1), I attribute the increase in cash savings to differences in specific firm

characteristics. First, leverage and cash savings are positively and significantly related. This is consistent with previous research suggesting that it is more worthwhile for firms to reduce debt than to hold more precautionary cash balances when leverage is high (Opler, et al, 1999). Second, cash savings are negatively associated with "hard" assets such as inventory, receivables, and fixed capital, which is consistent with international experience (Capkun and Weiss, 2009). Third, size displays a positive sign, indicating that larger firms tend to save more cash. Fourth, the fixed asset over total asset, the index of the tangibility of firms, is negatively correlated with cash saving. It means that firms characterized by a larger share of intangible assets (e.g., patents and goodwill) should hold more cash savings, given the higher cost of external finance for these type of non-collaterizable assets, also consistent with global evidence by Cardarelli and Ueda (2006).

[Table 4 about here]

Importantly, the investment opportunity, measured by Tobin's q and industry average q, is positively correlated with a firm's cash saving. It suggests that a firm with a higher Tobin's q should accumulate more cash, as cash shortages would mean these firms have to forgo highly profitable projects, which is in line with Aleida, Campello and Weisbach (2004). Finally, similar to the finding of size effect, the profitability proxy, ROA (return of asset), is positively related with cash saving. It also suggests that better performing firms accumulate large cash savings.

In model (2), I start by documenting that corporate savings are sensitive to ownership structure. Specifically, model (2) of table 4 includes the state ownership dummy and concentration index, HHI5, in the analysis. Interestingly, I observe a negative and significant association between cash saving and state ownership, with a coefficient for state dummy estimated at 0.004, significant at less than the 5% level. It indicates that privately owned firms tend to accumulate higher cash savings. Also, firms appear to save more when they have more concentrated ownership. Firms with a more concentrated ownership structure are likely to save more cash, which is in line with the finding that, the greater the voice the shareholders have in governance, the more shareholders are able to exercise their rights and prevent firms from hoarding cash (Cardarelli and Ueda, 2006).

Model (2) presents the most important finding of this paper. This finding confirms the

idea that, on average, private firms accumulate more cash savings compared with state owned firms. Based on the annual income statement, Bayoumi et al (2010) find that there is no significant difference in savings behaviour between Chinese majority state-owned and private listed firms. My results are different from their findings, perhaps due to my high frequency and quality quarterly data [16]and more precise measurement of savings.

In model (3), I observe the positive relationship between macroeconomic condition (log GDP per capita) of firm location and cash saving. This relationship indicates that, on average, a firm tends to save more in a wealthier city. This suggests that the relationship of "Piercing the Corporate Veil"[17] between household and corporate saving would not hold in China.

Also, firm located in economic zones and coastal areas tends to have higher saving. One explanation might be that these areas are more open to international trade and thus might accumulate more cash saving due to the firm gaining more profits by exporting abroad based on undervalued exchange rates.

Furthermore, I find the negative relationship between cash savings and access to finance, which is the measurement of financial development. This finding suggests that firms located in more financially developed cities tend to have less cash saving. This finding provides evidence that, on average, firms accumulate more cash savings when they have limited access to finance because they are located in a city with a less developed financial market.

In models (4) and (5), our results with fixed effects and random effects are consistent with model (3). In summary, in table 4, I find that inventory is negatively related to cash savings. Larger firms tend to have higher cash savings. So do firms with a larger share of intangible assets, higher leverage and investment opportunity (Tobin's q and industry average q), and more concentrated ownership, as well as firms in coastal and economic zones. Macroeconomic conditions also affect cash savings.

The baseline regressions of cash savings present the central findings of my paper, which

[16] I take advantage of using quarterly data over yearly data from 2002Q1 to 2009Q4. The high frequency of quarterly data allows us to have more observations to measure cash saving within 7 years.

[17] Poterba (1987) indicates that, in the United States, a $1 increase in corporate saving is likely to reduce household saving by $0.50-0.75.

will be checked in the following section. In table 4, using insights on ownership and access to finance, I explore why private firms tend to accumulate more cash savings[18].

4.2 Interaction Effects Regressions for Cash Saving

In table 5, I directly assess whether ownership and investment opportunity affect a firm's cash saving decision. I regress cash saving with an interaction between ownership and investment opportunity (Tobin's q and Industry average q) and a further interaction between ownership and access to finance.

[Table 5 about here]

In model (1) through model (3), I examine whether the absence of a relationship between investment opportunity and cash savings changes when ownership is explicitly considered. To accomplish this, I add an interaction term between Ownership and Tobin's q, but find that this interaction is significant only in the random effect regressions. In contrast, if I interact ownership with industry average q, I find that cash saving has a significantly negative correlation with the interaction between industry q and ownership dummy. Overall, the first two models of table 5 indicate that cash savings are highly sensitive to ownership. Also, when industry average investment opportunity is more profitable, private firms tend to save more.

In addition, in model (1)-(3), I repeat the previous tests using the interaction between ownership and access to finance. I find that cash saving is significantly and positively related with the interaction between access to finance and ownership. This finding suggests that private firms tend to save more when the firm is located in a city with less developed financial markets. However, this joint effect does not apply in random and fixed effects models.

Consistent with model (3), model (4)-(5) shows what is driving cash savings when a firm is privately owned, if we only consider the industry average q,. Therefore, I estimate the model with an interaction between industry average q and ownership. As discussed above, the results show that the coefficient is negative and more significant than the results

[18] A similar result has been provided by Cull and Xu (2005). They find that the share of private ownership has a positive effect on profit reinvestment rates.

in Model (3). Meanwhile, the result of access to finance has not changed too much and is still negatively correlated with cash saving. When we include the location index for a coastal city, we still observe the positive correlation and significance at less than the 5% level. The results show that if we control for industry average investment opportunity, firms at coastal cities appear to accumulate more cash savings.

Models (7)-(9) repeat tests similar to model (4)-(6), using the interaction between industry average q and ownership dummy. In model (7), I include the economic zone in the analysis and find that the sign has not changed and is significantly correlated with firm's cash savings. The joint effects between ownership and industry average q and between ownership and access to finance are consistent with what we find in previous regressions.

Taken together, our results on the determinants of cash savings in table 5 provide some explicit evidence that investment opportunity, with its associated ownership structure, is linked to higher levels of cash savings. Also, our results present an interesting joint relationship between ownership and access to finance. The interaction regressions suggest that private firms in cities with less developed financial markets[19] tend to accumulate more cash savings. However, the explanatory power of industry average q is better when we exclude Tobin's q. Therefore, after more sensitivity checks by ownership dummy, it is clear that privately owned firms have sufficient internal resources, which might enable them to better cope with future investment opportunities, particularly when their access to capital markets is limited. Therefore, when privately owned firms find themselves short of funds, they might have to forgo profitable investments. In the next section, I will identify the precautionary motive for firms to accumulate cash savings during a crisis.

4.3. Difference in Difference Regressions for Cash Saving and Investment

In the baseline regression section, we find that private firms tend to save more when firms with valuable future investment opportunities and limited access to finance might accumulate precautionary savings. How can we identify the causal relationship between cash saving and precautionary motive? The global financial crisis of 2008 created an opportunity to draw crisp inferences about corporate saving and investment behavior. In

[19] Our results are consistent with the recent survey by Ayyagari, Demirguc-Kunt and Maksimovic (2010) about "formal versus informal finance in China."

line with recent crisis studies by Ivashina and Scharfstein (2010) on bank lending, Campello et al. (2010) on liquidity management and investment, and Duchin, et al. (2010) on external finance and investment, I employ the difference-in-difference method to shed light on the effect of a financial crisis on corporate cash saving and investment decisions.

To analyze the impact of a crisis on corporate cash saving and investment, I first examine the change in cash saving between export firms and non-export firms, both in the pre-crisis and after-crisis period. The model (1) in table 6 presents the estimates from the firm level factors. It shows that the quarterly cash saving over assets by the average firm significantly increased by 1.3 percentage points after the crisis. The magnitude of rising cash saving is consistent with the aggregate statistics. In additional, I find negative correlations between cash savings and inventories. The coefficients of leverage, size, intangibility, Tobin's q, Profitability (ROA), Industry Q and cash saving remain significantly positive.

[Table 6 about here]

In model (2), I include the ownership structure in the analysis. First, there is a significantly positive correlation between the crisis interactions with the export firm dummy and cash saving. It indicates that corporations saved more cash after the crisis. Also, I again find negative correlations between cash savings and inventories. The coefficients of leverage, intangibility, profitability (ROA), Industry Q and cash saving remain significantly positive. As a result, I find the state owned dummy is negative correlated with cash saving. Moreover, the ownership concentration index is positively related with cash saving. Those findings show that private firms and firms with more concentrated ownership save more, controlling for other factors.

In model (3), I include the factors of macroeconomic conditions, location and access to finance into our analysis. The previous results are fairly stable and similar. Except for the positive impact between crisis and firm cash saving, I find that, on average, wealthier cities tend to have high corporate cash saving. Similarly, firms located in coastal cities and economic zones have higher cash saving. Furthermore, the relationship between access to finance, the measurement of financial development, and cash saving appears negative. It shows that firms located in cities with more developed financial markets tend to accumulate less cash savings. Notably, all of the results are statistically significant and remain

statistically significant under each model.

Overall, table 6 displays the difference-in-difference method to identify the impact on cash saving during the crisis period. The financial crisis of 2008 provides a direct negative shock to the external demand of export industry. Therefore, I simply select the export firms as the treatment group and other firms as the control group. The fairly stable results show that corporate cash saving increases significantly following the crisis. Additional fixed effects and random effects regressions also show that export firms increased cash saving significantly during the crisis period.

This finding challenges the mainstream view of the positive relationship between cash reserves and product market performance (Frésard, 2010). The implication from established studies is that the worse performing firms might tend to have less saving. After the crisis of external demand shock, export firms should have had worse performance, so lower savings. This paper shows that, after the negative external demand shock, the declining performance of export firms tended to increase the cash saving ratio[20]. One interpretation of this result is that the precautionary motive under financial friction increases corporate propensity to save. Especially in the case of restricted financing opportunities and less developed financial markets, private firms have to hoard cash for future investment opportunities. Therefore, firms retain cash for precautionary reasons. As a result, having sufficient internal resources enables them to cope better with external shocks, particularly when their access to finance is limited.

[Table 7 about here]

Table 7 presents several analyses to address concerns about plausible impacts on corporate investment. Model (1) shows that investment as a fraction of assets declined by 4 percentage points during crisis periods. This result is consistent with the average summary statistics that the average capital expenditure decreased after the crisis. Similarly, in model (2) and (3), with further investigations of random and fixed effects, I find that investment and Tobin's q decline significantly following the crisis. During a crisis, when the precautionary motive causes firms to save more, they forgo current investment

[20] Table 3.6: the summary statistics by crisis period also show the declining profitability of the export firms. The difference of average ROA remains significantly negative after the crisis.

opportunities, although the resulting cash reserves may position them to take advantage of future investment opportunities.

5. Robustness Checks

To assess the validity of the results, I empoy sevaral robustness checks in this section. One concern is whether an export firm's cash saving behavior is driven mainly by ownership structure. In addition, state owned firms might not share the same factors as private owned firms have.

To address these concerns, I repeat the difference-in-difference approach again only for private owned firms. The treatment group would be the privately owned export firms and the control group would be other private owned firms. Table 8 shows that the quarterly cash saving over assets by the average firm significantly increase by 1.7 percentage points after the crisis. The coefficients for OLS, Fixed effect and random effect are higher than all samples above.

[Table 8 about here]

In addition, I again find negative correlations between cash savings and inventories. The coefficients of intangibility, ROA, industry Q and cash saving remain significantly positive. Moreover, the ownership concentration index is positively related to cash saving. The findings show that firms with more concentrated ownership save more, controlling for other factors. In table 8, I find that, on average, wealthier cities tend to have higher corporate cash saving. Similarly, the firms located at coastal cities and economic zones have higher cash saving. Furthermore, the relationship between access to finance, the measurement of financial development, and cash saving appears negative.

In addition to the fact that state owned firms can easily access finance, we also have to consider the supports or subsidies from the government. Because of the different characteristics of state owned firms, I exclude them from the DID regressions. Our regressions remain stable with statistically significant results for privately owned firms when we remove the effect of state owned firms, which are 69% of the sample.

Another potential issue related to the sampling is whether export firms have a

unique pattern of corporate savings and drivers. To test whether the relationship between cash savings, ownership structure, investment opportunity and ROA are different for firms of different industries, I split the sample into export firms and others. In table 9, I replicate the similar baseline and interaction factors regressions and provide more robust results within the export industry.

[Table 9 about here]

In model (1), the results of most firm level factors remain stable and consistent with previous studies. However, I cannot find the significantly negative correlation between ownership and cash savings. Also, the explanatory power has declined and the joint effect between ownership and Tobin's q is not significant. Moreover, the correlation between coastal city, economic zone and cash saving is not significant either. But, in model(2) and (3), ownership and cash saving are significantly negative correlated in fixed effect and random effect regressions. In fact, privately owned export firms also have high cash saving compared with state owned export firms.

In model (4)-(6), I find no relation between cash saving and the interaction between owernship and investment opportunity (Tobin's q and industry average q). However, the coefficients of ownership and cash saving are significant and negative. Those finding suggest that, within the export industry, private firms tend to save more. Moreover, the results show that cash saving is sensitive to leverage, ROA, inventory and industry average q are sensitive. On the other hand, the relationship between access to finance and cash saving provides the evidence that corporations save more if they are located in cities with less developed financial markets.

6. Conclusion

The increasing importance of China in the world economy contrasts with our limited understanding of how firms have achieved remarkable success in expanding growth and accumulating huge savings. The issue of high saving in China has recently attracted much attention, in large part due to the heavily debated issues about global imbalance and the financial crisis. Prior dominant views about corporate saving have two totally different opinions. IMF (2009) finds that the high corporate savings rate is mainly due to corporate

governance problems in state-owned firms, especially the low dividends paid out by those firms. On the other hand, Bayoumi et al (2010) find that there is no significant difference in the savings behaviour and dividend patterns between Chinese majority state-owned and private listed firms.

In this paper, from the liquidity perspective, I take a careful look at the saving decisions of Chinese firms, using a hand-collected database of all publicly traded companies in China from 2002Q1 to 2009Q4. I find that privately owned firms and export firms remain significantly higher in corporate cash saving. This paper shows that the precautionary motive plays a crucial role in explaining firms' savings behavior. This negative association indicates that privately owned firms tend to save more precisely when firms with valuable future investment opportunities and limited access to finance might accumulate precautionary savings.

To address endogeneity concerns, difference-in-difference (DID) estimations support the causal impact of the precautionary motive on corporate savings. Surprisingly, I find that export firms tended to save more during the recent crisis. My interpretation of there results is that the precautionary motive under financial friction increases corporate propensity to save[21].

My findings have several policy implications. The usual view of corporate governance of state owned companies suggests that state owned companies should pay dividends. In my approach, however, I find that the precautionary motive and ownership structure play crucial roles in explaining firms' savings behavior. As evidence of the precautionary motive, private firms have a higher saving rate. Therefore, how to encourage the investment of private savings, rather than the dividend behavior of SOE, turns out to be central to the debate.

Finally, it is worth mentioning that not only private firms but export firms have more cash savings. Why do export firms accumulate high cash savings as well? The relationship between exchange rate policy and corporate cash saving might receive more attention and further investigation.

[21] Another approach is to study the effects of internal capital markets. This is material for future research.

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Figure 1.1
China: National Saving and Investment (% GDP)

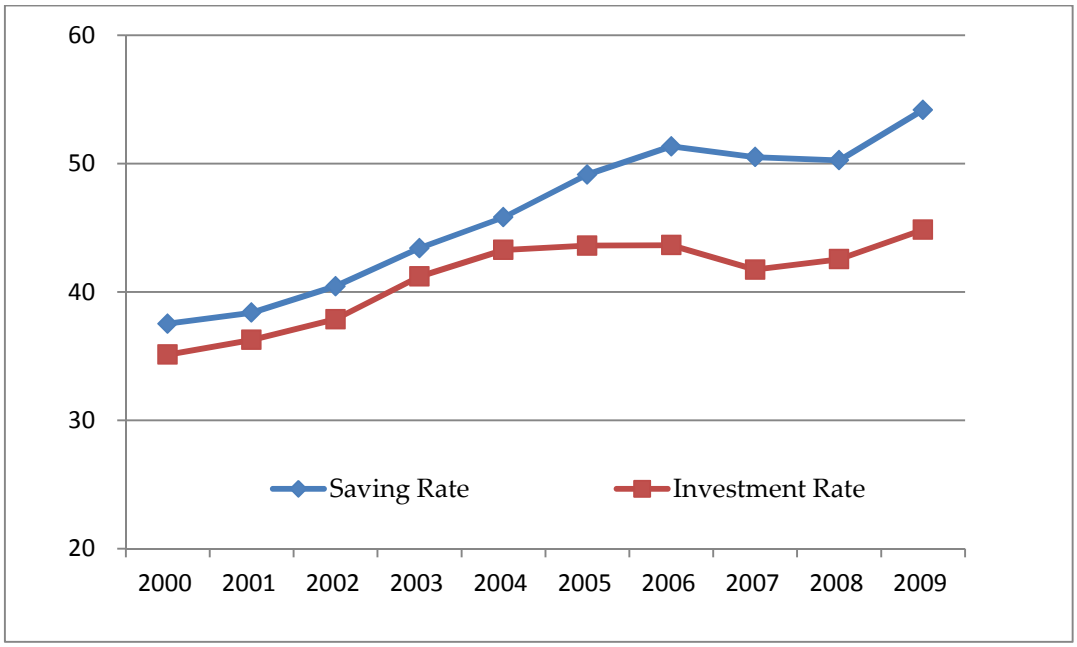
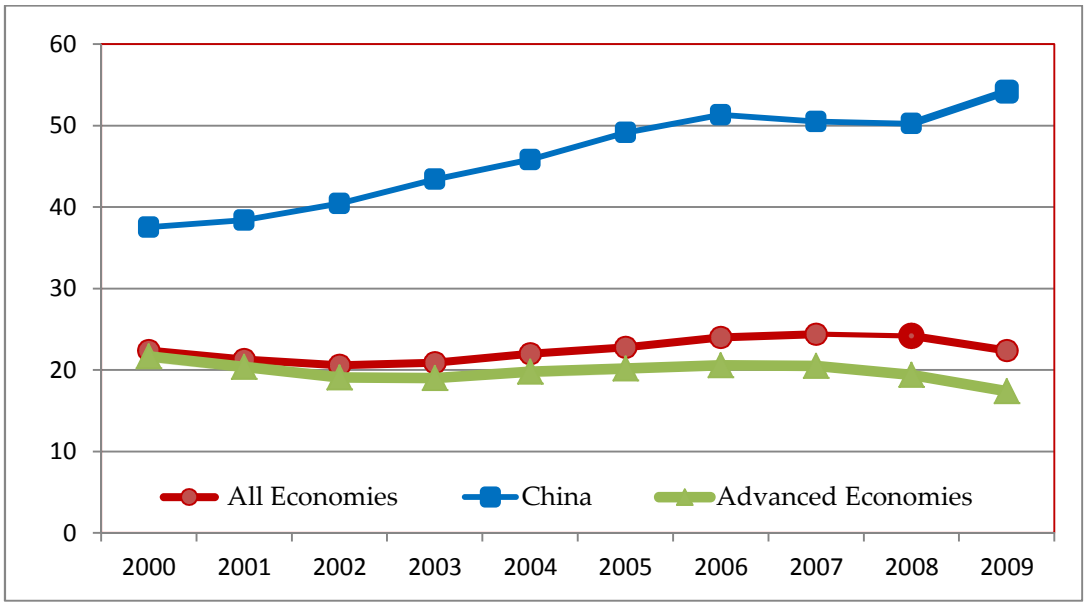


Figure 1.2
National Saving (% GDP): International Comparison



Source: China Statistical Yearbook, CEIC, IMF and OECD, 2010

Figure 1.3
China: National Saving Decompositions (% GDP)

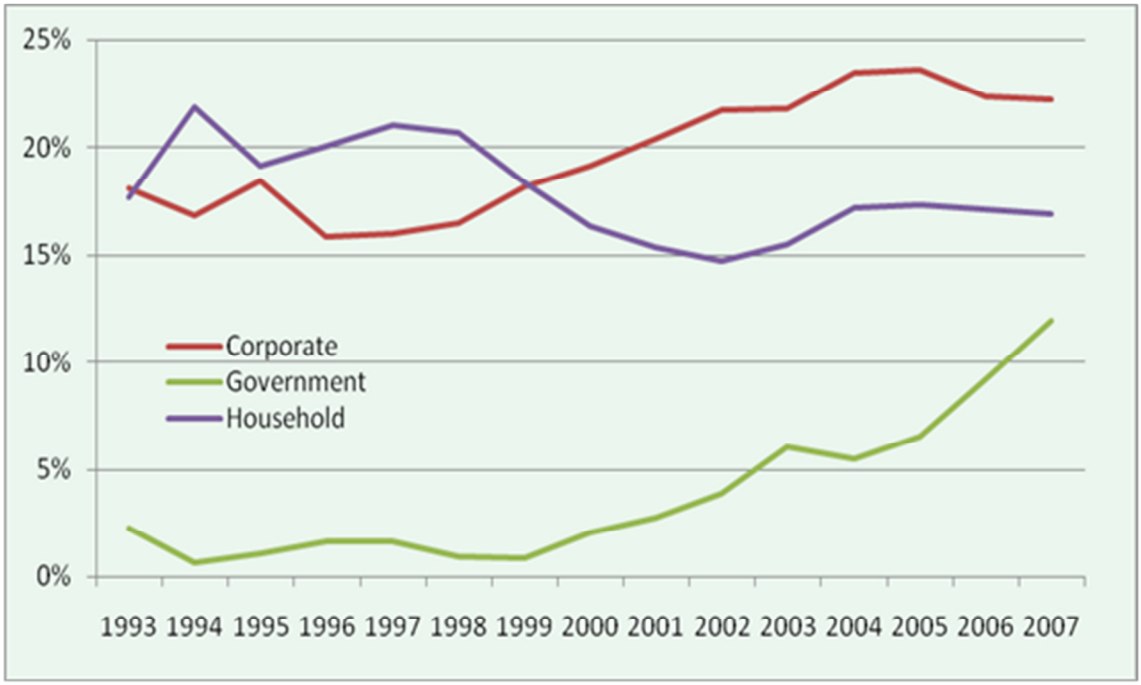
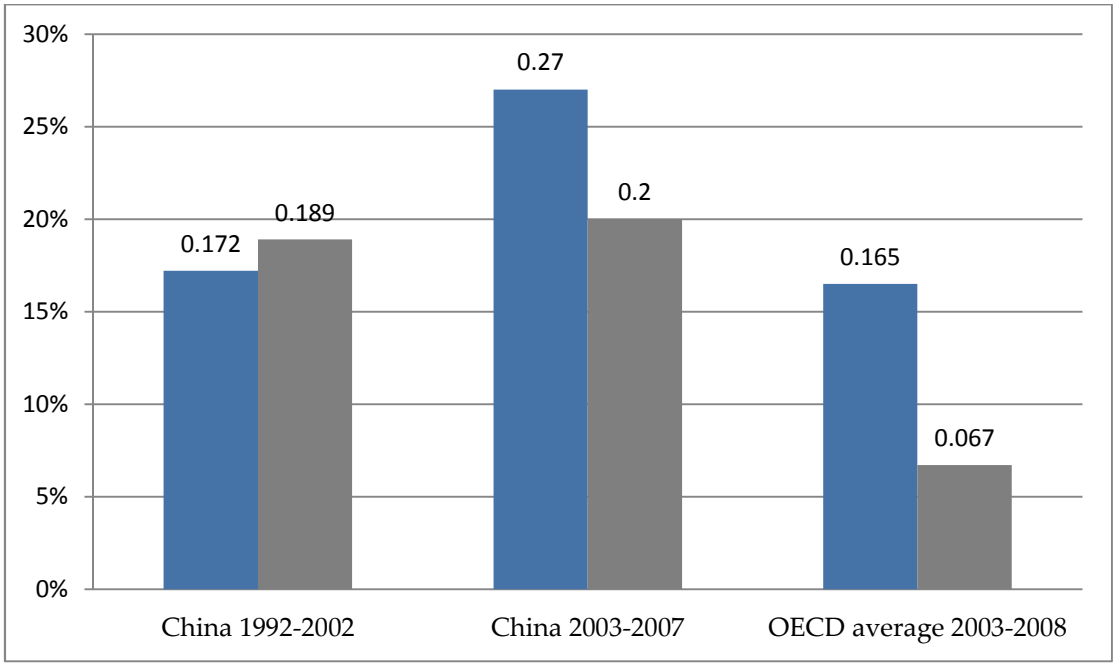


Figure 1.4
National Saving Decompositions: International Comparison (% GDP)



Corporate Saving+ Government Saving/ GDP
Household Saving/ GDP

Source: China Statistical Yearbook, CEIC, IMF and OECD, 2010

Figure 1.5
China: Domestic Enterprise Investment Spending (% GDP)

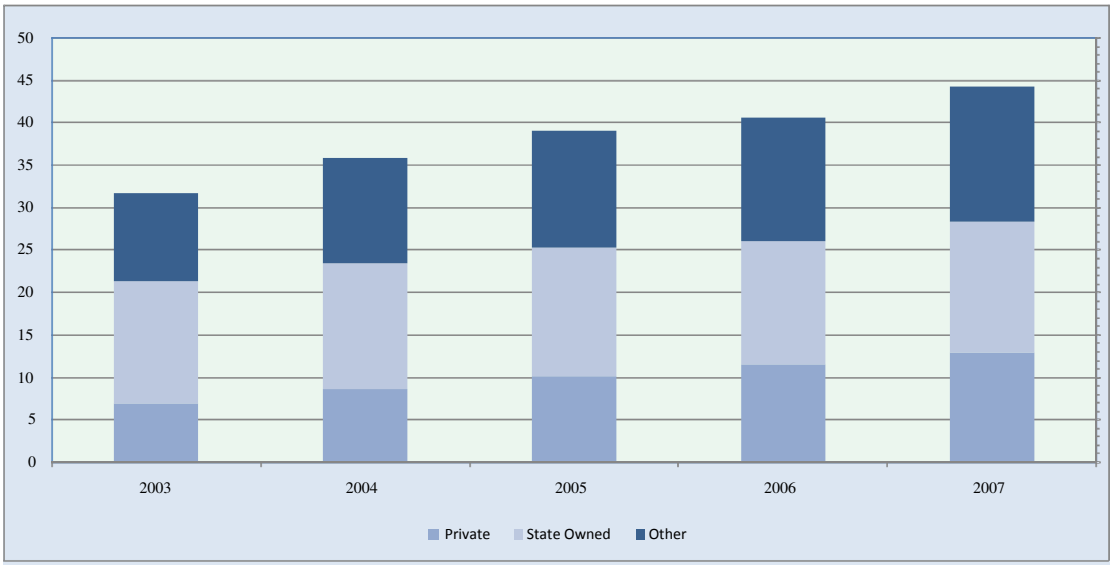
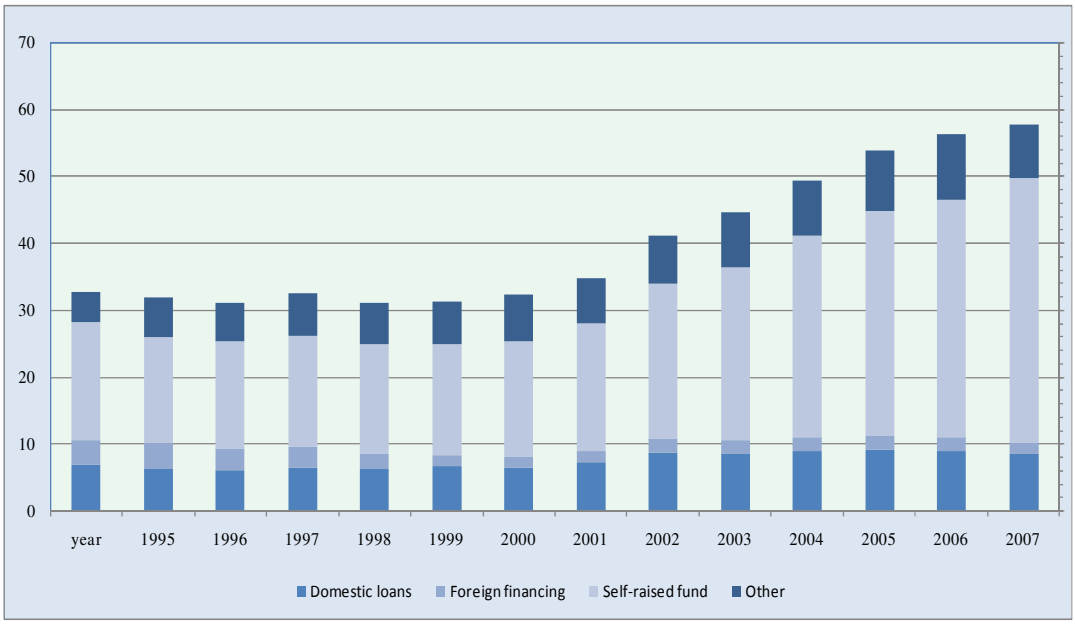


Figure 1.6
China: Fixed Asset Investment Financing (% GDP)



Source: China Statistical Yearbook, CEIC, IMF and OECD, 2010

Figure 1.7
China: Industrial Enterprise Profits (% GDP)

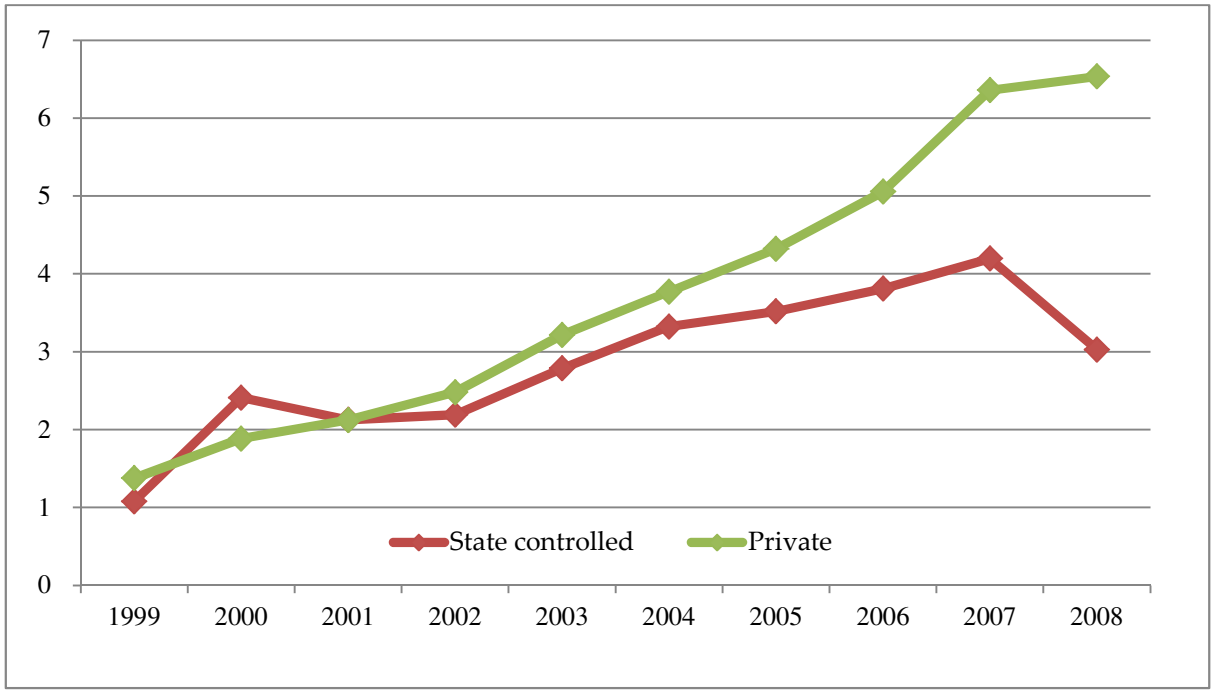
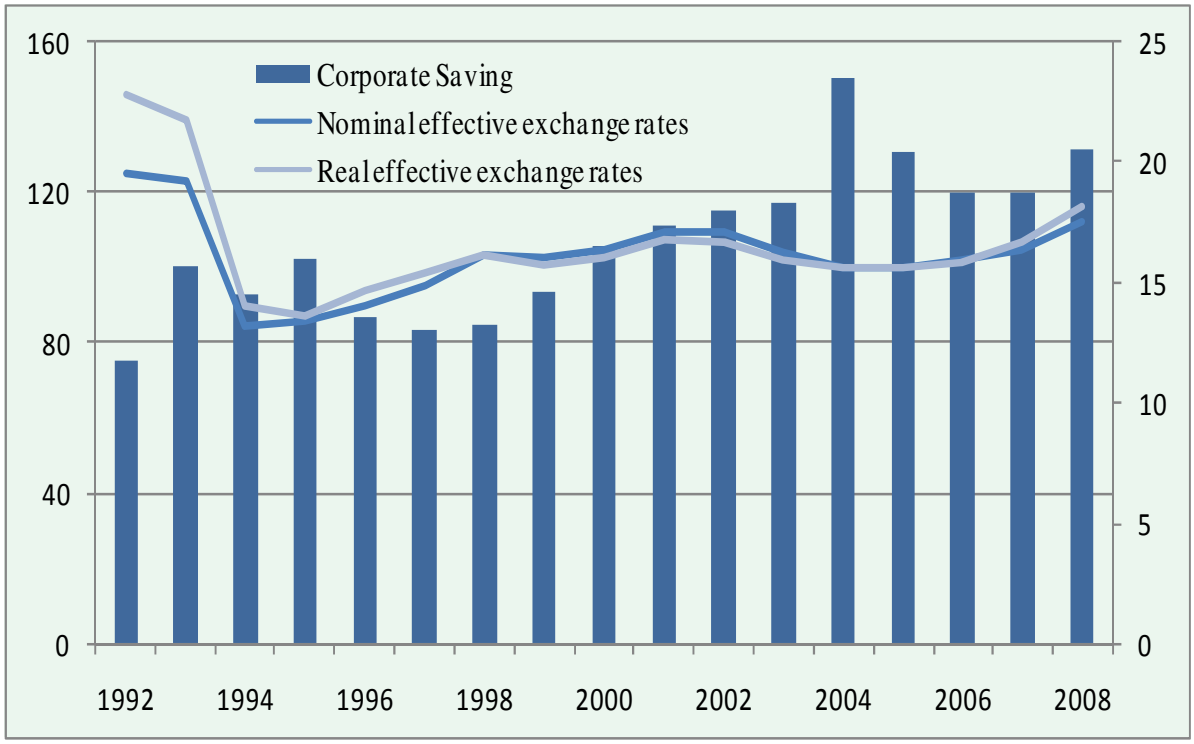


Figure 1.8
China: Corporate Saving Rate and Exchange Rates Movement
(%Y to Y)



Source: China Statistical Yearbook, CEIC, IMF and OECD, 2010

Figure 1.9
China: Deposit and lending Rate (Percent per annum)

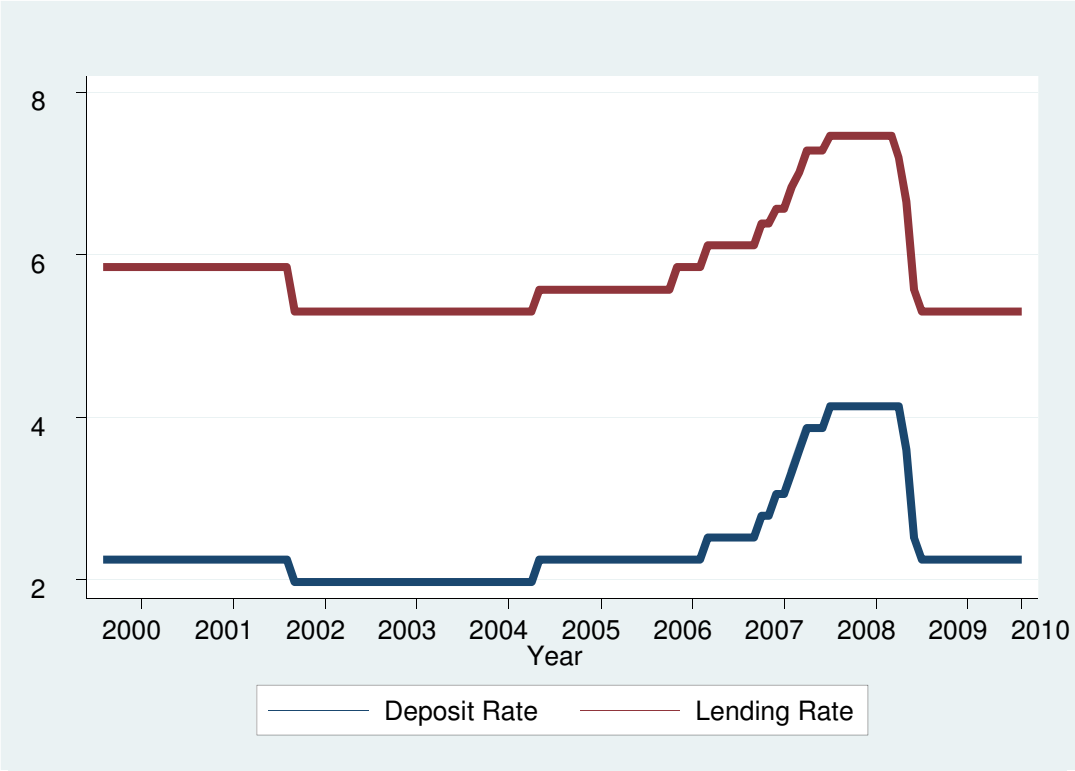
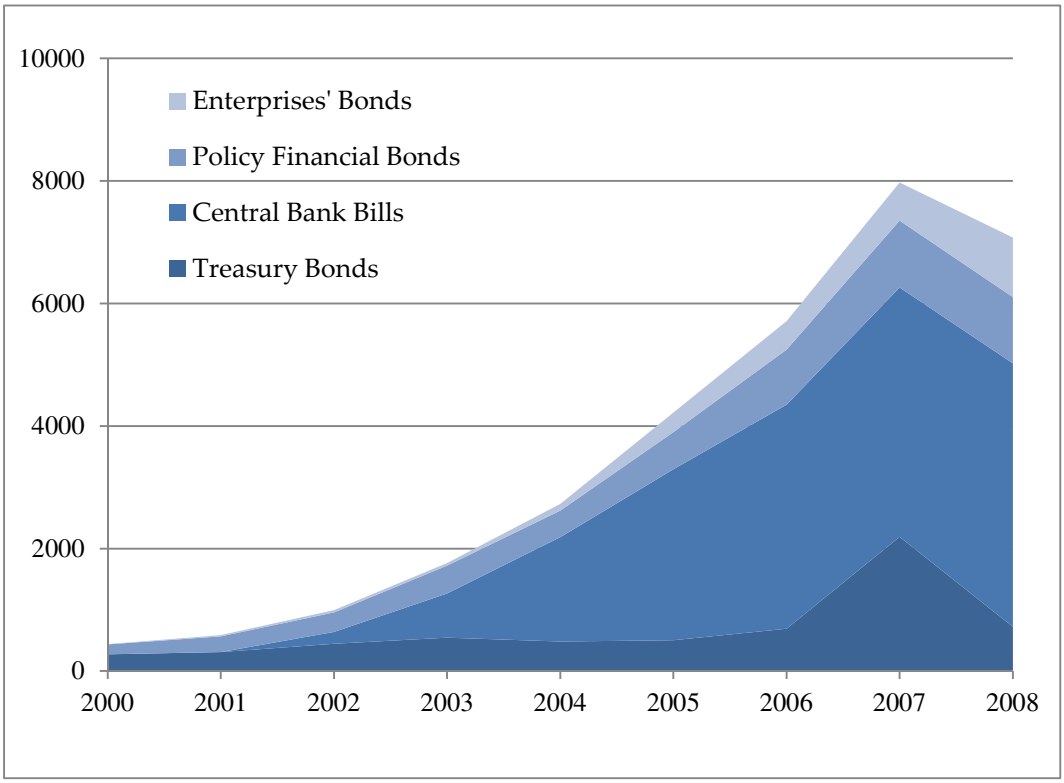


Figure 1.10
China: Bond market issuance (CNY Billion)



Source: China Statistical Yearbook, CEIC, IMF

Figure 2.1: Geographic Distribution of Companies (2009)

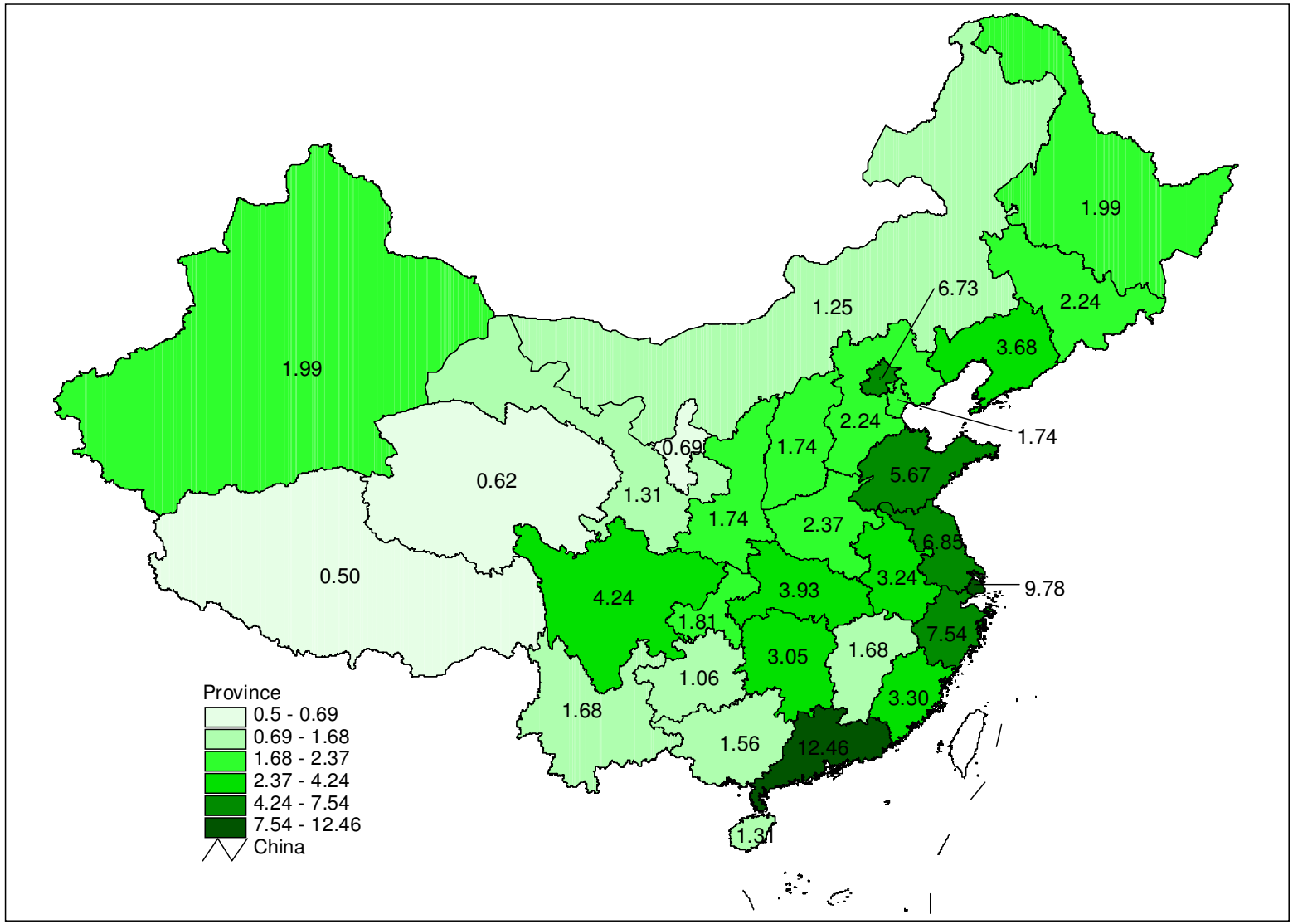


Figure 2.2: Ownership Structure of Chinese Listed Firms

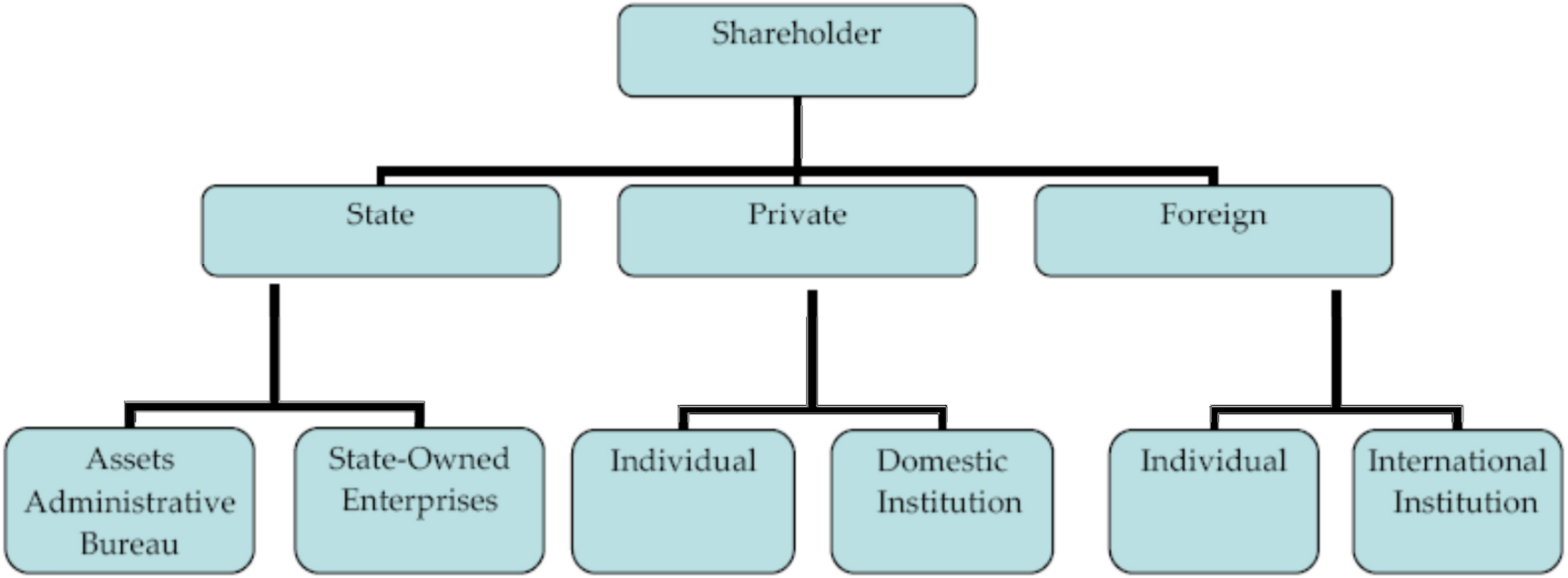


Figure 3.1: The Sample Distribution of Major Variables

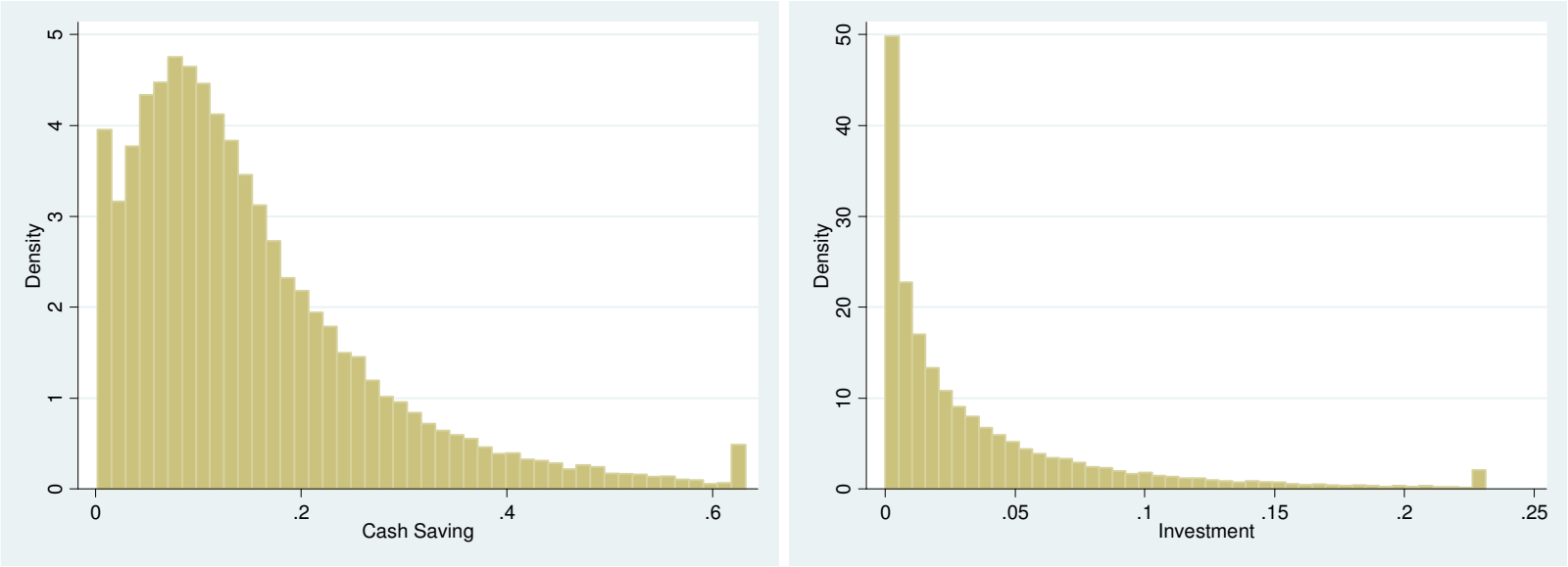


Figure 3.2: The Sample Distribution by Ownership

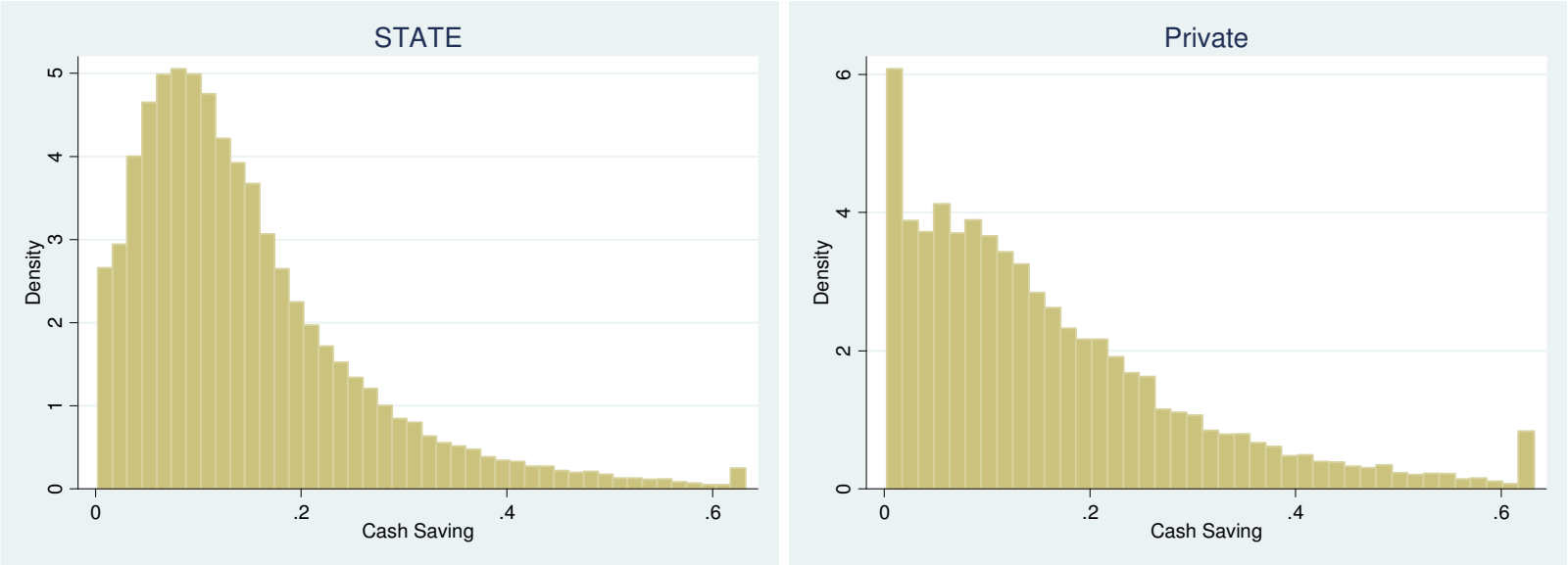


Figure 3.3: The Sample Distribution by Industry

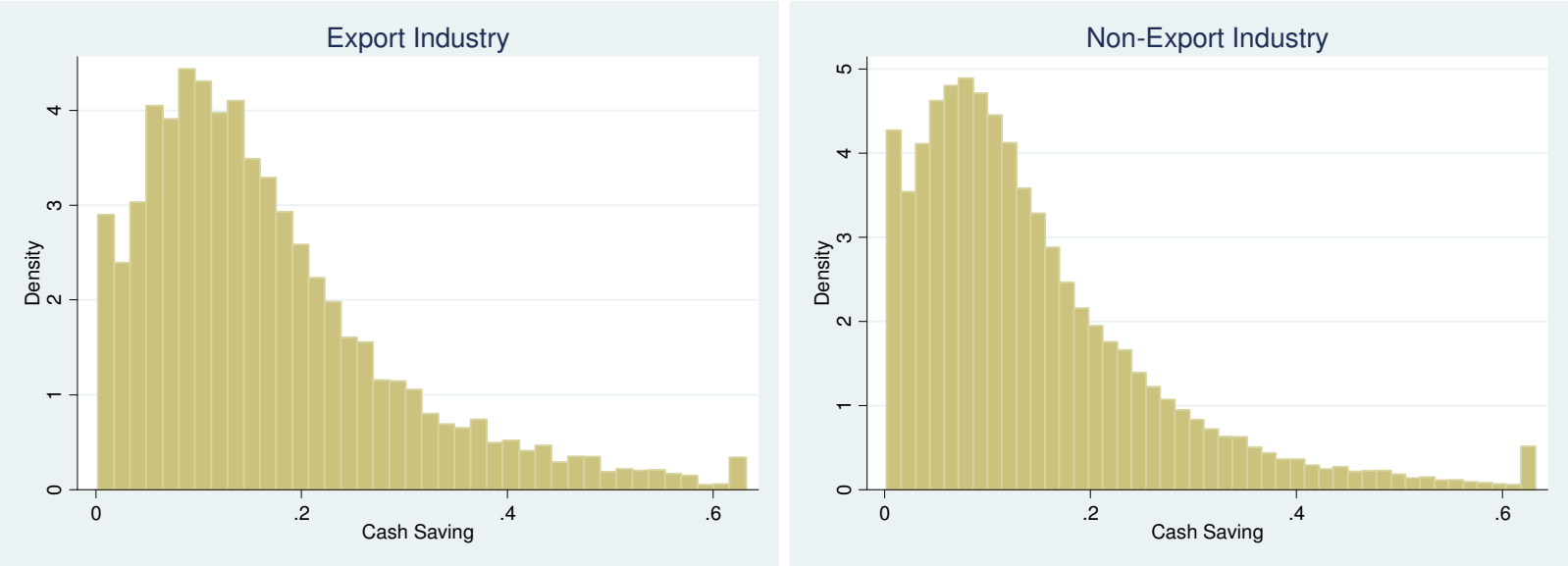


Figure 3.4: The Sample Distribution before and after crisis

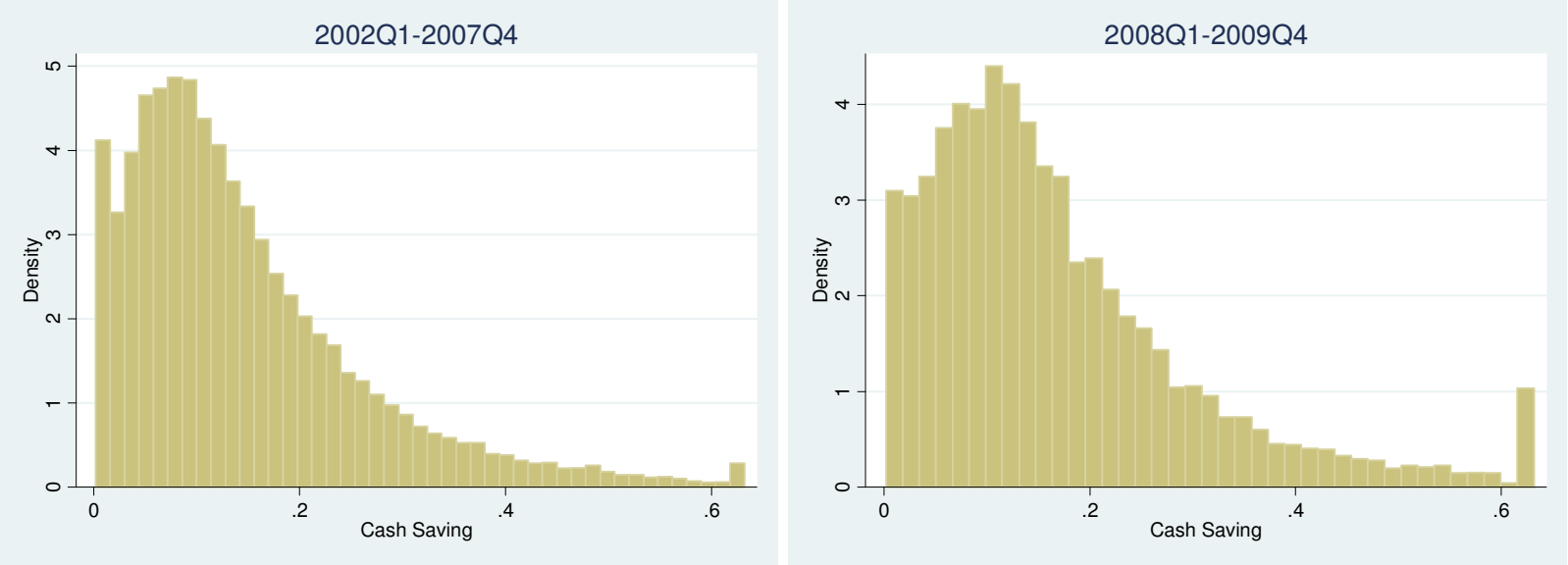


Figure 4: Cross Sectional Average of Major Variables: Cash Saving and Investment 2002Q1 - 2009Q4

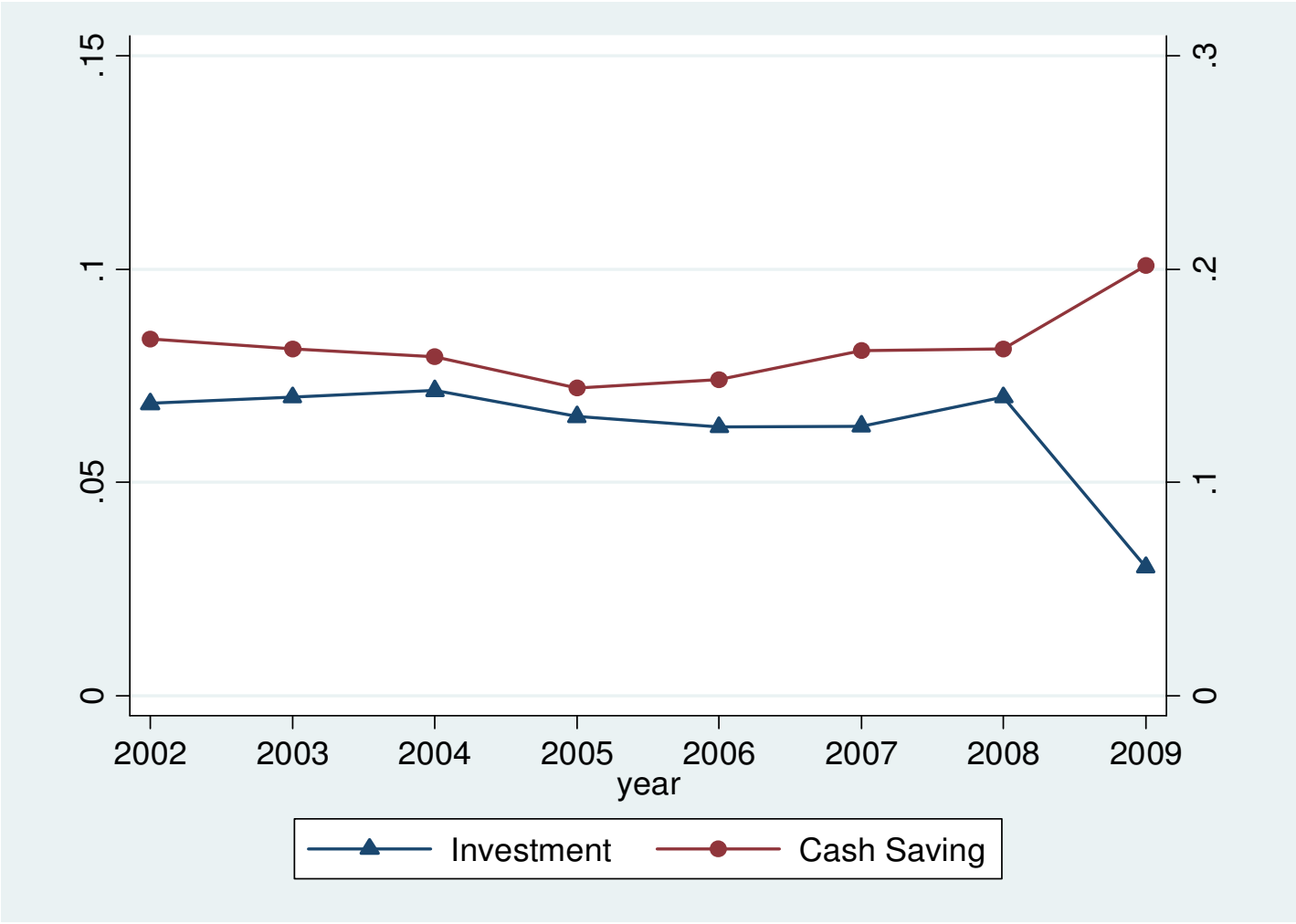


Figure 5: Cross Sectional Average of Cash Saving by Ownership Types
2002Q1 - 2009Q4

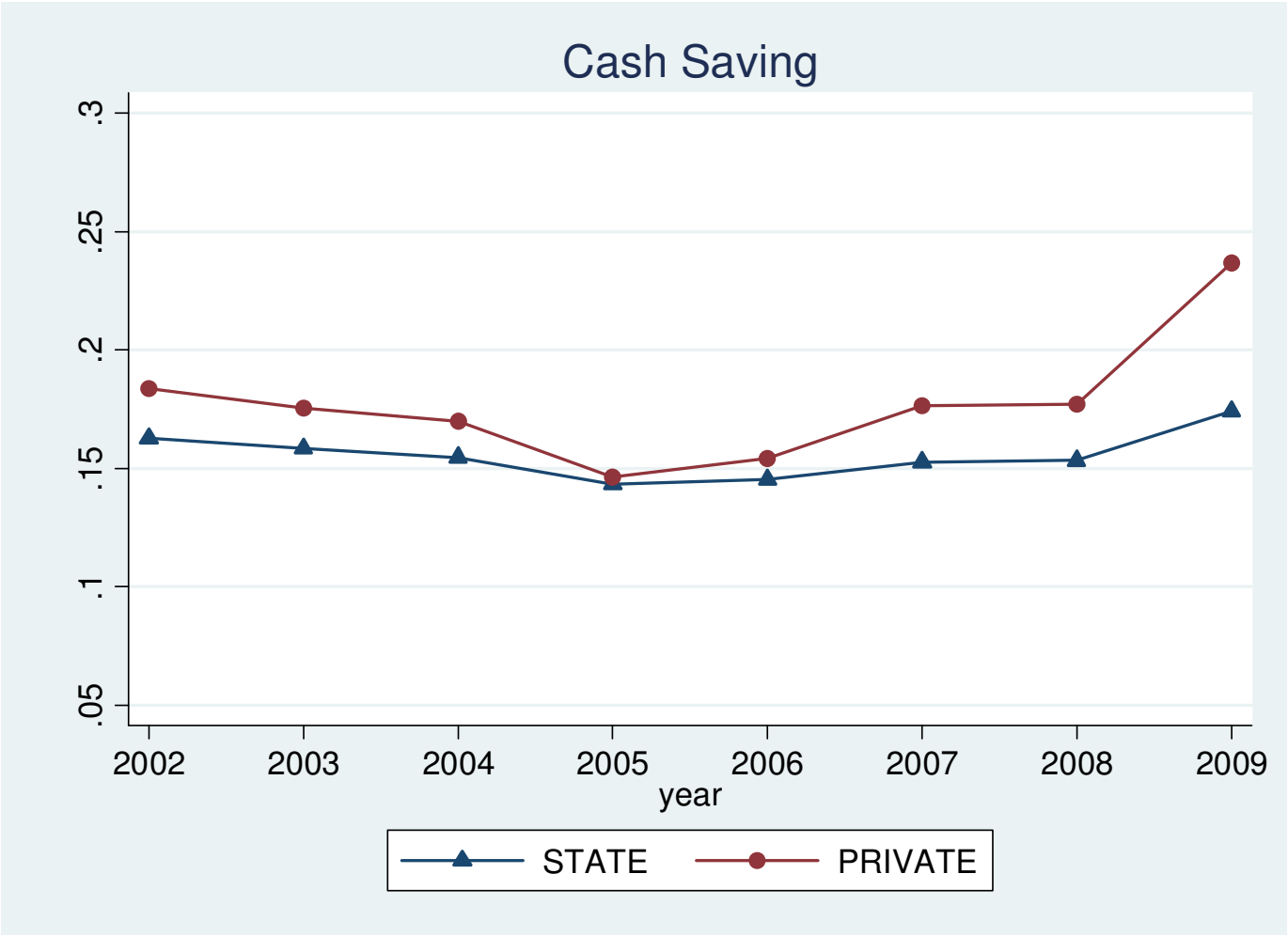


Figure 6.1: Cross Sectional Average of Cash Saving by Industry
2002Q1 - 2009Q4

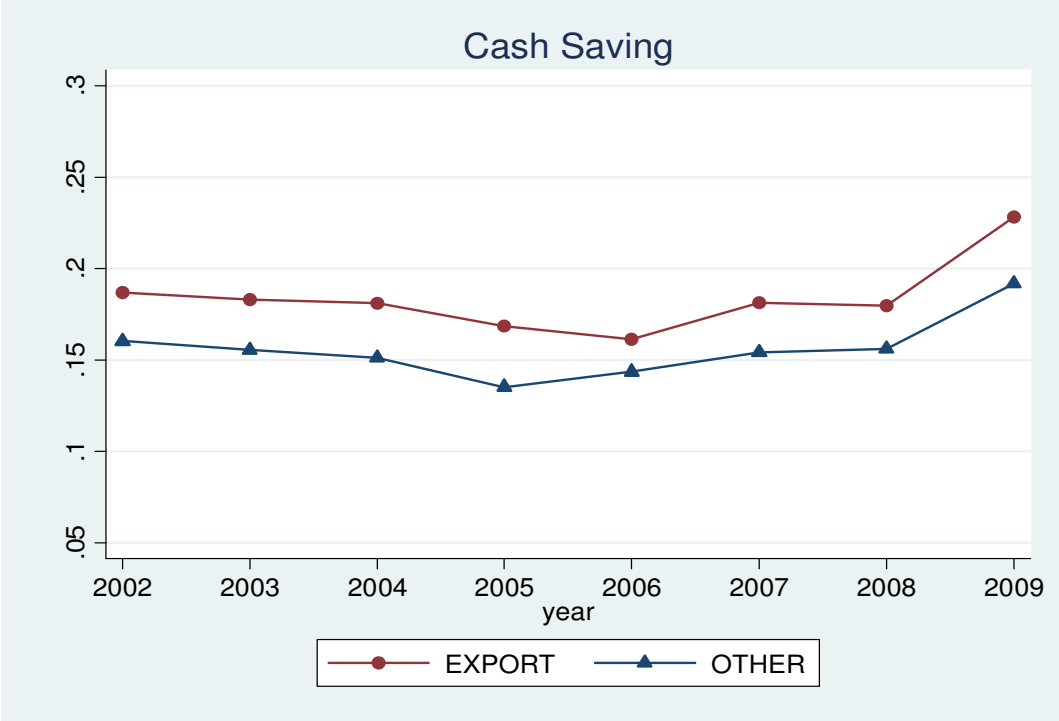


Figure 6.2: Cross Sectional Average of Investment by Industry
2002Q1 - 2009Q4

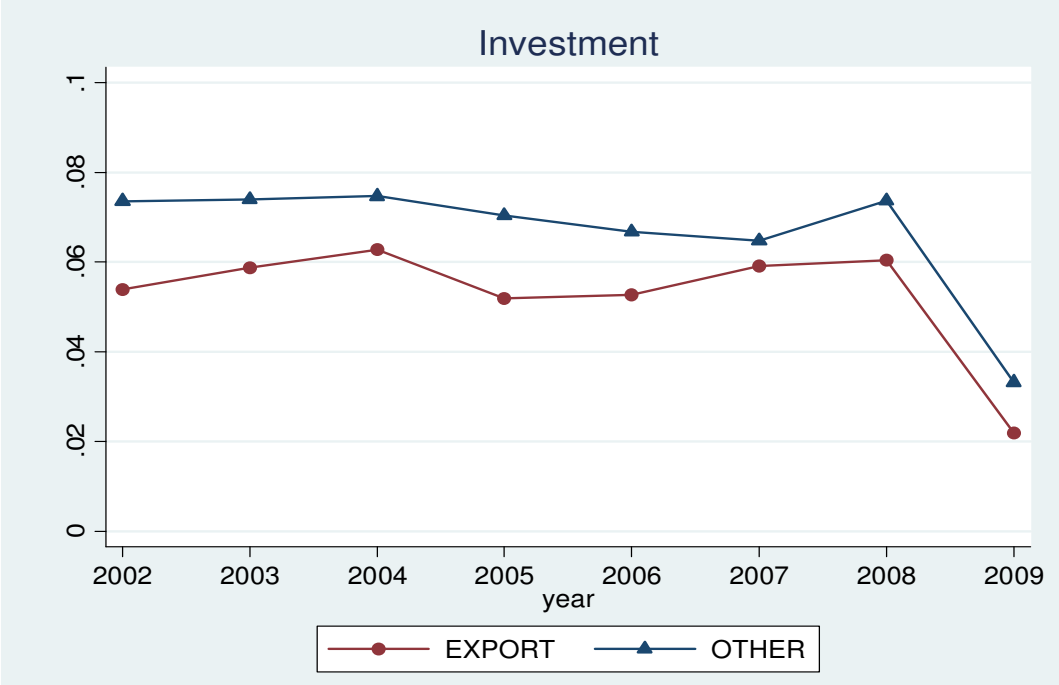


Figure 7.1: Cross Sectional Average of Cash Saving by Ownership
2002Q1 - 2009Q4 Export Industry Only

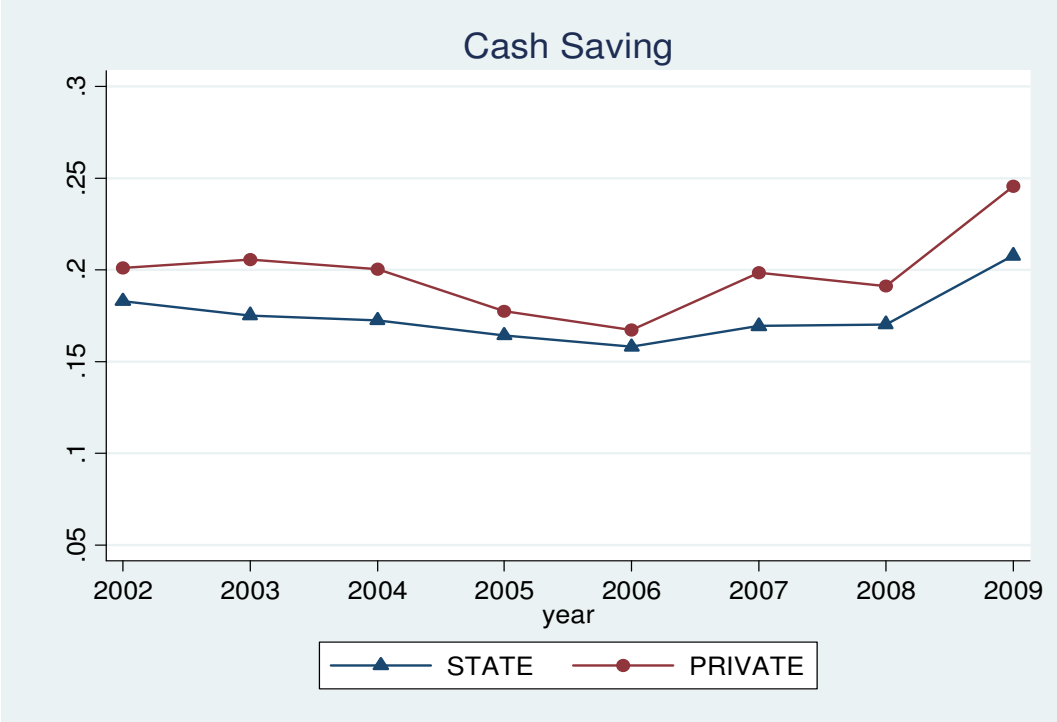


Figure 7.2: Cross Sectional Average of Investment by Ownership
2002Q1 - 2009Q4 Export Industry Only

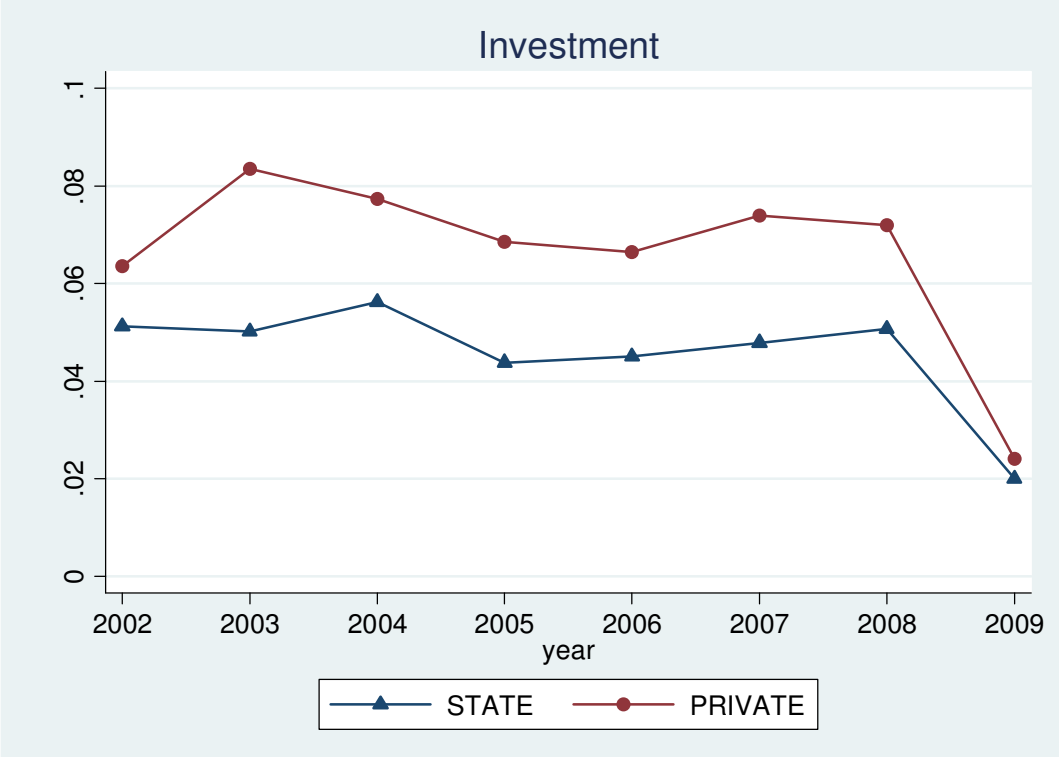


Figure 8.1: Cross Sectional Average of Cash Saving by Industry
2002Q1 - 2009Q4 Private Only

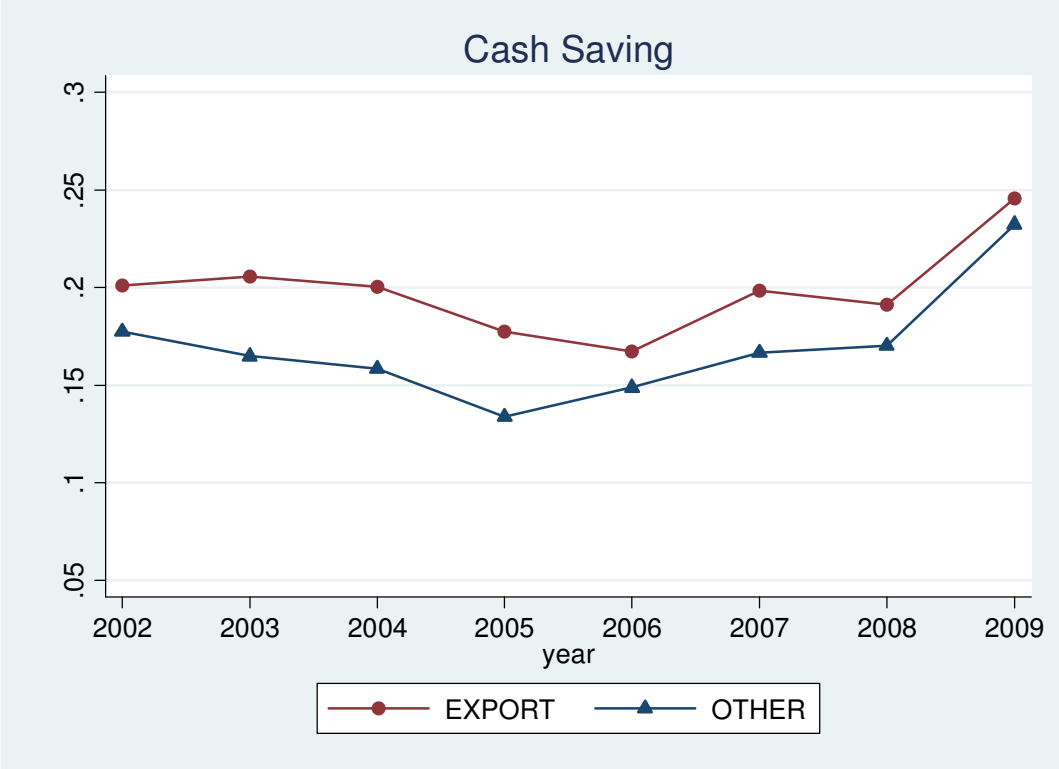


Figure 8.2: Cross Sectional Average of Investment by Industry
2002Q1 - 2009Q4 Private Only

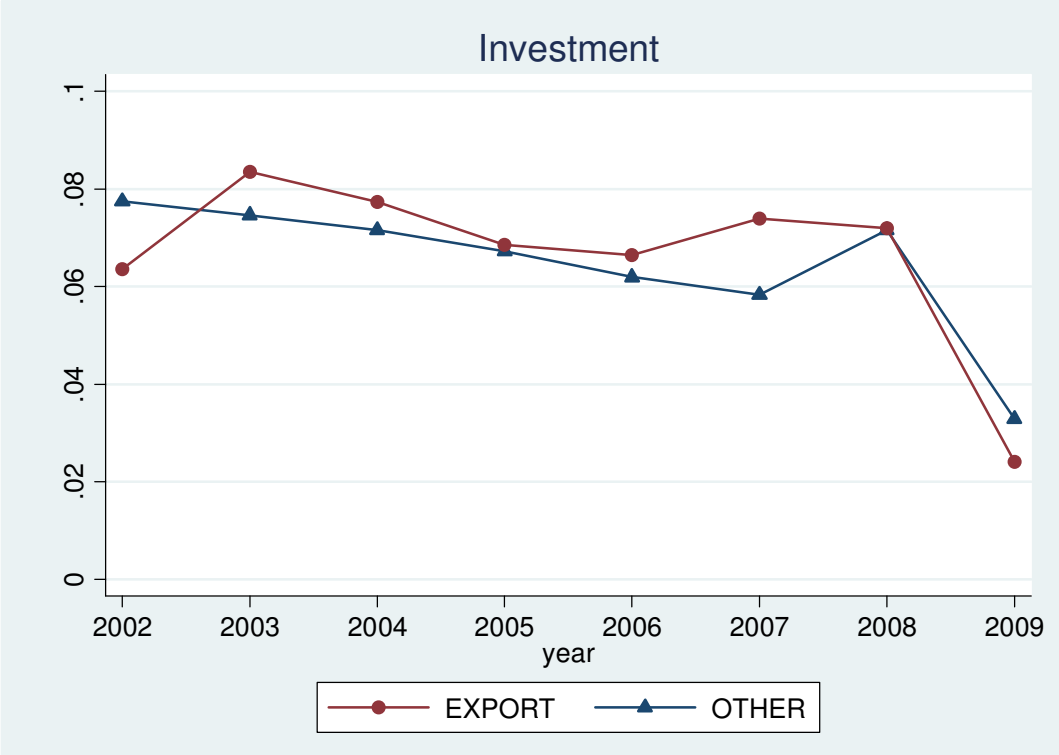


Table 1: Variable Definitions

Variable		Definition
CASH SAVING	=	(Cash + short-term marketable securities) / total asset;
TOTAL ASSETS	=	Book value of total assets;
INVESTMENT	=	Capital expenditures/ total asset;
LEVEAGE	=	Total debt divided by total assets;
INVENTORY	=	Inventory / by total asset;
SIZE	=	Log(total assets);
FIXED ASSETS	=	Fixed asset/total assets;
TOBIN'S Q	=	Market assets / Total assets;
ROA	=	Net profit before tax/ total assets;
LGDP	=	Log(GDP per capita) at the provincial level;
ACESS TO FINANCE	=	Total loans of financial institutions/GDP at the city level;
COASTAL	=	1 if locates in a coastal province, 0 otherwise;
ECONOMIC ZONE	=	1 if locates in a special economic zone, 0 otherwise;
HHI5	=	Herfindahl-Hirschman Index of the 5 largest shareholders(the sum of square of percentage);
OWNERSHIP	=	A state indicator variable of the nature of the largest shareholder; It equals 1 if the firm's largest shareholder is government-owned(government agencies, state-owned firms, and state controlled firms), and 0 if the firm's largest shareholder is non-government owned;

Table 2: Sample Distribution

Panel A: Yearly Distribution

Year	2002	2003	2004	2005	2006	2007	2008	2009	Total
N	1167	1221	1303	1284	1352	1465	1523	1721	11036
Percent (%)	10.57	11.06	11.81	11.63	12.25	13.27	13.8	15.59	100

Panel B: Industry Distribution

Industry	No of Obs.	Percent	No of firms	Percent
Agriculture, Forestry, Fishing and Hunting	1,158	2.60	47	2.50
Mining	769	1.73	40	2.13
Manufacturing	26,012	58.51	1,090	57.95
Production and Supply Industry of Electric Force, Gas and Water	1,876	4.22	65	3.46
Building Industry	902	2.03	43	2.29
Traffic and Storage Industry	1,897	4.27	73	3.88
IT Industry	2,782	6.26	135	7.18
Wholesale and Retail	2,945	6.62	112	5.95
Finance and Insurance	40	0.09	7	0.37
Real Estate	1,939	4.36	81	4.31
Social Services	1,327	2.98	57	3.03
Propagation and Culture Industry	360	0.81	19	1.01
Conglomerates	2,429	5.46	90	4.78
Others	25	0.06	22	1.17

Panel C: Ownership Distribution

	Private	**Non-Private**
N	13553	29356
Percent (%)	31.59	68.41

Panel D: Export Industry Distribution[1]

		Treatment Group Export Industry	**Control Group Non Export Industry**	**Sum**
Private	N	4016	9537	13553
	Percent (%)	30	70	31.59
Non-Private	N	7566	21790	29356
	Percent (%)	26	74	68.41
Sum	N	11582	31327	42909
	Percent (%)	27	73	100

Note: Major Export Industries in China: C1 Textile, Apparel and Leather; C5 Electron; C7 Electrician Equipment Manufacturing; G81 Communication and Related Equipment Manufacturing and G83 Computer and Related Equipment Manufacturing (OECD, 2010)

Table 3.1: Descriptive Statistics

VARIABLE	Observations	Mean	Std. Dev.	Median
Measures				
Cash Saving	44035	0.151	0.120	0.121
Investment	39444	0.036	0.046	0.018
Firm Level Variables				
Leverage	44217	0.529	0.308	0.505
Inventory	16621	0.164	0.141	0.130
Size	44434	21.272	1.093	21.167
Fixed Asset	43441	0.386	0.258	0.343
Tobin's Q	44263	0.920	0.767	0.774
Industry Tobin's Q	44431	0.772	0.046	0.771
ROA	44214	0.016	0.045	0.013
Ownership	42909	0.684	0.465	1.000
HHI5	42847	0.198	0.134	0.163
Macroeconomic and Location Indicators				
LGDP	44452	9.053	0.921	9.132
Access to Finance	39740	1.068	0.566	0.908
Costal	44433	0.550	0.497	1.000
Economic Zone	42956	0.097	0.297	0.000

This table reports summary statistics for all variables used in the analysis. Variables are winzorized at the 1% tails. Number of observations, mean, median and standard deviation are reported. The sample years are 1998 – 2009, and for all listed firms in Shanghai Stock Exchange and Shenzhen Stock Exchange.

Table 3.2: Summary Statistics by Ownership

VARIABLE	Private				State				Difference
	N	Mean	SD	Median	N	Mean	SD	Median	Mean
Measures									
Cash Saving	13437	0.160	0.136	0.125	29083	0.147	0.111	0.119	0.013
Investment	12026	0.033	0.045	0.015	26152	0.037	0.047	0.02	-0.004
Firm Level Variables									
Leverage	13468	0.573	0.405	0.515	29216	0.507	0.237	0.502	0.065
Inventory	4340	0.181	0.157	0.134	11727	0.158	0.135	0.128	0.023
Size	13545	20.833	0.961	20.803	29339	21.492	1.092	21.389	-0.658
Fixed Asset	13237	0.306	0.216	0.271	28701	0.423	0.268	0.383	-0.117
Tobin's Q	13503	1.023	0.997	0.776	29275	0.874	0.632	0.775	0.149
Industry Tobin's Q	13553	0.769	0.044	0.771	29356	0.774	0.047	0.775	-0.006
ROA	13479	0.016	0.052	0.014	29197	0.017	0.041	0.013	-0.001
HHI5	12700	0.146	0.103	0.118	28780	0.223	0.14	0.197	-0.077
Macroeconomic and Location Indicators									
LGDP	13551	9.201	1.026	9.363	29349	8.981	0.865	9.002	0.220
Access to Finance	12778	1.071	0.725	0.903	25741	1.069	0.478	0.909	0.002
Costal	13551	0.619	0.486	1.000	29330	0.512	0.5	1.000	0.108
Economic Zone	12732	0.117	0.322	0.000	28853	0.088	0.284	0.000	0.029

This table reports summary statistics for all variables used in the analysis. Variables are winzorized at the 1% tails. Number of observations, mean, median and standard deviation are reported. The sample years are 1998 – 2009, and for all listed firms in Shanghai Stock Exchange and Shenzhen Stock Exchange.

Table 3.3: Summary Statistics by Export Industry

VARIABLE	Export Industry				Non- Export Industry				Difference
	N	Mean	SD	Median	N	Mean	SD	Median	Mean
Measures									
Cash Saving	11859	0.167	0.122	0.138	32176	0.146	0.119	0.115	0.021
Investment	10626	0.031	0.040	0.016	28818	0.038	0.048	0.019	-0.007
Firm Level Variables									
Leverage	11900	0.512	0.289	0.486	32317	0.535	0.315	0.513	-0.023
Inventory	4347	0.182	0.104	0.164	12274	0.157	0.151	0.114	0.025
Size	11956	21.097	1.022	21.043	32478	21.337	1.111	21.218	-0.240
Fixed Asset	11706	0.321	0.203	0.282	31735	0.411	0.271	0.374	-0.089
Tobin's Q	11947	0.918	0.766	0.766	32316	0.921	0.768	0.777	-0.003
Industry Tobin's Q	11964	0.764	0.028	0.775	32467	0.776	0.051	0.771	-0.012
ROA	11901	0.015	0.044	0.012	32313	0.017	0.046	0.014	-0.002
Ownership	11582	0.653	0.476	1.000	31327	0.696	0.460	1.000	-0.042
HHI5	11573	0.194	0.124	0.163	31274	0.199	0.138	0.163	-0.006
Macroeconomic and Location Indicators									
LGDP	11964	9.204	0.857	9.267	32488	8.997	0.938	9.047	0.207
Access to Finance	10771	1.044	0.434	0.897	28969	1.077	0.608	0.913	-0.033
Costal	11964	0.598	0.490	1.000	32469	0.533	0.499	1.000	0.065
Economic Zone	11616	0.099	0.299	0.000	31340	0.097	0.296	0.000	0.002

This table reports summary statistics for all variables used in the analysis. Variables are winzorized at the 1% tails. Number of observations, mean, median and standard deviation are reported. The sample years are 1998 – 2009, and for all listed firms in Shanghai Stock Exchange and Shenzhen Stock Exchange.

Table 3.4: Summary Statistics by ownership within Export Industry

VARIABLE	Private				State				Difference
	N	Mean	SD	Median	N	Mean	SD	Median	Mean
Measures									
Cash Saving	9448	0.152	0.137	0.115	21594	0.142	0.109	0.115	0.01
Investment	8437	0.032	0.045	0.013	19439	0.041	0.049	0.022	-0.009
Firm Level Variables									
Leverage	9469	0.597	0.43	0.53	21697	0.504	0.228	0.505	0.093
Inventory	3068	0.182	0.174	0.121	8772	0.149	0.143	0.111	0.032
Size	9532	20.834	0.936	20.81	21778	21.577	1.110	21.455	-0.743
Fixed Asset	9300	0.315	0.227	0.277	21313	0.454	0.279	0.425	-0.139
Tobin's Q	9491	1.031	1.021	0.78	21720	0.873	0.620	0.777	0.158
Industry Tobin's Q	9537	0.772	0.047	0.77	21790	0.777	0.053	0.771	-0.005
ROA	9482	0.015	0.054	0.012	21672	0.019	0.041	0.014	-0.004
HHI5	8852	0.143	0.104	0.116	21411	0.225	0.144	0.198	-0.081
Macroeconomic and Location Indicators									
LGDP	9535	9.082	1.082	9.265	21783	8.957	0.868	8.996	0.126
Access to Finance	8944	1.091	0.826	0.903	19110	1.072	0.484	0.920	0.019
Costal	9535	0.584	0.493	1.000	21764	0.505	0.500	1.000	0.079
Economic Zone	8871	0.132	0.338	0.000	21454	0.081	0.273	0.000	0.051

This table reports summary statistics for all variables used in the analysis. Variables are winzorized at the 1% tails. Number of observations, mean, median and standard deviation are reported. The sample years are 1998 – 2009, and for all listed firms in Shanghai Stock Exchange and Shenzhen Stock Exchange.

Table 3.5: Summary Statistics by Ownership between Industries

VARIABLE	Private-Export				Private-Non-Export				Difference
	N	Mean	SD	Median	N	Mean	SD	Median	Mean
Measures									
Cash Saving	3989	0.178	0.132	0.149	9448	0.152	0.137	0.115	0.025
Investment	3589	0.037	0.045	0.021	8437	0.032	0.045	0.013	0.006
Firm Level Variables									
Leverage	3999	0.515	0.332	0.481	9469	0.597	0.430	0.530	-0.082
Inventory	1272	0.180	0.108	0.154	3068	0.182	0.174	0.121	-0.002
Size	4013	20.832	1.020	20.760	9532	20.834	0.936	20.810	-0.002
Fixed Asset	3937	0.286	0.185	0.258	9300	0.315	0.227	0.277	-0.029
Tobin's Q	4012	1.004	0.937	0.766	9491	1.031	1.021	0.780	-0.027
Industry Tobin's Q	4016	0.761	0.034	0.771	9537	0.772	0.047	0.770	-0.011
ROA	3997	0.020	0.048	0.017	9482	0.015	0.054	0.012	0.006
HHI5	3848	0.151	0.101	0.122	8852	0.143	0.104	0.116	0.008
Macroeconomic and Location Indicators									
LGDP	4016	9.483	0.812	9.552	9535	9.082	1.082	9.265	0.401
Access to Finance	3834	1.026	0.395	0.908	8944	1.091	0.826	0.903	-0.065
Costal	4016	0.703	0.457	1.000	9535	0.584	0.493	1.000	0.119
Economic Zone	3861	0.084	0.277	0.000	8871	0.132	0.338	0.000	-0.048

This table reports summary statistics for all variables used in the analysis. Variables are winzorized at the 1% tails. Number of observations, mean, median and standard deviation are reported. The sample years are 1998 – 2009, and for all listed firms in Shanghai Stock Exchange and Shenzhen Stock Exchange.

Table 3.6: Summary Statistics by Crisis Period

VARIABLE	2002Q1-2007Q4				2008Q1-2009Q4				Difference
	N	**Mean**	**SD**	**Median**	**N**	**Mean**	**SD**	**Median**	**Mean**
Measures									
Cash Saving	34432	0.146	0.116	0.117	9603	0.169	0.132	0.136	-0.023
Investment	31580	0.036	0.046	0.018	7864	0.035	0.045	0.019	0.001
Firm Level Variables									
Leverage	34620	0.526	0.305	0.503	9597	0.538	0.319	0.514	-0.012
Inventory	14438	0.160	0.136	0.128	2183	0.190	0.165	0.146	-0.030
Size	34828	21.209	1.037	21.113	9606	21.501	1.250	21.390	-0.292
Fixed Asset	33863	0.419	0.266	0.377	9578	0.270	0.186	0.239	0.149
Tobin's Q	34671	0.696	0.350	0.753	9592	1.729	1.200	1.513	-1.033
Industry Tobin's Q	34813	0.772	0.045	0.771	9618	0.772	0.052	0.771	0.000
ROA	34639	0.022	0.054	0.019	9575	0.015	0.042	0.012	0.007
Ownership	33476	0.708	0.455	1.000	9433	0.601	0.490	1.000	0.107
HHI5	33367	0.205	0.136	0.170	9480	0.173	0.126	0.143	0.032
Macroeconomic and Location Indicators									
LGDP	34842	8.916	0.902	8.988	9610	9.546	0.814	9.552	-0.630
Access to Finance	30155	1.050	0.445	0.903	9585	1.123	0.839	0.924	-0.073
Costal	34842	0.546	0.498	1.000	9591	0.566	0.496	1.000	-0.020
Economic Zone	33468	0.088	0.283	0.000	9488	0.132	0.338	0.000	-0.044

This table reports summary statistics for all variables used in the analysis. Variables are winzorized at the 1% tails. Number of observations, mean, median and standard deviation are reported. The sample years are 1998 – 2009, and for all listed firms in Shanghai Stock Exchange and Shenzhen Stock Exchange.

Table 4: Baseline Regressions of Cash Saving

Variables	OLS	OLS	OLS	FE	RE
	1	2	3	4	5
Firm Level Variables					
Leverage	0.098	0.136	0.128	0.071	0.088
	(22.82)***	(22.27)***	(19.65)***	(10.26)***	(14.46)***
Inventory	-0.163	-0.162	-0.163	-0.234	-0.221
	(28.63)***	(26.96)***	(25.77)***	(23.96)***	(25.26)***
Size	0.003	0.001	0.002	0.009	0.001
	(3.33)***	(0.73)	(2.57)**	(4.28)***	(0.70)
Fixed Asset	-0.153	-0.169	-0.164	-0.146	-0.148
	(42.59)***	(45.73)***	(42.02)***	(29.26)***	(33.81)***
Tobin's Q	0.002	0.000	0.002	0.003	0.002
	(1.40)	(0.13)	(1.01)	(3.08)***	(1.57)
ROA	0.432	0.397	0.391	0.176	0.196
	(17.64)***	(14.73)***	(13.75)***	(8.96)***	(10.15)***
Industry Q	0.090	0.070	0.077	0.244	0.016
	(4.32)***	(3.13)***	(3.16)***	(1.15)	(0.26)
OWNERSHIP		-0.004	-0.002	-0.010	-0.008
		(2.18)**	(0.87)	(3.00)***	(2.76)***
HHI5		0.074	0.074	0.032	0.077
		(11.95)***	(11.07)***	(2.74)***	(8.09)***
Macroeconomic and Location Variables					
LGDP			0.013	0.032	0.009
			(9.28)***	(10.97)***	(4.51)***
ACCESS TO FINANCE			-0.008	0.002	0.002
			(2.22)**	(1.05)	(1.25)
Coastal			0.005	0.035	0.013
			(2.25)**	(1.31)	(2.65)***
Economic Zone			0.007	0.028	0.018
			(2.35)**	(5.14)***	(3.85)***
Constant	0.270	0.257	0.161	0.166	0.346
	(12.93)***	(11.58)***	(6.32)***	(0.97)	(6.32)***
Observations	16333	15421	13554	13554	13554
R-squared	0.23	0.24	0.25	0.14	0.13

Table 5: Interaction Effects Regressions of Cash Saving

Panel A

Variables	OLS	FE	RE	OLS	FE	RE	OLS	FE	RE
	1	2	3	4	5	6	7	8	9
Leverage	0.127	0.070	0.088	0.127	0.070	0.088	0.125	0.070	0.087
	(19.59)***	(10.21)***	(14.39)***	(19.59)***	(10.21)***	(14.39)***	(19.53)***	(10.24)***	(14.32)***
Inventory	-0.163	-0.234	-0.221	-0.163	-0.234	-0.221	-0.163	-0.234	-0.222
	(25.78)***	(23.97)***	(25.28)***	(25.78)***	(23.97)***	(25.28)***	(25.87)***	(24.03)***	(25.46)***
Size	0.002	0.009	0.001	0.002	0.009	0.001	0.003	0.008	0.000
	(2.53)**	(4.30)***	(0.72)	(2.53)**	(4.30)***	(0.72)	(3.57)***	(3.65)***	(0.12)
Fixed Asset	-0.165	-0.146	-0.148	-0.165	-0.146	-0.148	-0.161	-0.144	-0.146
	(42.06)***	(29.30)***	(33.89)***	(42.06)***	(29.30)***	(33.89)***	(42.17)***	(28.96)***	(33.17)***
Tobin's Q	0.002	0.005	0.004	0.002	0.005	0.004	0.007	0.009	0.008
	(0.57)	(3.36)***	(2.66)***	(0.57)	(3.36)***	(2.66)***	(3.69)***	(6.30)***	(5.89)***
ROA	0.388	0.174	0.194	0.388	0.174	0.194	0.387	0.169	0.189
	(13.65)***	(8.88)***	(10.05)***	(13.65)***	(8.88)***	(10.05)***	(13.79)***	(8.62)***	(9.81)***
Industry Q	0.078	0.244	0.016	0.078	0.244	0.016	0.077	0.191	0.026
	(3.22)***	(1.15)	(0.26)	(3.22)***	(1.15)	(0.26)	(3.17)***	(0.90)	(0.43)
Ownership	-0.004	-0.008	-0.004	-0.004	-0.008	-0.004	-0.002	-0.011	-0.008
	(1.07)	(2.01)**	(1.37)	(1.07)	(2.01)**	(1.37)	(1.11)	(3.13)***	(2.81)***
HHI5	0.075	0.033	0.078	0.075	0.033	0.078	0.073	0.032	0.078
	(11.09)***	(2.81)***	(8.18)***	(11.09)***	(2.81)***	(8.18)***	(10.93)***	(2.80)***	(8.20)***
Ownership*Tobin's Q	-0.006	-0.003	-0.004						
	(1.92)*	(1.63)	(2.22)**						
Ownership*Ind Q	-0.013	-0.032	-0.009	-0.013	-0.032	-0.009	-0.017	-0.027	-0.004
	(9.21)***	(10.92)***	(4.44)***	(9.21)***	(10.92)***	(4.44)***	(14.02)***	(9.04)***	(1.74)*

Table 5 : Interaction Effect Regressions of Cash Saving
Panel B

Variables	OLS	FE	RE	OLS	FE	RE	OLS	FE	RE
	1	2	3	4	5	6	7	8	9
Macroeconomic and Location Variables									
LGDP	0.005	0.034	0.012	0.005	0.034	0.012	0.010	-0.008	0.005
	(2.24)**	(1.26)	(2.60)***	(2.24)**	(1.26)	(2.60)***	(4.60)***	(0.31)	(1.07)
Access to Finance	-0.007	-0.029	-0.019	-0.007	-0.029	-0.019	-0.008	-0.031	-0.018
	(2.30)**	(5.29)***	(4.03)***	(2.30)**	(5.29)***	(4.03)***	(2.77)***	(5.57)***	(3.95)***
Ownership*Access to Finance	0.007	0.002	0.002	0.007	0.002	0.002	0.028	0.023	0.025
	(2.13)**	(1.21)	(1.47)	(2.13)**	(1.21)	(1.47)	(10.67)***	(5.17)***	(6.44)***
Coastal				0.006	0.003	0.004			
				(1.92)*	(1.63)	(2.22)**			
Economic Zone							0.007	0.006	0.006
							(11.60)***	(5.85)***	(7.21)***
Constant	0.157	0.163	0.342	0.157	0.163	0.342	0.123	0.189	0.307
	(6.10)***	(0.96)	(6.25)***	(6.10)***	(0.96)	(6.25)***	(4.99)***	(1.11)	(5.59)***
Observations	13554	13554	13554	13554	13554	13554	13554	13554	13554
R-squared	0.25	0.14	0.13	0.25	0.14	0.13	0.26	0.14	0.13

Table 6: Difference in Difference Regressions of Cash Saving

Variables	OLS	FE	RE
	1	2	3
DID Dummies			
Crisis (2008Q1-2009Q4)	0.000	0.003	0.005
	(0.12)	(0.95)	(1.80)*
Export Industry	0.002	0.001	0.002
	(0.42)	(0.18)	(0.42)
Export×Crisis	**0.013**	**0.012**	**0.012**
	(3.05)* **	**(2.68)*** **	**(2.58)*** **
Leverage	0.097	0.136	0.128
	(28.54)***	(28.63)***	(25.50)***
Inventory	-0.166	-0.164	-0.166
	(26.76)***	(25.69)***	(24.74)***
Size	0.002	0.000	0.002
	(2.71)***	(0.38)	(1.81)*
Fixed Asset	-0.152	-0.167	-0.165
	(44.35)***	(46.78)***	(43.31)***
Tobin's Q	0.003	0.000	0.001
	(2.40)**	(0.06)	(0.40)
ROA	0.442	0.406	0.396
	(20.51)***	(17.43)***	(16.17)***
Industry Q	0.104	0.087	0.087
	(5.16)***	(3.74)***	(3.42)***
Ownership		-0.004	-0.002
		(2.37)**	(1.13)
HHI5		0.071	0.071
		(11.42)***	(10.53)***
LGDP			0.014
			(11.51)***
Access to Finance			-0.008
			(5.77)***
Coastal			0.006
			(2.90)***
Economic Zone			0.006
			(2.17)**
Constant	0.242	0.236	0.123
	(11.33)***	(9.89)***	(4.54)***
Observations	16333	15421	13554
R-squared	0.23	0.24	0.25

Table 7: Difference in Difference Regressions of Investment

Variables	Investment		
	OLS	FE	RE
	1	2	3
DID Dummies			
Crisis (2008Q1-2009Q4)	-0.002	-0.003	-0.004
	(1.40)	(1.89)*	(2.64)***
Export Industry	0.001	0.001	0.001
	(0.71)	(0.39)	(0.58)
Export×Crisis	-0.004	-0.003	-0.003
	(1.94)*	(1.65)*	(1.69)*
Leverage	0.005	0.016	0.016
	(3.95)***	(7.65)***	(7.33)***
Inventory	-0.055	-0.058	-0.055
	(25.34)***	(25.31)***	(23.62)***
Size	0.003	0.002	0.002
	(8.55)***	(4.77)***	(5.67)***
Fixed Asset	0.020	0.020	0.020
	(13.07)***	(12.09)***	(11.74)***
Tobin's Q	-0.004	-0.005	-0.004
	(6.80)***	(6.17)***	(5.87)***
ROA	0.263	0.285	0.291
	(22.97)***	(21.93)***	(21.40)***
Industry Q	-0.019	0.012	0.009
	(2.23)**	(1.10)	(0.71)
Ownership		0.001	0.001
		(0.66)	(1.18)
HHI5		0.011	0.010
		(4.05)***	(3.60)***
LGDP			0.001
			(1.48)
Access to Finance			0.001
			(1.69)*
Coastal			0.002
			(2.31)**
Economic Zone			0.005
			(5.23)***
Constant	-0.050	-0.024	-0.021
	(5.06)***	(2.11)**	(1.72)*
Observations	14687	13915	12934
R-squared	0.14	0.14	0.15

Table 8: Difference in Difference Regressions of Cash Saving Between Industries (Private Only)

Variables	OLS	FE	RE
	1	2	3
DID Dummies			
Crisis (2008Q1-2009Q4)	0.012	0.011	0.002
	(1.68)*	(1.53)	(0.25)
Export Industry	-0.010	-0.009	-0.013
	(1.23)	(1.11)	(1.63)
Export×Crisis	0.017	0.015	0.013
	(1.88)*	(1.69)*	(1.45)
Leverage	0.087	0.173	0.165
	(13.96)***	(12.25)***	(11.62)***
Inventory	-0.198	-0.190	-0.198
	(17.87)***	(15.16)***	(15.72)***
Size	0.005	0.001	0.001
	(2.65)***	(0.53)	(0.43)
Fixed Asset	-0.181	-0.202	-0.202
	(19.53)***	(20.79)***	(20.61)***
Tobin's Q	0.005	0.001	0.002
	(1.69)*	(0.20)	(0.56)
ROA	0.421	0.316	0.290
	(9.46)***	(6.52)***	(5.85)***
Industry Q	0.014	0.050	0.054
	(0.29)	(1.00)	(1.05)
HHI5			0.020
			(8.55)***
Macroeconomic and Location Variables			
LGDP			0.002
			(0.68)
Access to Finance			-0.008
			(1.80)*
Coastal			0.003
			(0.48)
Economic Zone	0.398	0.269	0.122
	(7.39)***	(4.66)***	(1.99)**
Constant	-0.012	-0.011	0.002
	(1.68)*	(1.53)	(0.25)
Observations	4261	4034	3784
R-squared	0.28	0.31	0.32

Table 9: Robustness Check: Cash Saving Regressions within Industry (Export Industry only)

Panel A

Variables	OLS	FE	RE	OLS	FE	RE	OLS	FE	RE
	1	2	3	4	5	6	7	8	9
Firm Level Variables									
Leverage	0.101	0.023	0.057	0.101	0.023	0.057	0.101	0.023	0.056
	(9.28)***	(1.79)*	(4.89)***	(9.28)***	(1.79)*	(4.89)***	(9.28)***	(1.77)*	(4.87)***
Inventory	-0.191	-0.284	-0.279	-0.191	-0.284	-0.279	-0.191	-0.280	-0.276
	(12.79)***	(14.65)***	(15.36)***	(12.79)***	(14.65)***	(15.36)***	(12.80)***	(14.52)***	(15.25)***
Size	0.008	0.009	0.006	0.008	0.009	0.006	0.008	0.009	0.006
	(4.36)***	(2.50)**	(2.19)**	(4.36)***	(2.50)**	(2.19)**	(4.35)***	(2.44)**	(2.13)**
Fixed Asset	-0.153	-0.161	-0.149	-0.153	-0.161	-0.149	-0.153	-0.160	-0.149
	(16.58)***	(16.63)***	(16.64)***	(16.58)***	(16.63)***	(16.64)***	(16.60)***	(16.52)***	(16.55)***
Tobin's Q	0.006	0.002	0.001	0.006	0.002	0.001	0.003	0.007	0.004
	(1.65)*	(0.92)	(0.32)	(1.65)*	(0.92)	(0.32)	(0.54)	(1.77)*	(1.08)
ROA	0.403	0.148	0.163	0.403	0.148	0.163	0.403	0.146	0.161
	(7.63)***	(4.45)***	(4.93)***	(7.63)***	(4.45)***	(4.93)***	(7.63)***	(4.40)***	(4.88)***
Industry Q	0.166	4.473	0.127	0.166	4.473	0.127	0.167	4.442	0.131
	(2.93)***	(5.36)***	(0.80)	(2.93)***	(5.36)***	(0.80)	(2.94)***	(5.31)***	(0.83)
Ownership	-0.003	-0.018	-0.016	-0.003	-0.018	-0.016	-0.004	-0.015	-0.012
	(0.45)	(3.09)***	(2.87)***	(0.45)	(3.09)***	(2.87)***	(0.96)	(2.96)***	(2.66)***
HHI5	0.023	0.032	0.029	0.023	0.032	0.029	0.023	0.031	0.029
	(1.71)*	(1.46)	(1.57)	(1.71)*	(1.46)	(1.57)	(1.71)*	(1.44)	(1.61)
Ownership*Tobin's Q	-0.001	-0.004	-0.004						
	(0.25)	(1.10)	(1.20)						
Ownership*Ind Q				-0.001	-0.004	-0.004			
				(0.25)	(1.10)	(1.20)			

Table 9 : Robustness Check: Cash Saving Regressions within Industry (Export Industry only)
Panel B

Variables	OLS	FE	RE	OLS	FE	RE	OLS	FE	RE
	1	2	3	4	5	6	7	8	9
Macroeconomic and Location Variables									
LGDP	0.015	0.053	0.022	0.015	0.053	0.022	0.015	0.052	0.022
	(5.64)***	(8.91)***	(4.92)***	(5.64)***	(8.91)***	(4.92)***	(5.64)***	(8.77)***	(4.81)***
Access to Finance	-0.026	-0.008	-0.015	-0.026	-0.008	-0.015	-0.028	-0.013	-0.019
	(5.14)***	(0.73)	(1.87)*	(5.14)***	(0.73)	(1.87)*	(3.78)***	(1.07)	(2.05)**
Ownership*Access to Finance							-0.002	-0.003	-0.003
							(0.45)	(0.94)	(0.93)
Coastal	0.006	0.000	0.025	0.006	0.000	0.025	0.006	0.000	0.024
	(1.27)	(.)	(2.45)**	(1.27)	(.)	(2.45)**	(1.26)	(.)	(2.36)**
Economic Zone	0.004	0.030	0.019	0.004	0.030	0.019	0.004	0.034	0.022
	(0.62)	(3.17)***	(2.30)**	(0.62)	(3.17)***	(2.30)**	(0.66)	(3.54)***	(2.67)***
Constant	-0.169	-2.833	0.240	-0.169	-2.833	0.240	-0.173	-2.820	0.230
	(2.72)***	(4.43)***	(1.73)*	(2.72)***	(4.43)***	(1.73)*	(2.75)***	(4.40)***	(1.66)*
Observations	3586	3586	3586	3586	3586	3586	3586	3586	3586
R-squared	0.21	0.18	0.17	0.21	0.18	0.17	0.21	0.18	0.17