



Myths and Realities of Investment Financing The Case of Thailand

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List of Acronyms

ADF	Augmented Dicky Fuller
BIBF	The Bangkok International Banking Facilities
BOT	The Bank of Thailand
FDI	Foreign Direct Investment
GCF	Gross Capital Formation
GDP	Gross Domestic Products
GFCF	Gross Fixed Capital Formation
IMF	The International Monetary Fund
IPO	Initial Public Offering
JSC	Joint Stock Companies
NESDB	The Office of National Economic and Development Board
NPLs	Non-Performing Loans
OECD	The Organization for Economic Co-operation and Development
OLS	Ordinary Least Square
R&D	Research and Development
PIBF	The Provincial International Banking Facilities
SET	The Stock Exchange of Thailand
SETSMART	SET Market Analysis and Reporting Tool
UK	The United Kingdom
UN	The United Nations
U.S.	The United States of America

Abstract

The main economic development agencies such as the IMF, World Bank and UN often blame developing countries for having low rates of investment because of insufficient domestic savings. Hence, the policy recommendations that have been prescribed to developing countries thus far are to increase real interest rates and to liberalize their financial systems. These policies are based on the premise that household savings drive investment through the mechanism of financial intermediaries. This paper attempts to examine this fundamental assumption that has been taken for granted in modern orthodox economic theory, looking specifically at the outcome of financial liberalization that has been adopted in Thailand. The analytical results of this study show that the financial liberalization regime in Thailand has not promoted household savings or encouraged banks to finance long-term investment. In fact, productive investment is funded by profits, not by external sources, as claimed by orthodox economists. The results of this study cast doubt on the efficacy of the orthodox policies that have been widely recommended to developing countries to promote investment.

Keywords

Commercial Banks, Investment Financing, Financial Liberalization, Savings, Thailand

Chapter 1

Introduction: The Overlook Question

1.1 Background

Since the 1970s, financial development has been looked toward as the main engine of economic development. Major intergovernmental bodies such as the IMF, World Bank and UN have prescribed policy recommendations to promote the financial sector in order to promote economic growth, claiming that a matured financial system can effectively mobilize savings and finance productive investment. To be clear, the term “financial development” means to eradicate the practices that distort the financial system; Mckinnon (1973) and Shaw (1973) call these practices, “financial repression”. Under the financial repression regime, the financial system is not allowed to function perfectly. It is as a result of state intervention, with imposed policies and regulations such as interest rate ceilings, capital control, government direct credit, high reserve requirements for financial institutions and blocking foreign financial firms and investors from domestic markets (Grabel 2010: 4). This is said to dampen the economic growth as it suppresses the sources of investment financing, especially the supply of credit from banks, specifically, private commercial banks. Thus, the proposed resolution is to liberalize financial systems, allowing the market to allocate resources effectively.

However, at the time of writing this paper, the financial system is being blamed as the real culprit behind the economic crisis and global recession. The call for prudent regulations and supervisions are loud and clear. The financial system is increasingly on the receiving end of criticisms from both the academic world and social movements. In particular, big financial conglomerates are said to be destroying the whole economy through their greedy motives. This is the very moment in which the free market philosophy is in a crisis of faith. Grabel (2003: 326) argues that financial liberalization creates a bubble that induces banks to engage in speculative activities at the expense of lending for productive investments.

Historically, the debate started over questions of causality between finance and economic development. Prominent figures in economics such as Joan Robinson (1952: 86) support the idea that finance is at the subordination of industry, ‘where enterprise leads, finance follows’. However, those who follow the notions of the classic economists such as Joseph Schumpeter (1912) argue that firms need to borrow investment funds from commercial banks in order to finance their projects. Along the same lines, the financial liberalization thesis of McKinnon (1973) and Shaw (1973) argues that regulations and controls that are imposed on the financial system will impede the ability of financial intermediaries to finance productive investment, thus dampening the growth of economy. This view has prevailed among mainstream economists as well as the major intergovernmental bodies such as the World Bank, IMF and UN. Growing literature in association with sophisticated econometric techniques makes attempts to prove the positive relationship between financial development and economic growth; Goldsmith (1969), King and Levine (1993), Levine and Zervos (1998) and Watchtel (2003), for example.

The disbelievers of financial liberalization hypothesis economists such as Arestis and Basu (2003), Arestis and Glickman (2002), Arestis (2004 and 2005), Grabel (2003 and 2010), Bresser-Pereira and Gala (2009), Rodrik (1998), Rodrik, and Subramanian (2009) and Guirat and Pastoret (2009), counter that financial liberalization does not necessarily lead to economic development. Rather, it destabilizes the economy, making it more vulnerable to global volatility, eventually leading to economic crisis. However, up to this point, the main debate between supporters and opponents of the financial liberalization hypothesis has been largely limited to whether or not financial liberalization leads to economic growth. In other words, who should allocate resources from financial systems to finance investment, the market or the state?

While this question continues to spark much debate, this paper does not intend to continue the dialogue on whether the financial system should be regulated or not. Instead, it aims to explore an element that has been neglected or sweepingly bypassed. That is, *do commercial banks contribute to productive investment*, and if so, *what is the nature of their contributions?* This topic needs to be problematized because the conceptualization of bank financing investment is a fundamental part of economic theory for both orthodox and some heterodox economics. This idea can be seen in the principal economic model where the household is a saver, the firm is a borrower and the bank plays the role of matchmaker. The question is why the firm needs to borrow from the bank. Moreover, bank finance investment is a principal ideology of the practice of *quantitative easing*, in which developed countries such as the U.S., the UK and Japan have been continuing to print money relentlessly (Inman 2012) in order to rescue their economies from wounds of the crisis since 2008. Yet, signs of recovery in the global economy, especially in the Northern countries, seem yet to have come.

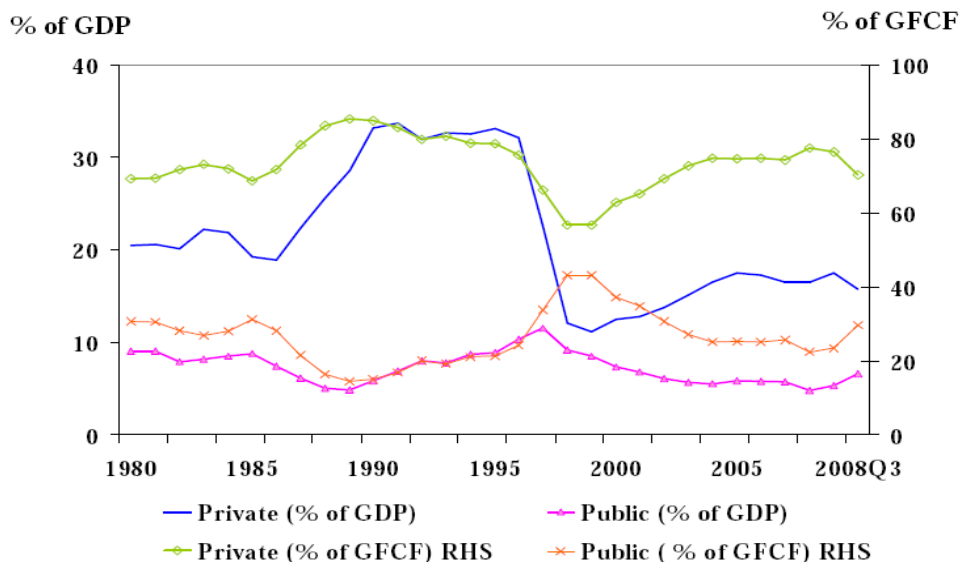
Secondly, it has been widely acknowledged since the origin of capitalism in the 18th century that industrialization is one of the transitional keys to release a country from the state of undevelopment/underdevelopment. OECD countries such as the U.S., the UK and Germany from the Western side and their Asian counterparts Japan and Korea have transformed from agricultural societies to manufacturing economies. Hence, this research paper will focus on the manufacturing sector. The assumption of the paper is that capital accumulation in the manufacturing sector, such as machinery and plants or research and development (R&D) in innovative projects, requires long-term finance with fixed interest rates and is full of risk. Thus, there is the question, when considering their balance sheets, as to why banks would provide long-term credit because it can induce the maturity mismatch problem in their assets and liabilities sides. To elaborate, while the maturity of assets side is lengthened when banks provide long-term credits, the maturity of liabilities side may not keep up with it, as the time range of deposit is not long enough. This can be also the case due to the fact that commercial banks make profits from the gap between lending and deposit interest rates. If external factors such as an increase in inflation rates cause real interest rates to decline, commercial banks would suffer from the loss.

Thirdly, this paper will focus on Thailand. The characteristics of the Thai economy are, from an historical perspective, interesting to examine the claims of both orthodox and heterodox economists. The capitalist system of Thailand

has embraced various kinds of structural changes; it has walked through all paths that economists on both sides blame and praise. The financial system used to be regulated. The practices such as interest rates ceiling, capital control and limitation of foreign ownership were implemented. However, this was until the government chose to enter the financial liberalization path in the end of 1980s. In addition, as it was exposed to the process of globalization, the spotlight used to shine on Thailand as a new industrial economy with two digits of economic growth rates. Thailand was recognized by the World Bank as an ‘East Asian economic miracle’; during 1960-1995, the average growth of real GDP was 7.7%, the ratio of population who living below the poverty line fell from 60% to less than 15% over the same period (Sussangkarn and Vichyanond 2007: 101). Yet, within two years, the illusion was shattered by the East Asian Crisis in 1997; real GDP growth fell abruptly to -10.2% in 1998, thousands of businesses were shut down, and millions of people became unemployed. Still, despite witnessing the crises that emerged from financial systems, namely the East Asian Crisis as experienced in Thailand and the Subprime Mortgage Crisis in 2008 which exploded from the heart of the most advanced financial system of the world economy, the U.S., Thai authorities still believe that financial systems are the key to sustainable development, as indicated in the speech below by the governor of the Bank of Thailand (Trairatvorakul 2013):

[S]trengthening domestic capital markets would help allocating available savings to the most productive use, thus, facilitating real sector’s economic activities and supporting economic growth.

Figure 1.1: Private and Public Investment in Thailand as Percentage of GDP and Gross Fixed Capital Formation



Source: Decharuk (2009:5)

However, the question mark grows when looking at the level of private investment. Figure 1.1 reports the level of private investment as a percentage of GDP (the first axis). The private investment rates have been stagnant at around 20% since 1980, leaving aside of the speculative period of 1990-1997. This stylized fact helps fuel doubts over the contributions of the financial system to investment in Thailand. As far as investment promotion is

concerned, if the financial system is important as claimed by the Thai authority above, why has the share of private investment not been rising for so long? Thus, this paper aims to investigate the role of Thai financial system in private investment financing.

1.2 Objective of Study

This paper aims to investigate the principle sources of investment financing in Thailand. One sub-objective is to look at the contribution of external and internal financing. Within this context it will be looking at the contribution of individual savings, bank financing and retained earnings.

The study will firstly aim to examine the financial liberalization scheme in Thailand. Mainstream economists claim that financial liberalization will help increase savings, which, in turn, financing long-term investment. It will test two fundamental assumptions of mainstream financial liberalization theory that i) savings is a prerequisite for investment and ii) banks finance long-term investment. The first assumption underlies the presumed positive correspondence of household savings with real deposit interest rates. In this context, it will examine the effect of financial liberalization on household savings. Then, the relationship between household savings and interest-bearing liabilities of commercial banks will be explored. The correlation between household saving rates and real interest rates will be tested, afterward. For the second assumption, emphasis will be placed on long-term finance since this is the basis for fixed capital formation. Thereafter, the study will look at profits and investment.

1.3 Hypothesis

Commercial banks provide little or no long-term investment finance for private corporations. Therefore, the most investment finance comes from retained earnings (those not distributed in the form of dividends).

1.4 Data and Methodology

The data for this study was collected from primary and secondary sources. Since the core part of the analytical piece, especially the analysis of mainstream perspectives, is macro-level, there is a strong reliance on secondary data. For the macro-level analysis, the timeframe primarily covers 1980 to 2011. Additionally, the baseline structural breaks are when the financial system was liberalized and the East Asian Crisis erupted in 1997.

Nonetheless, at the firm level analysis, the data is mainly primary, collected from the balance sheets of manufacturing firms registered in the stock market. As data that this research paper uses are numerical, this paper employs quantitative methods. It features tables and graphs in order to answer the questions raised above. An econometric approach was also employed to construct/deconstruct the relationship between household savings and real deposit interest rates.

1.5 Scope and Limitations

This study aims to find out the quantitative contribution from commercial banks. The qualitative roles such as screening firms, providing information and efficiency improvement are beyond the scope of the paper. In addition, the data was acquired from many sources which have different timeframes. Thus, the continuation of data is a weakness of the paper. The problems of each data set will be elaborated further in each chapter. As for the micro-level data, the study covers only 99 manufacturing firms due to limited time to collect data, and the period is 2008-2012, according to the data available. The firms examined were registered in the stock market of Thailand and classified under Industrials (*INDUS*) and Technology (*TECH*) groups¹ of business.

1.6 Structure of Paper

The next chapter represents critical analysis of literature on the sources of investment financing. It is divided into two parts. The first part looks at literature coming from mainstream economists in the context of the financial liberalization hypothesis arguing that investment financing comes from external sources. Some heterodox literature also supports this argument. The second part shows the evidence from developed countries and a case study of China. Chapter 3 provides background of the capitalism development in Thailand and of credits from commercial banks. The analytical parts are found in Chapters 4 and 5. Chapter 4 will test mainstream arguments, exploring how commercial banks contribute to real investment, while Chapter 5 will look at the firm side, investigating their dependency on financial institutions and demonstrating the investment-profits nexus. The final chapter will consist of a conclusion that includes policy recommendations.

¹ *INDUS* includes automotive, industrial materials & machinery, paper & printing materials, petrochemical & chemicals, packaging and steel sectors. *TECH* includes electronic components and information and communication technology sectors (Stock Exchange of Thailand: SET).

Chapter 2

Literature Review: How Investment Is Financed

This chapter is comprised of two parts: external and internal financing views. For the purposes of this paper, external finance refers to investment finance that comes from banks' loans, whereas internal finance refers to profits which are not distributed to shareholders. The external financing view is also divided in two groups: orthodoxy and heterodoxy. The orthodox one is grounded in the financial liberalization hypothesis because it is a framework that has been used by most mainstream economists and has been adopted into policy guidelines for the World Bank, IMF and UN. A critical review will be also given to some heterodox literature. The second section will cover internal financing. The last section will be a chapter conclusion.

2.1 External Financing

In general orthodox economic models, external financing is argued to provide sources of funds for the expansion of production of goods and services, i.e., investment. This is a major justification for financial institutions in modern mainstream economic theory. Financial institutions, especially banks, play a significant role in financing productive investment. Fry (1995) cites the work of the great Austrian economist, Joseph Schumpeter (1912) as providing a justification for this role, 'He (an individual) can only become an entrepreneur by previously becoming a debtor' (Schumpeter 1912: 102 as cited in Fry 1995: 22), Hence, Schumpeter (1912: 74) regards 'the banker as a key agent in this process' (as cited in Fry 1995: 22).

This idea has become a foundation of modern orthodox economics and helps mainstream economists justify the concept of savings as a prerequisite for investment. Financial intermediaries are seen as pooling funds from savers and channeling them to investment. McKinnon (1973) and Shaw (1973) put forward the financial liberalization theory along similar lines, arguing that domestic financial systems should be liberalized² (Grabel 2010: 5), in order to allow financial institutions to channel funds (savings) effectively to productive firms. This thesis was put forward to challenge the common practices of developing countries during the 1950s to 1960s, characterized by support for state involvement in economic activities and regulation of the financial system (Fry 1995: 23). Low real interest rates discourage savers from putting money into banks; high reserve requirements limits banks from lending more credit; and government direct credit distorts allocation of credit as it does not allow bankers to 'ration the available funds according to the marginal productivity of investment projects but according to their own discretion'. As a result, economic growth is dampened because savings is not sufficient to

² The act such as regulating financial institutions, interest rates ceiling, government direct credit and capital control ("repressed finance" or "shallow finance") which distort finance price (e.g. interest rates and exchange rates) should be removed.

supply productive investment because they are not allocated effectively and so return is too low (Arestis 2005: 6).

The fundamental assumption of financial liberalization hypothesis is that savings precludes investment. Savings, in this sense, refer to non-consumed output: 'Saving, *defined* as income not consumed, is a national accounts construct that traces the use of real production. [...] By construction, it simply captures the contribution that expenditures other than consumption make to income (output)' (Borio and Disyatat 2011: 7). With this notion, the source of savings is individuals/households who sacrifice their current consumption. The fundamental assumption underpinning financial liberalization is that household savings respond positively to real interest rates (Arrieta 1988:589). Shaw (1973: 7-9) argues that the developed financial system in which finance prices (e.g. interest rates) reflect the value of money correctly (not overvalue the future) will offer high incentives to savers (high real interest rates) to decrease their present consumption. Liberalization leads to financial development, which, in turn, offers various ways of saving to savers, increases savings, causes investment to flourish, and finally, leads to economic growth. He also admits that internal financing exists, but in the context of an underdeveloped economy in which investment and economic growth are dormant: 'In the repressed economy savings flow mainly to the saver's own investment; self-financed prevailed. In the liberalized economy savers are offered a wider menu of portfolio choice' (ibid: 10). In summary, for mainstream economists, the crucial key to promote savings (then investment and economic growth) is to raise real interest rates and to improve institutional factors. For the latter, liberalizing the financial system from any interventions will allow financial intermediaries to mobilize more savings from the households and to allocate more credit to finance investment projects (Fry 1995: 38).

At this point, the notion that investment financing comes from the financial system has become a fundamental assumption of finance-growth nexus literature, (e.g., King and Levine (1993), Levine and Zervos (1998), Levine (1999), Levine et al. (2000), Rausseau and Watchtel (2000), Watchtel (2003) and Beck and Levine (2004) and Levine (2005)). These authors employ an econometric method to empirically test the relationship between the financial system and economic growth. The implicit premise is that a deregulated (developed) financial system would enable financial intermediaries to provide more long-term credits to business. Therefore, the authors use broad money supply³ as a share of GDP and private credits to the business sector as proxies of financial development. The results of these studies show a significantly positive relationship between financial variables and economic growth. Then, the authors conclude that a developed financial system can foster long-term economic growth via the mechanism of financial

³ As broad money supply includes 'currency held outside of the banking system plus demand and interest-bearing liabilities of banks and nonbank financial intermediaries', the premise of using this variable is that 'the size of the financial sector is positively correlated with the provision of financial services' (King and Levine 1993: 529).

intermediaries who are able to provide credit to support firms' innovative projects. Hence, the policy recommendation is to liberalize the financial sector.

This policy has been widely promoted by major international organizations such as the World Bank, IMF and United Nations. For example, at the UN Monterrey Conference in 2002, the consensus was that to foster economic development, the driver is private banks, and public banks must give the way to them (Guirat and Pastoret 2009: 69). This policy approach has been developed further under the financial liberalization framework to conclude that foreign ownership of banks will increase accessibility of credit for local firms. In case of the Maghreb region, the IMF views that 'traditional banks—and more particularly public banks—cannot provide North African countries with the necessary finances to support their economic growth, and they should therefore be replaced by private banks or financial intermediaries.' (ibid: 76).

In addition to financial development, Lin et al. (2009: 19-20) propose the idea of financial development compatible with the comparative advantage of each economy. For example, capital intensive firms in advanced economies tend to be a large size and to engage with R&D activities in order for technology innovation. These firms 'often require a larger amount of external finance'. Thus, to facilitate innovative technology, they argue that venture capital is required at the initial stages but the key engines are the stock market and big banks. In contrast, for developing countries which have in labour-intensive industries, external finance is required less compared to advanced economies and small local banks are suitable for 'monitoring and screening' firms.

The view that investment financing comes from external sources does not prevail among only mainstream economists. Some heterodox economists also share this view. The first group among these is those who stand against financial liberalization theory. They criticize the fundamental assumption of the thesis that saving is prerequisite of investment. Arestis (2004: 259-260, 2005: 12) posits that savings 'can only facilitate the finance of investment' but 'it cannot *finance* capital accumulation ; this is done by the banking sector, which provides loans for investment without necessitating increases in the volume of deposits.' Additionally, he asserts that it is loans that generate deposits, not that 'deposits create loans'. This follows Keynes's argument that 'Increased investment will always be accompanied by increased saving, but it can never be preceded by it. Disharding and credit expansion provide not an alternative to increased saving, but a necessary preparation for it. It is the parent, not the twin, of increased saving' (1939: 572 as cited in Guirat and Pastoret 2009: 68). Likewise, Guirat and Pastoret (ibid: 81) argue that a firm's production, growth, expenses for wages and capital goods are mainly funded by banks.

Another group of heterodox economists comes with a theory which has been widely employed recently to analyze the Subprime Mortgage Crisis in the U.S. during 2007-2009—that the financial sector dominates the real sector. Among these, this paper will look at the pioneer whose theory has served as the basis of harsh critiques toward the financial system since the Subprime Mortgage Crisis, Hilferding (1910). His proposition of finance capital is that firms have a tendency to become joint-stock companies (JSC), who seek external financing from the stock market, and this in turn forms a connection between money and industrial capitalists. This provides an opportunity for the

banks to acquire shares of the firm and then the right to control it in order to appropriate more profits (Marois 2012: 140). He proposes the idea that supply of fixed capital formation came from the close-knit relationship between banks and firms (Lapavitsas 2010: 182). Furthermore, Marois (2012:140) notes that Hilferding saw advantages of JSC over privately owned companies. Among these is that credit is made more widely accessible, removing money capital as a barrier to expansion.

This section up until this point has provided the overview of external financing theory, i.e., that investment financing comes from financial institutions. Nevertheless, this view, especially when coming from the orthodox school, should be treated in a skeptical manner because there appear to be some flaws in its assumptions that i) savings is prerequisite of investment and ii) banks provide long-term credit to finance long-term investment. The second assumption also applies to the view of heterodox economists.

The first assumption derives from what can be observed in national accounts, that savings is usually more or less equal to investment, and it has become the foundation of mainstream economic theory. Recalling the very first economic model in any introduction economics course, a household is saver unit of the economy, whereas a firm is a borrower, for the purpose of investment financing through the mechanism of a financial institution. The shortcoming of this model which that needs to be problematized is the definition of savings.

The definition of savings that underpins the financial liberalization hypothesis needs to be revisited. The definition of savings which has been used is “non-consumed output”. This definition leads to the misleading understanding that savings come from households. And it has been wildly used and accepted as it can be seen in the very first economic model that has been taught so far in the introduction course. According to this model, households play a role of savers, whereas firms are investors who dissave and need to be funded by financial intermediaries who mobilize savings from households. This leads to the question of why a firm needs to borrow from a bank, or why they are classified as a dissaver. Then, who are the savers is needed to be redefined; households/workers or firms/entrepreneurs. Kaldor (1957: 177) argues that workers spend most of their income on consumption. The ones who save are entrepreneurs by which savings is extracted from their profits; therefore, increasing interest rates dampens their profits, then savings.

Secondly, national savings are comprised of the surplus from a private sector (households and corporations) and the government, and from the deficit of current balance. With respect to the problematic definition of savings, investment financing is understood to be sourced from households. However, surplus from corporations comes from profits which are internal sources but its significant role is commonly ignored due to the misleading definition that a firm is a borrower. Akyutz and Gore (1996) study the success of East Asian countries, arguing that the main source of investment financing did not come from external sources (households), but from a corporate internal source, retained profits. In Japan, during 1960-1970, the surplus from households took a share in private investment just only 24%, while 60% of corporate investment came from their own internal source. The proportion of investment financing is similar to Korea where household surplus and firms’

internal financing accounted for 15% and 40% of total business investment, from 1980 to 1984, respectively (ibid: 465). In sum, the argument that savings is a prerequisite of investment needs to be treated with caution because in the case of private savings, it comes from both external (households) and internal (corporations) sources. It should not be generalized that private savings comes from only external sources.

The next point that needs to be addressed is the relationship between real interest rates and behavior of savers. Mainstream argument is that hoarding money (non-savings) is a result of low interest rates that discourages individual to give up their present consumption. Nonetheless, in reality, money hoarding is a common practice for precautionary purpose, according to Keynes's liquidity preference theory. Moreover, there is no consensus in the econometric result that shows positive relationship between real interest rates and household savings. Warman and Thrilwall (1994) conduct study on Mexico during 1960-1990. According to their OLS analysis in which first-order autocorrelation is accounted for⁴, a financial savings⁵ variable shows positive and statistically significant result to real interest rates. However, the authors use the (real) absolute value not as a share of GDP; therefore, it is hard to visualize whether savers give up their present consumption or not. Still, the authors explore further on private domestic savings⁶ and total domestic savings⁷, finding that both type of savings is invariant to real interest rates but very sensitive to real income.

In addition, Pootrakool et al. (2005) study the determinants of household savings as percentage of GDP in Thailand during 1975-2003 adopting Error Correction Model analysis. The result shows that the coefficient of real time deposit interest rates has a positive and statistically significant⁸ with household saving rates but the magnitude is very low (0.002). Jongvanich (2011) also studies the determinants of household saving rates in Thailand with a longer period of study, from 1960 to 2004, and more control variables⁹, exploiting Autoregressive Distribution Lag method. The empirical finding shows the contrary results to the former study (Pootrakool et al. 2005) by which real interest rates has no statistically significant to household saving rates, even though the coefficient exhibits the positive sign. In sum, it is doubtful on the firmly argument and policy recommendation from orthodoxy that real interest rates positively determines household savings when the empirical results can be varied by econometric methods, control variables or time and country

⁴ The authors apply Corchrane-Orcutt procedure.

⁵ Change in monetary assets which comprise of short-term banking instrument, non-bank financial instrument such as Treasury bills and other government bonds and commercial papers, plus long-term banking instruments and government bonds, plus notes and coins.

⁶ Private savings come from households and enterprises.

⁷ Total savings is private savings plus government savings.

⁸ Other significant variables are growth of GDP and market capitalization as a proportion of GDP.

⁹ The model specification accounts for growth of real income per capita, real income per capita, aged structure, inflation rates, consumer credits, public saving and corporate saving rates.

specific, so does the fact that increasing real interest rates would encourage investment.

The second assumption that needs to be discussed is that banks finance long-term investment. The economists who both support and challenge the financial liberalization hypothesis share the view that investment funding is financed by banks, as reviewed in the previous section. This claim needs to be addressed with caution. The crucial question that needs to be raised is of what types of loans are provided – short-term or long-term? This is because, unlike long-term credits, the main purpose of short-term loans or working capital is to smooth a firm's cash flow operation rather than to finance investment projects. According to the aforementioned finance-growth nexus literature, the credit variable that the authors use cannot indicate the type of credit. Similarly, it is not evident what proportion of bank loans goes toward financing investment. The variables such as broad money supply or amount of credit to the private sector do not indicate that loans are utilized to finance investment projects. Hence, credits from the commercial banks that contribute to economic growth perhaps do not work as financing investment, as orthodox economists propose (e.g. King and Levine 1993 and Watchtel 2003). This skepticism also applies to the claims of dissenters of financial liberalization such as Arestis (2004 and 2005) and Guirat and Pastoret (2009).

Another condition that creates difficulty for commercial banks to lend long-term is the maturity mismatch between assets (lending) and liabilities (money deposits). For the purpose of financing projects such as machinery, plants or infrastructure, firms typically require long-term finance with fixed interest rates in order to evaluate the rate of return. On the other hand, commercial banks have difficulty in granting long-term loans because their available resources come from short-term deposits. For example, it is rare to see individuals put money in the bank for a long time, say more than 5 years, and if they do, the deposit interest rates should be very high. The follow-up question is how could firms afford these higher interest rates for a long period?

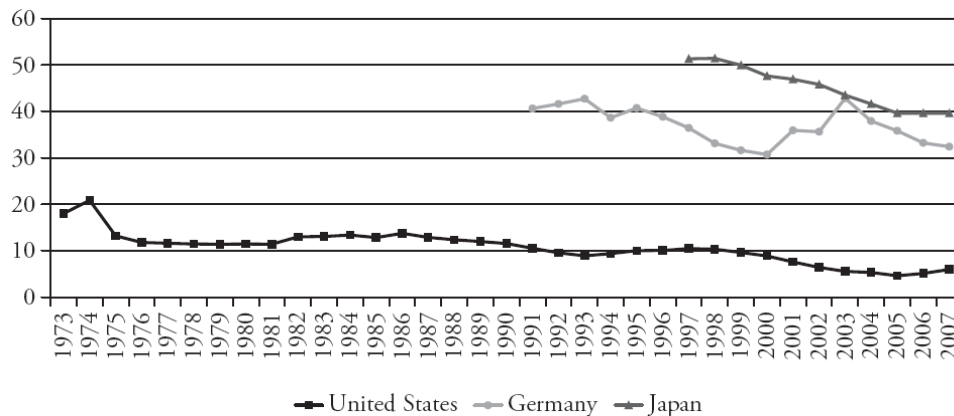
Furthermore, granting long-term loans with fixed interest rates would become risky for commercial banks themselves due to the fact that real interest rates can be volatile due to many factors such as monetary policies, differences in interest rates among countries and inflation. If real interest rates decline, banks can gain more profits, yet if they increase, banks would suffer loss. Regarding the uncertainty of the global economy, it is hardly possible that banks would lend long-term loans. A commercial bank might do so if it could charge flexible interest rates on a firm, though it is still questionable whether a firm would accept because volatile interest rates cause a highly negative impact on their project evaluation.

The last point regarding bank financing focuses on the argument of heterodox economists that the financial system dominates the real sector. This argument is founded on the work of Hilferding (1910). Although his theory is built upon Marx's theory that profits are the basis for capital accumulation, Hilferding parted ways with Marx in predicting that banks would dominate the industrial sector, by financing its investment. There are reasons to question Hilferding's theory. First, if raising funds from external sources comes with costs in terms of interest rates or the risk of being taken over, then why would firms continue in such a cycle? Second, if the source of funds of banks is

mainly from deposits, which are short-term, as argued above, then how it is possible that banks could make loans for financing long-term investment indefinitely?

The German and Japanese bank-based systems, where banks and businesses have a close-knit relationship, are generally used as examples to support the claim that banks control the economy. However, in case of Germany, the role of banks is to advise rather than to dominate, ‘sometimes providing companies with independent, well-informed and well-connected nonexecutive chairmen able to make a powerful contribution to the board's performance’ (Knight 1988: 15 as cited in Mayer 1990: 325). Similarly, Japanese firms and banks normally switch their staff between each other (Corbett 1987 as cited in Mayer 1990: 323). It is interesting to note that Japanese banks are obliged by law to finance firms, especially trouble firms in time of the crisis, compared with other advanced countries, in which private commercial banks have purely profit-driven motives (Peek 2008:3).

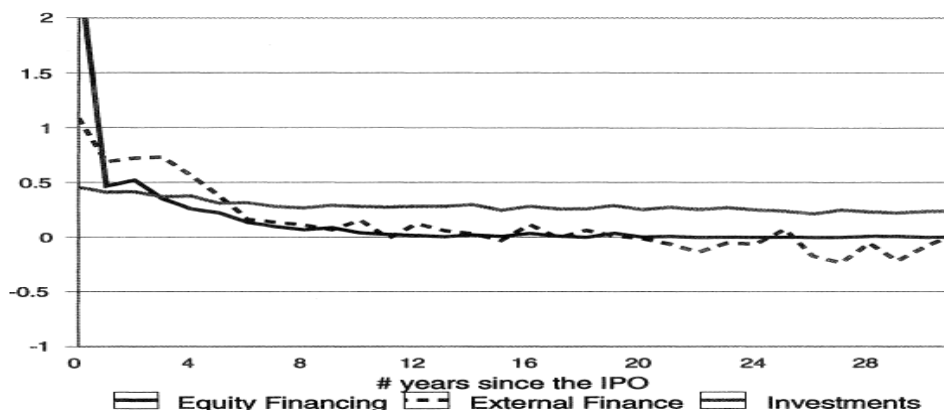
Figure 2.1: Bank-Loans as Percentage of Corporate Financial Liabilities



Source: *Lapavistas (2009: 127)*

Recently, Hilferding’s argument has been employed to explain the cause of the Subprime Mortgage Crisis. This is misleading because U.S. firms have depended significantly less upon bank loans for the past three decades, according to the flow-of-funds data in Figure 2.1. While banks do in fact have an important role in the early stage of a firm, once a firm is able to take control of a large share of the market and become a monopoly or oligopoly, banks have a less important role to play as the firm is increasingly able to fund itself internally (Sweezy 1968: 267). This point is supported by Figure 2.2, which demonstrates that during the 1980s, there was a sharp decline in the ratio of external and equity sources of investment financing for U.S. firms after the first year of their initial public offering (IPO). According to the graph, ten years after firms’ IPO, the rates of equity and external financing are almost zero. Thus, it can be implied that U.S. firms mainly relied on their own internal sources. To sum up, the evidence of the U.S. firms shows that firms do not rely more, but less, on bank financing once they mature.

Figure 2.2: Life Cycle of External Financing and Investment



Note: This graph plots the median level of external financing equity financing, and investments in the United States across three-digit SIC industries as a function of the number of years since the IPO. External finance is the amount of capital expenditures not financed with cash flow from operations, reduction in inventories, or decrease in trade credit. Equity finance is the net amount of funds raised through equity issues divided by amount of investments. Investment is the ratio of capital expenditures to net property, plant and equipment. The IPO year is defined as the first year in which a company starts to be traded on the NYSE, AMEX, or NASDAQ' (*Rajan and Zingales 1998: 565*)

Source: *Rajan and Zingales (1998: 565)*

2.2 Internal Financing

The previous section has demonstrated that the argument of mainstream economists that investment financing comes from external sources (households) is lacking theoretical grounding and more crucially, that there is little evidence supporting the claim that investment of firms is mainly dependent upon bank loans. Instead, the greatest source of investment financing comes from internal sources in the form of profits or retained earnings. Sweezy (1968: 97) asserts that the expansion of capital accumulation is a result of the growth of profits. Capitalists convert a large part of profits into 'additional capital' for the purpose of the expanding production (Sweezy 1972: 6). Additionally, Figures 2.1 and 2.2 have illustrated that U.S. firms rarely rely on external sources from bank and equity financing. Thus, it can be argued that the main engine of capital accumulation/investment is profits.

The evidence from countries whose financial systems are liberalized reinforces this proposition. Mayer (1990) conducts a cross-country study over 1970-1985 which is reported in Table 2.1, showing a flow of finance of averages financing as percentage of capital expenditure and stock building. It reports that the largest source of capital expenditures and stock building in seven advanced countries is retentions (*ibid: 310*). Although financing from banks is the main source of external finance (*ibid: 313*), the proportion of bank loans is very small, compared to retentions. Regarding Japan, it is interesting to note that the institutional arrangement of the financial system is different from other countries, as state development banks play a crucial role; however, retentions are a dominant source.

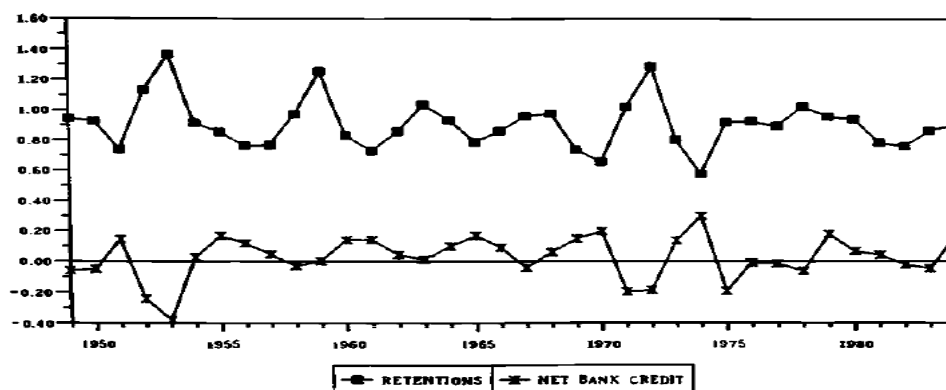
Table 2.1: Average Financing as Percentage of Capital Expenditures and Stock Building during 1970-1985

	Canada	Finland	France	Germany	Italy	United Kingdom	United States
Retentions	76.4	64.4	61.4	70.9	51.9	102.4	87.9
Capital transfers	0.0	0.2	2.0	8.6	7.7	4.1	0.0
Short-term securities	-0.8	3.7	-0.1	-0.1	-1.3	1.7	0.0
Loans	15.2	28.1	37.3	12.1	27.7	7.6	10.8
Trade Credit	-4.4	-1.4	-0.6	-2.1	0.0	-1.1	-2.5
Bonds	8.5	2.8	1.6	-1.0	1.6	-1.1	15.8
Shares	2.5	-0.1	6.3	0.6	8.2	-3.3	-1.3
Other	1.3	7.4	-1.4	10.9	1.0	3.2	-3.9
Statistical adjustment	1.2	-5.0	-6.4	0.0	3.2	-13.4	-6.9
<i>Total</i>	<i>99.9</i>	<i>100.1</i>	<i>100.1</i>	<i>99.9</i>	<i>100.0</i>	<i>100.1</i>	<i>100.0</i>

Source: Mayer (1990: 312 and 314 for the U.S. Data)

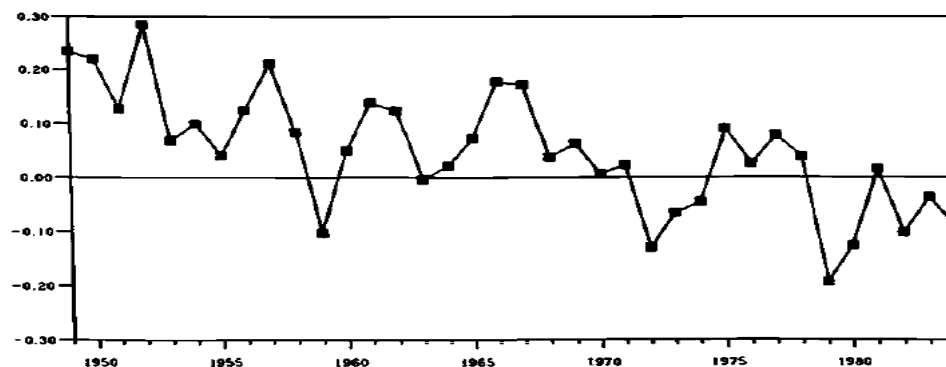
In addition to the cross-country study, Mayer also investigates the British economy during 1949-1984. The result is similar to the cross-country level that bank and securities financing contribute insignificantly to fixed investment, as shown in Figures 2.3 and 2.4, respectively.

Figure 2.3: Retentions and Net Bank Credit as Proportions of Fixed Investment



Source: Mayer (1990: 315)

Figure 2.4: Net Issue of Securities as Proportions of Fixed Investment



Source: Mayer (1990: 316)

Furthermore, in the British study, he focuses on the relatively high growth sectors of chemical and electrical engineering. The result, shown in Table 2.2, demonstrates that both sectors were heavily dependent on their own internal financing. Hence, he concludes, ‘There is no evidence of financial innovation and deregulation being associated with a growth in the contribution of market sources of finance’ (ibid: 317). Moreover, Table 2.3, which is derived from Table 2.2, indicates that, regarding the same industries, large corporations relied less on external financing vis-à-vis large firms (ibid). This result rejects the claim from Lin et al. (2009) who argued, as described in section 2.1, that large firms in advanced countries require more funds from external sources to finance their innovative projects. Based on his findings (Figures 2.2-2.4), he argues that finance from external sources is ‘working capital’ which is mostly provided by banks. To sum up, the evidence from Mayer (1990)’s study shows that retentions are the most contribution of investment financing.

Table 2.2: Average Financing of Two British Industries as Percentage of Capital Expenditures and Stock Building during 1949-1984

	All Samples	Chemicals and Allied Industries	Electrical Engineering
Retentions	91.0	89.7	117.3
Trade Credit	1.5	-2.2	-11.9
Bank Credit	2.7	-2.2	-20.4
Long-term liabilities and Issues of Shares	4.8	14.7	15.0
<i>Total</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Note: The all sample refers to the period 1949-84; chemicals and allied and electrical engineering industries relate to the period 1949-82.

Source: Mayer (1990: 318)

Table 2.3: Average Financing as Percentage of Total Sources of Finance during 1977-1982, Categorized by Size of Companies

	Retentions	Banks, Short-term Loans and Trade Creditors	Issues of Shares and Long-term Debt	Other Sources
<i>All companies</i>				
Large	70.9	23.2	5.7	0.2
Medium and Small	52.6	45.7	1.3	0.3
<i>Chemicals</i>				
Large	70.5	20.2	7.6	1.6
Medium and Small	50.3	50.2	3.8	-4.7
<i>Electrical Engineering</i>				
Large	79.4	19.4	3.1	-1.9
Medium and Small	60.4	37.4	2.4	0.1

Source: Mayer (1990: 318)

Corbett and Jenkinson (1997) conduct a cross-country study from flow-of-funds accounts of four developed countries—Germany, the UK and the U.S.—in order to answering the question of ‘How investment is financed?’. The results are reported in Table 2.4, representing net (consolidated) sources of finance as a share of fixed investment. These results are similar to the findings of Mayer (1990) that most of the physical investment financing came from internal sources, either profits or retained earnings (see full details in

Table A1 in Appendix A). Corporations in developed countries rarely relied on external sources of finance.

Table 2.4: Net (Consolidated) Sources of Finance as Percentage of Fixed Investment

	1970-74	1975-79	1980-84	1985-89	1990-94	1970-94
Germany						
Internal	68.6	82.8	79.7	89.3	71.8	78.9
Bank Finance	15.7	8.4	11.2	7.9	16.9	11.9
Bonds	1.9	-2.8	-2.1	0.6	-2.8	-1.0
New Equity	0.7	0.5	-0.5	2.3	-3.1	0.1
United Kingdom						
Internal	98.1	102.3	115.4	81.2	81.2	93.3
Bank Finance	26.2	6.8	12.4	29.8	0.2	14.6
Bonds	3.3	-1.3	2.0	8.8	6.3	4.2
New Equity	-7.3	-3.3	-7.6	-20.4	12.4	-4.6
United States						
Internal	74.4	91.5	89.6	103.7	109.8	96.1
Bank Finance	26.6	14.1	12.9	15.0	-4.5	11.1
Bonds	15.7	14.9	10.9	24.8	10.4	15.4
New Equity	7.3	0.7	-4.8	-29.6	-4.2	-7.6

Source: Corbett and Jenkinson (1997: 74, 81-82 and 84)

Moving on to the countries whose financial systems are regulated by the state, the evidence also shows that the most dominant source of capital accumulation comes from internal sources, but the proportion of bank loans is relatively high, especially in their early stage of development, compared to the Western countries, as shown above. This is because of the states' control over their financial systems; state development banks are established and a low interest rates policy is implemented to help finance investment (Singh 1998: 119). In the case of Japan¹³, in the late 1950s, retained gross profits comprised around 60% of gross manufacturing investment, whereas long-term loans covered the rest. The percentage of retained gross profits increased to 75% in 1970s and more than 100% by the second half of 1980s (Tsuru 1993: 188-189 as cited in Ayutz and Gore 1996: 465). This stylized fact is consistent with the study of Corbett and Jenkinson (1997) which demonstrates the sources of investment in Japan after it had already become an advanced country, shown in Table 2.5 (see full details in Table A1 in Appendix A). It reports that an internal source contributed the most to fixed capital financing. The internal financing ratio has increased from period to period, whereas the proportion of bank financing, which was high during the 1970s, has kept falling. It can be concluded that once a country has developed, its dependency on financial institutions declines.

¹³ See also Akyutz and Gore (1996) and Singh (1998) for the details that the Japanese government regulated the financial system.

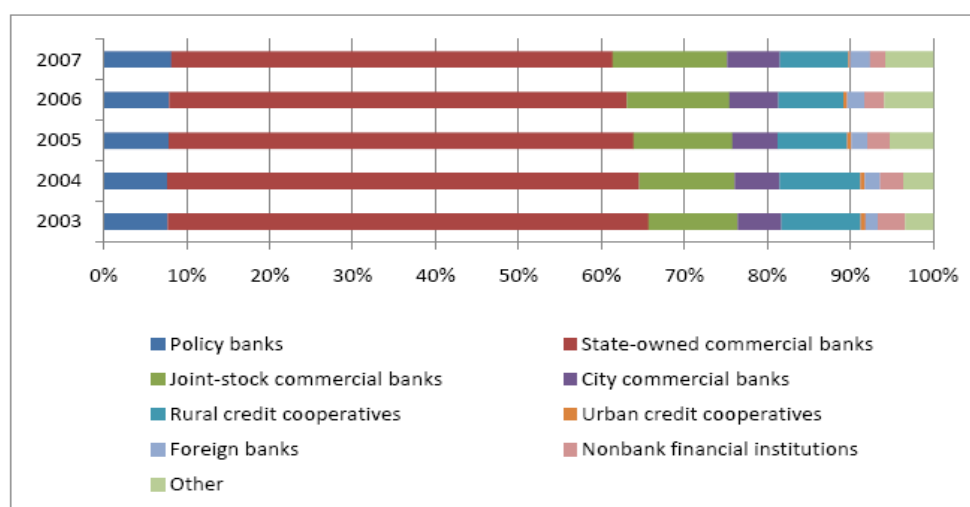
Table 2.5: Net (Consolidated) Sources of Finance as Percentage of Fixed Investment of Japan

	1970-74	1975-79	1980-84	1985-89	1990-94	1970-94
Internal	59.1	70.8	74.6	70.5	71.2	69.9
Bank Finance	42.7	33.9	31.7	28.0	19.5	26.7
Bonds	2.7	2.5	0.6	9.1	2.1	4.0
New Equity	2.5	3.3	3.6	4.4	3.1	3.5

Source: Corbett and Jenkinson (1997: 77)

Similarly, the Chinese financial system has also been being ruled by the Chinese government for many decades (Fischer 2013). The Chinese government is major player in its financial system. Figure 2.5 reports that in terms of assets, state-owned banks possess approximately 60% of total assets in banking system, state-owned commercial banks and policy banks (development bank). Policy and state-owned commercial banks can lend low interest loans to the business sector (Zhang 2012: 16 and Laurenceson and Chai 2001: 218). Moreover, finances from China Export-Import Bank¹⁴ enable state-owned firms and some large and medium enterprises to invest in natural resource rich countries such as those in the African region, in various sectors such as construction, logistics, and manufacturing (Mlachila and Takebe 2011:17).

Figure 2.5: Market Share (by Assets) of China's banking institutions during 2003-2007



Source: Burzynskur (2009: 17)

However, it would be misleading to say that most of investment financing comes from external sources because internal funds are a dominant source (Laurenceson and Chai 2011: 216). Table 2.6 records that during 2002-2004, the investment of the top 100 and top 20 largest Chinese enterprises has been mostly funded by their profits in cash form from their operation, and the share of profits in investment has become larger along with the astonishing growth rates of their profits (Barnett and Brooks 2006: 12). Table 2.7 provides information that supports this argument. It shows that internal sources (self-raised funds) have been the major source of total fixed investment since 1980,

¹⁴ It is one of three policy banks. The other two are China Development Bank and China Agricultural Development Bank.

almost three times of bank lending. The increasing growth rates of profits encourage firms to rely on internal financing (ibid).

Table 2.6 Cash Flow of 100 Largest Listed Companies (RMB billion)

	2002	2003	2004
Largest 100 companies			
Cash from operations	601	678	731
Cash used for investment	553	632	790
<i>As percent of cash from operations</i>	92.1	93.3	108.1
Gross investment in fixed asset	-	494	565
Largest 20 Companies			
Cash from operations	523	87	594
Cash used for investment	465	529	618
<i>As percent of cash from operations</i>	89	90	104
Gross investment in fixed asset	-	394	380

Source: Barnett and Brooks (2006: 13)

Table 2.7: Shares of Source of Funds in Total Fixed Investment

	1981-90	1991-98	1999	2000	2001	2002	2003	2004
State Budget	16.3	3.7	6.2	6.4	6.7	7.0	4.6	4.3
Domestic Loans	17.6	21.9	19.2	20.3	19.1	19.7	20.5	18.3
Foreign Capital	4.9	8.9	6.7	5.1	4.6	4.6	4.4	4.4
internal sources	60.8	65.4	53.4	52.2	52.4	50.6	53.7	55.7
Other sources			14.4	16.0	17.3	18.0	16.8	17.2

Source: Chinese Statistical Yearbook (2003: 187) and Barnett and Brooks (2006: 12)

The manufacturing sector is the area that the Chinese government has the least influence on as compared to infrastructure or mining. In the manufacturing, infrastructure and mining sectors, the state controlled around 58%, 89% and 84% of urban fixed assets, respectively, in 2004 (Barnett and Brooks 2006: 15). Still, even manufacturing state-owned enterprises have needed to rely on their own self-financing. In 2004, self-financing comprised almost 80% of total funding, as a compared with state-owned enterprises in other sectors which depend relatively more on domestic loans (Barnett and Brooks 2006: 16).

2.3 Concluding Remarks

This chapter has sought to problematize the conventional view that investment financing comes from external sources. It asserts that there are no theoretical and empirical grounds for arguing that individuals save while firms do not. It also suggests that there is no consensus of empirical results to claim that household savings respond positively to real interest rates. Hence, it has called into question the prevailing policies that recommend increasing savings from households by raising real interest rates and liberalizing the financial system. The crucial point is that savings that fund investment is national savings in which household savings is a part of it. It is a fallacy of composition to adopt these policies as far as promoting investment is concerned.

The second and most crucial point regards the types of loans. Orthodox and some heterodox economists lump all bank credits together without making a distinction between short- and long-term, which leads to the conclusion that the sources of investment finance come from external sources. However, the evidence rejects these claims, documenting that corporations mainly rely on profits, whether their financial systems are liberalized or repressed. The difference is that in the repressed systems, the proportion of bank loans to finance investment is higher than in the liberalized ones. This is because state-owned development banks can lend long-term loans with low interest rates, as shown in the cases of Japan and China. Still, the case of Japan, the proportion of bank loans has been declining since Japan graduated to be an advanced country in the early of 1970s, as with other advanced economies. This point stands in contrast to the claim of Shaw that self-financing prevails in the stage of underdevelopment.

It can be concluded that whether a financial system is liberalized or repressed, firms mainly rely on their profits. The contribution of banks is to provide working capital for sustaining the growth of firms, not their long-term investments.

Chapter 3

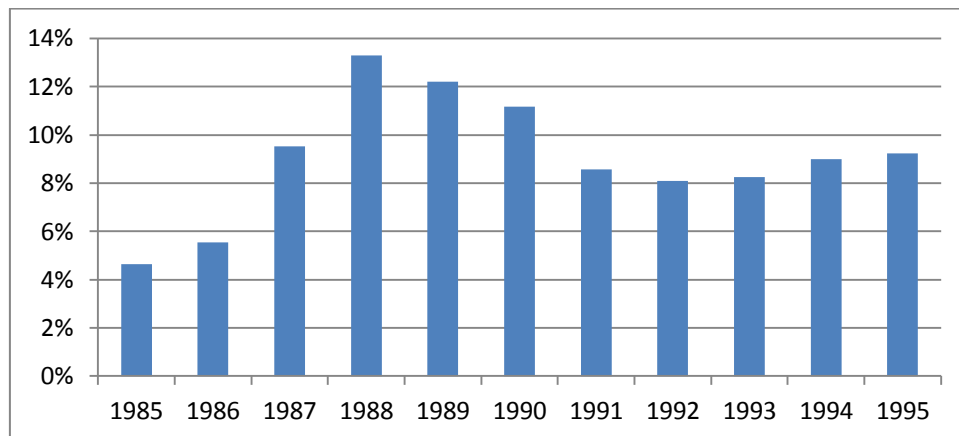
Thai Economy on the Financial Liberalization Path

The previous section delivered a critical review on how investment is financing. The empirical evidence shows that invest financing do not come from external sources, but internal, whether financial systems are liberalized or repressed. Before moving on to investigate where the sources of investment financing in Thailand comes from, this chapter will provide a summary of financial development in Thailand. The first section of this chapter will briefly shows the context of the financial liberalization scheme as well as the reasoning of Thai government behind the implementation of this policy. The second section will give a brief history of Thai commercial banks. The last section will offer an overview of credit trends from commercial banks, focusing on manufacturing credit.

3.1 Process of Financial Liberalization

Since the late of 1980s, Thailand has experienced an economic boom due to massive FDI from East Asian countries¹⁵ such as Japan, Hong Kong and Taiwan (Phongpaichit and Baker 1996: 31-21). The real GDP growth rates have become double digits during 1988-1990 Figure 3.1. The Bank of Thailand (BOT) recognized that the Thai financial system needed to be reformed in order to embrace the transition from an agricultural to a manufacturing economy.

Figure 3.1: Real GDP Growth Rate



Note: The base year is 1988.

Source: NESDB (National Income Account), Calculated by the author

¹⁵ This is due to the Plaza Accord Agreement in 1985 that forced the Yen to appreciate against the U.S. dollar, driving Japanese and other East Asian MNEs to seek new cost-effective export-based hubs in the South East Asian region, including Thailand. Japanese FDI flowed into the production of capital goods (Phongpaichit and Baker 1995: 144-156).

Hence, the financial liberalization path has been chosen (Vichyanond 2004: 7). From the money authorities' perspective, financial liberalization could enhance competition in the financial system which, in turn, would improve efficiency of financial institutions and be beneficial to the economy. Financial institutions could mobilize more savings and expand more credits to support increasing investments (Vichyanond 1994: 3-8). The government has decided to abandon "financial repression practices" by i) liberalizing the capital account; ii) removing the interest rate ceiling; and iii) deregulating the financial system.

To enhance competitiveness in the financial system, Thailand accepted Article VIII¹⁶ of the IMF Agreement on 1 May 1990, which led to free mobility of capital flows. The first phase began on 22 May 1990 (Momvittaya 2009: 56), resulting in the full liberalization of current account transactions and 'fewer restrictions of capital outflows' (Vichyanond 2000: 36). The second phase started on 1 April 1991 (Momvittaya 2009: 56). This phase concerned 'exchange control liberalization', 'allowing freer outflows of capital for overseas investment, repatriation of dividends and proceeds from sale of stock by foreigners. Resident individuals or juristic entities were allowed to open foreign currency accounts, subject to certain conditions, for example, the funds must have originated from overseas (e.g., export receipts)' (Vichyanond 2000: 36). The third round in February 1994 relaxed regulations further on outward FDI, along with 'travel expenditures and additional channels of cross-border payments' (Chantapong 2005: 64).

Additionally, in an effort to make Thailand an international financial center, the Bangkok International Banking Facilities was initiated (BIBF) in March 1993. 'At the same time, the BIBF also serves to fulfill the shortage of savings in the country and in the region to meet the investment needs' (Bank of Thailand 1998: 58). The BIBF provided 'three types of services: banking to nonresidents in foreign currencies and baht ("out-out" transactions), banking to domestic residents in foreign currencies only ("out-in" transactions), and international financial and investment banking services. The 46 off-shore banking licenses were issued to domestic banks, foreign bank branches in Thailand, and other financial institutions from overseas. The BIBF units must mobilize funds from overseas and extend credits only in foreign currencies' (Vichyanond 2000: 39). Furthermore, in August 1994, the BIBF practice was permitted to operate outside Bangkok, under the auspices of the Provincial International Banking Facilities (PIBF). The existing BIBF firms were eligible to apply for the license to run it. 'The PIBF's funding must be from overseas as in the case of the BIBF. However, the PIBF could extend credits both in Bath and in foreign currencies, while the BIBF could extend credits only in foreign currencies' (ibid: 40).

In order to encourage more savings to support the boom of investment, the interest rate ceiling was abolished. For long-term financing, the ceiling of one-year-and-over time deposit interest rates was abolished on 1 June 1989. Then, the ceiling of less-than-one-year time deposit interest rates was removed on 16 March 1990, followed by saving deposit and lending interest rates on 8

¹⁶ See full details on <http://www.imf.org/external/pubs/ft/aa/>

January 1992 and 19 June 1993, respectively (Vichayanond (1994: 4-5), Vichayanond (2004: 7) and Momvittaya (2009: 54)).

For the purpose of enhancing the capacity of financial institutions to expand their credits, the regulation on financial institutions was relaxed. For example, the rule that commercial banks needed to hold the government bonds as not less than 16% of total deposit when they planned to establish a new branch was abolished gradually. In November 1990, the proportion was lowered to 9.5% and eventually reduced to zero on 17 May 1993 (Vichayanond (1994: 6), Vichayanond (2004: 7) and Momvittaya (2009: 57)). In addition, from March 1992, financial institutions were allowed to perform an investment bank role: ‘debt under writing, dealing, fund management, and financial consulting’. Finance and securities companies were also allowed to undertake this role, except financial consultants, but they could operate leasing, mutual funds, foreign exchange business and establish provincial credit offices as well (Vajragupta and Vichayanond (1998: 7) and Chantapong (2005: 64)).

It can be observed that Thai authorities gradually liberalized the capital account, interest rates and regulations. Table 3.1 reports the summary of chronology of financial liberalization.

Table 3.1: Brief Chronology of the Financial Liberalization Scheme

Date	Events
1989	
June	Removing the one year and over time deposit interest rates ceiling (from 9.5% per annum)
1990	
March	Removing the less than one year time deposit interest rates ceiling
May	Accepting Article VIII of the IMF Agreement Kicking off the first phase of capital account liberalization
November	Lowering the requirement of holding the government bonds to open a new bank branch from 16% to 9.5% of total deposits
1991	
April	Kicking off the second phase of capital account liberalization
1992	
January	Removing the saving deposit interest rates ceiling
March	Allowing commercial banks and financial and securities companies to perform an investment bank role
November	Lowering the requirement of holding the government bonds to open a new bank branch to 6.5% of total deposits
1993	
February	Lowering the requirement of holding the government bonds to open a new bank branch to 5.5% of total deposits
March	Initiating BIBF
May	Abolishing the requirement of holding the government bonds to open a new bank branch
June	Removing the lending interest rates for commercial banks' loans ceiling (from 19% per annum)
1994	
February	Kicking off the third phase of capital account liberalization
August	Initiating PIBF

Source : Vichayanond (2000: 36-40), Chantaphong (2005: 64) and Momvittaya (2009: 54-57)

However, after experiencing the East Asian Crisis in 1997, skepticism was raised over the financial liberalization regime. For example, credits that were

provided by commercial banks during the period of liberalization tended to be short-term. This is because of the provisioning requirement for risky assets of the Basel Capital Accord. In the case of developing countries, financial intermediaries were required just 20% provisioning for borrowing short-term, compared to 100% for long-term (Sussangkarn and Vichyanond 2007:102).

Additionally, Thanapornpan (2000: 57) argues that the high interest rates policy caused a perverse effect; it led to massive inflows into low-yield sectors as the Thai economy had limited investment opportunities. As a result, the growth of the tradable sector was stagnant and replaced by the non-tradable sector; firms poured money into real estate properties, contributing to a bubble that had been inflating since the economic boom of the late 1980s (Bello et al. 2000: 95) and stock market, instead of improving their productivity (ibid: 56). Other real sectors were also bloated; in 1996, there was oversupply of domestic demand in the automotive industry, private hospital beds, steel bars and petrochemicals by 192%, 300%, 150% and 195%, respectively (Vajragupta and Vichyanond 1998: 17). This is consistent with the argument of Rodrik and Subramanian (2009). They argue that the benefit of capital inflows for investment depends on whether a country is 'saving- or investment-constraint'. If a country lacks investment opportunities, capital inflows will appreciate home currency, which damages export and profitability of investment and induces consumption at the expense of savings in the end (ibid: 12).

They (Rodrik and Subramanian (2009)) study how capital flow contributes to domestic investment in 16 developing countries¹⁷, including Thailand, during 1985-2006¹⁸, exploiting the U.S. interest rates as a proxy of capital inflows. The hypothesis is that 'The higher U.S. interest rates, the smaller the volume of capital inflows; and if the saving constraint binds, domestic investment in emerging market economies ought to be correspondingly lower' (ibid:13). The result shows that in almost all countries, their investment has a positive correlation with U.S. interest rates. This means that 'their investment rates tend to fall when U.S. interest rates are low and external liquidity is plentiful. This is the exact opposite of what one would expect to find in the presence of a saving constraint' (ibid: 13). Interestingly, the only two countries that have a negative relationship are China and India, who employ capital control. Still, this study does not show the amount of foreign capital that has been used to finance domestic investment.

After the crisis, the financial system was liberalized even more. For example, the restriction of foreign ownership was lifted up. With this, it caused a great impact to the structure of the Thai banking system. Shares of the biggest three private commercial banks were acquired by foreigners up to 49%, and many small and medium banks became foreign owned (elaborated further in Appendix B). Still to this day, it seems that from the perspective of the Thai monetary authorities financial liberalization is the resolution for promoting investment, as shown in the speech below by the governor of the Bank of Thailand (Trairatvorakul 2013):

¹⁷ Indonesia, Philippines, Thailand, Turkey, Argentina, Bolivia, Brazil, Chile, Columbia, Mexico, Peru, Malaysia, South Korea, Uruguay, India and China.

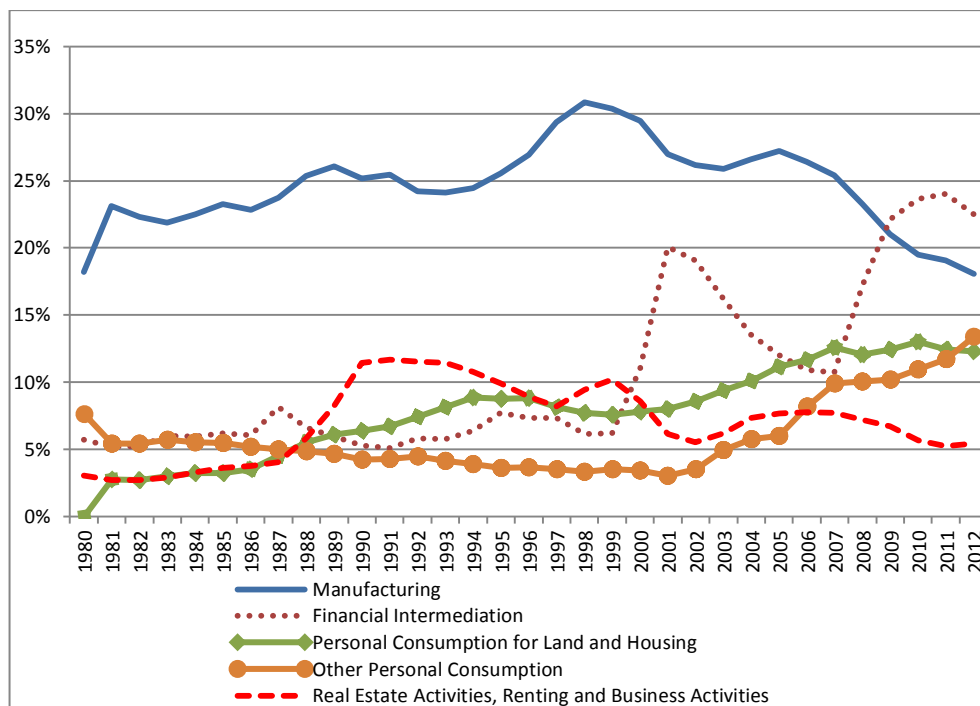
¹⁸ They estimate 2 periods; 1985-2006 and 1990-2006

Financial liberalization and regulatory reform efforts under the Financial Sector Master Plan provided opportunity for Thais, particularly small-scale firms, to have better access to finance. A competitive banking system and a vibrant capital market also helped strengthen investors' confidence through efficient resource allocation and appropriate pricing of risks.

3.2 Trends of Commercial Banks' Credits

The previous section provided the context of Thai financial liberalization. It explained that Thailand chose the financial liberalization path at the end of 1980s and the degree of liberalization was even greater after the East Asian Crisis in 1997. This last section will provide an overview of credit trends from commercial banks in order to comprehensively understand Thai commercial banks' lending behavior. Figure 3.2 depicts the share of credits from commercial banks from 1980 to 2012, classified by sector (full details can be seen in Figure C1, Appendix C). The East Asian Crisis in 1997 can be noticed clearly as the main structural break over this period.

Figure 3.2: Shares of Credits Classified by Sectors



Note: Total amount of credits is comprised of loans, overdrafts, bill and others. It is also composed of Thai commercial banks (exclude branch offices abroad), foreign banks branches and stand-alone IBFs (Out-in). Other Personal Consumption consists of hire purchase, education, travelling—overseas employment and other personal consumption.

Source: Bank of Thailand, Calculated by the author

Prior to the crisis, the manufacturing proportion of total credits had been increasing since 1985, following the boom from Japanese FDI. The share of manufacturing credits surged again dramatically after 1993 when the BIBF was established. The boom of credits also contributed to the bubble in the manufacturing sector, as noted in the previous section. In addition, the first section also notes that the bubble in real estate property started during the economic boom at the end of the 1980s; therefore, the increasing trends of the shares of real estate activities and of personal consumption for land and

housing can be observed in this period. From 1981-1990 the proportion of credit to real estate activities and personal consumption for land and housing in relation to total amount of credit are 4.85% and 4.08%, respectively. The rates doubled in the next decade to 10.06% and 7.98%, respectively, during 1991-2000.

It is worth noting the structural change in proportion of total credit from the commercial banks after the crisis. The percentage of manufacturing credits declined. The level of the share of manufacturing credits in 2012 was lower than the level at the time prior to the liberalization period and crisis: 18.08 (2012) compared to 23.62 (1981-1990) and 27.08 (1991-2000). Aside from this, commercial banks put an emphasis on providing credit to the financial sector after the crisis, as the graph shows signs of long-term growth: 6.07%, 6.89% and 17.66% during 1981-1990, 1991-2000 and 2001-2012, respectively. Likewise, the proportion of credit to personal consumption, especially for land and housing, rose significantly, reaching 11.12% of total amount of credit from 2001-2012. And for other personal consumption, the ratio increased more than twice over a decade, from 3.77% (1991-2000) to 8.12% (2001-2012). Since 2009, the credit to financial intermediation and personal consumption (all) has exceeded manufacturing credit.

Overall, Jansen (2011: 251-252) analyzes the balance sheet of commercial banks in the period before and after the crisis, asserting that banks have become more cautious after the crisis. They have strengthened their balance sheets by building up their reserves as well as acquiring foreign assets and reducing foreign liabilities, at the expense of the amount of credits loaned. Table 3.1 shows that, in 1996, a claim on household and private sectors was more than 80% of total assets. However, the share was shrinking after the crisis, decreasing to 56.5% in 2009.

Table 3.2: Asset and Liabilities of Commercial Banks (Percentage)

	1996	2005	2006	2007	2008	2009
Assets						
Reserves	2.9	7.4	8.9	10.0	14.0	14.8
Foreign Assets	3.2	8.0	10.0	9.4	5.3	5.8
Claims						
on government	0.1	3.7	4.4	4.1	3.8	5.1
non-financial state enterprises	2.0	2.6	2.4	2.6	2.1	2.0
household and private business	82.4	65.2	58.7	58.3	58.2	56.5
Other Assets	9.4	13.0	15.7	15.7	16.6	15.9
<i>Total Assets</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
Liabilities						
Deposits	59.9	66.7	68.2	64.7	63.3	62.1
Foreign Liabilities	22.0	3.9	3.3	2.6	2.8	2.7
Own Capital	8.9	13.4	9.3	9.8	9.9	10.1
Other Liabilities	9.2	16.0	19.2	22.9	24.0	25.2
<i>Total Liabilities</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Source: Jansen 2011: 253

Chapter 4

Analysis of the Mainstream View

The last chapter provides a context and chronology of financial liberalization schemes in Thailand as well as an overview of commercial banks' lending trends. This chapter will analyze the orthodox financial reform using Thai context, delivered in the Chapter 3 and data. Orthodox economists usually blame developing countries for their undeveloped financial systems because, given undeveloped financial systems, savings is not enough to finance productive investment. Hence, financial liberalization is the key to unlock this underdeveloped process. Liberalization, according to this argument, would help to mobilize savings from households to finance long-term business projects via the mechanism of financial institutions. To analyze this argument, this chapter will examine its two main assumptions, which are noted in Chapter 2. The first section will analyze the assumption that savings is a prerequisite of investment. The next section will concern the second assumption that banks finance long-term investment. The assumption of this paper is that the growth of manufacturing can be sustained by the expansion of gross fixed capital formation such as machinery, factories and R&D in innovative projects, and these require long-term financing. Thus, the second section will be concerned with long-term credit and the manufacturing sector. The conclusion will be drawn in the last section.

4.1 Analysis of Savings

This section will examine one of the fundamental assumptions of financial liberalization, which is that savings from individuals who sacrifice their present consumption (household savings) finances investment. The first part will break down the national savings that fund investment to analyze what proportion from household savings finances gross capital formation, which 'consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories' (World Bank). The second part will examine the relationship between household savings and interest-bearing liabilities of commercial banks. According to orthodox predictions, financial liberalization would enable financial institutions to mobilize more savings from individuals. The last part will look at the correlation between household savings as percentage of GDP and real interest rates. This part tests the orthodox assumption that high real interest rates encourage individuals to give up their present consumption to save.

Composition of Savings

According to the Thai national account, the national savings that fund gross capital formation are the summation of private, government and foreign savings, plus provision for consumption of fixed capital. Private savings is comprised of household and corporate savings. Household savings is sourced from individuals who give up their present consumption. Corporate savings is profits, after taxes and distributing dividends, of corporations, cooperatives

and state enterprises (Office of National Economic and Social Development Board: NESDB). Government savings is a surplus of the government budget, whereas foreign savings is a deficit of the current account. Provision of consumption for fixed capital is the replacement of worn-out capital. The main concern of this section is to investigate how much the surplus from households contributes to finance gross capital formation. Regarding the financial liberalization hypothesis, the proportion of household savings in the national savings should increase after financial systems are liberalized.

Table 4.1 demonstrates the composition of national savings that fund gross capital formation into five components as noted above. The study period is from 1980 to 2011, breaking down unevenly to four sub-periods in order to reflect structural change. The first period is during 1980-1988 prior to the main financial reforms. The second period starts from 1989—when the financial liberalization scheme was implemented, starting from liberalization of interest rates as noted in Chapter 3—to 1997, the year of East Asian Crisis. The third period is during 1998-1999, when the economy experienced a great downturn. The last period is from 2000 to 2011, when the economy had been recovered but the degree of financial liberalization was higher.

Table 4.1 Composition of National Savings (percentage)

Saving Components	1980-88	1989-97	1998-99	2000-11	1980-2011
Household Savings	41.23	22.09	45.78	19.37	22.83
Corporate Savings	6.91	12.39	11.04	21.09	17.13
Government Savings	9.23	22.78	11.39	14.70	16.57
Consumption of Fixed Capital	28.68	31.36	88.55	60.81	51.34
Foreign Savings	11.77	14.25	-55.61	-11.30	-4.34
Statistical discrepancy	2.17	-2.87	-1.16	-4.67	-3.53
Total	100.00	100.00	100.00	100.00	100.00

Note: The data of 2011 is preliminary

Source: NESDB (*National Income Account*), Calculated by the author

What can be observed from the table contradicts the financial liberalization hypothesis. The surplus of the households is significantly high during 1988-1989. However, the shares of household savings shrunk abruptly in the period of financial reform during 1989-1997, which began with the liberalization of interest rates in 1989. The household saving ratio shrunk greatly to around 20%, half of the previous period, while the surplus of other elements—corporate, government and foreign savings—rose. The increase in foreign savings reflected the structure of the manufacturing sector as import dependent²⁸ (Pongpisanupichit et al. 1989 as cited in Jansen 1995: 198) and mirrored the deterioration of Thai export competitiveness due to the overvaluation of the Baht and the presence of China in the world economy (Krongkaew (1999: 395) and Sussangkarn and Vichyanond (2007:103).

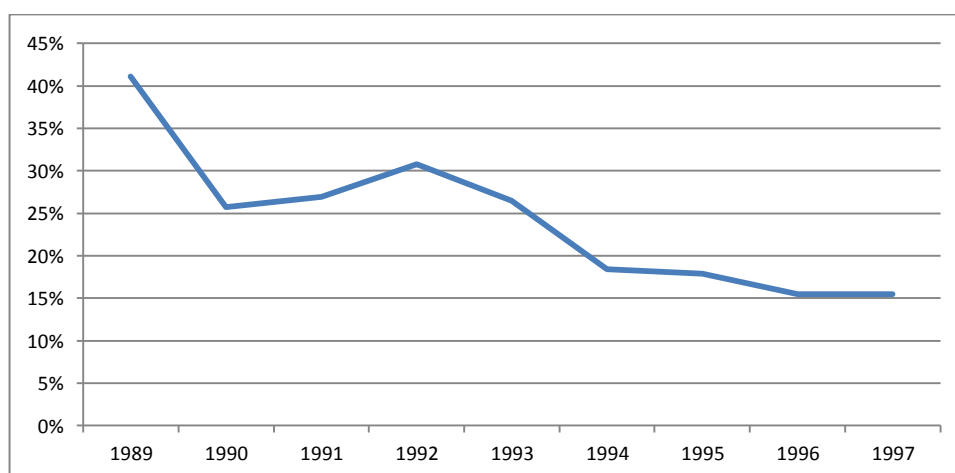
In the period of 1998-1999, the proportion of household savings reached its peak because the country has suffered greatly from an economic slump in

²⁸ 90% of machinery and equipment and 50% of raw materials were imported (Pongpisanupichit et al. 1989 as cited in Jansen 1995: 198).

1997, which negatively affected consumption. There was also a deficit in foreign savings due to the fact that the fixed exchange rate regime was no longer used and the Baht was floated, and consequently the economy regained its export competitiveness. However, when the economy recovered in the next period, the ratio of household savings had fallen again to the level of the liberalization period before the crisis. For the whole period of 1980-2011, although the share of household savings, 22.83%, was higher than the shares of corporate (17.13%), government (16.57%) and foreign savings (-4.34%), the greatest contributing source that funded gross capital formation was the provision of consumption for fixed capital, which was financed by corporations and the government. Thus, this calls into question the argument of orthodox economists that invest financing comes from external sources (individuals).

In addition, the picture is clearer when looking at the yearly trends over the period of 1989-1997, as shown in Figure 4.1. It demonstrates that after liberalizing interest rates in 1989, the proportion of household savings declined abruptly in the next year. Although there was a small recovery in 1990, after all ceilings of deposit interest rates were removed in 1992 and regulations and restrictions on financial institutions and capital flows started to relax since 1990, the share of household savings kept falling until 1997.

Figure 4.1: Household Savings Ratio in National Savings during 1989-1997



Source: NESDB (National Income Account)

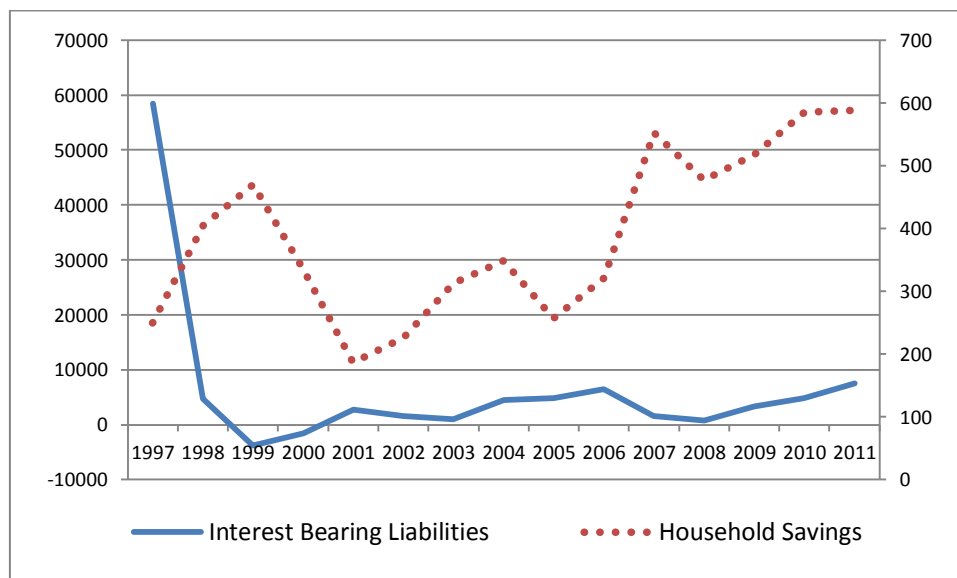
In summary, these findings support the argument and analytical results of Rodrik and Subramanian (2009) noted in Chapter 3 that Thailand is an investment-constraint country; therefore, financial liberalization would spur consumption at the expense of savings (of individuals). Pootrakool et al. (2005: 15) argue that the long-term decline in household saving rates of Thailand comes from changes in consumption patterns; the magnitude of the average marginal propensity to save has fallen. This is due to structural changes to the Thai socio-economy, through which the urban area expanded, encouraging the demand for consumer products, especially durable goods. This is in conjunction with greater accessibility to financial credit, such as the use of credit cards. Finally, a question mark is growing over the justifications of financial reforms of Thai authorities, which were grounded on the premise that i) high real interest rates encourage individuals to give up their present consumption to save and ii) the financial liberalization enhances competition in

the financial system, which in turn, improves efficiency of financial institutions to mobilize more savings. The results do not validate these predictions.

Household Savings and Interest-Bearing Liabilities of Commercial Banks

The argument of orthodox economists and intergovernmental bodies, such as the IMF, World Bank and UN, that is commonly used to justify financial liberalization policies is that supply of capital which mainly comes from individual savings is not sufficient to serve investment demands. This section will examine this argument by looking at the relationship between household savings and interest-bearing liabilities of commercial banks. The rationale is that orthodox economists look upon household savings as a supply of capital. The banks' interest-bearing liabilities provided by the dataset mostly come from money deposits and the rest is the account with financial institutions-interest bearing. If the supply of capital comes from individuals who postpone their present consumption to save in banks as claimed by orthodox economists, household savings should be a main source of interest-bearing liabilities. Due to the availability of the data, the analysis of this section will cover the period from 1997 to 2011. The interest-bearing liabilities variable is originally presented as a stock variable. Hence, to compare against household savings, which is a flow variable, the interest-bearing liabilities variable needs to be transformed to be a flow variable by subtracting the value of each previous year.

Figure 4.2: Household Savings and Interest-Bearing Liabilities of Commercial Banks (Baht Billion)



Note: Household savings in 2011 is preliminary. Interest-bearing liabilities of commercial banks are a summation of deposits and account with financial institutions-interest bearing.

Source: Bank of Thailand and NESDB (National Income Account), Calculated by the author

Figure 4.2 illustrates the relationship between interest-bearing liabilities and household savings (the second axis). The graphs demonstrates that there are two stylized facts that are against the orthodox view that the supply of capital comes from individuals' savings and the way to promote this savings is raising real interest rates. First, a systematically positive correlation between household savings and interest-bearing liabilities of commercial banks it is not evident.

Rather, these two trends appear to move in the opposite directions. This is against orthodox claims because the main component of interest-bearing liabilities is money deposits, which account for approximately 90% of this dataset. With respect to the non-systematic relationship between household savings and money deposits in commercial banks, it is questionable that raising real interest rates would promote this supply of investment. Secondly, the magnitudes of interest-bearing liabilities are far greater than of household savings. Thus, it can be implied that the main source of interest-bearing liabilities, which is mainly money deposits, is not from individuals or households who give up their present consumption, but from other sources such as profits of firms. In short, this finding casts doubt on the orthodox claim that individuals finance investment by sacrificing their current consumption, and the associated policy implication of raising interest rates.

Household Savings and Real Interest Rates

This part will examine whether or not saving behaviors of households have a positive correlation with real interest rates, as is assumed to be the case by orthodox economists. According to orthodox theory, household savings corresponds positively to incomes and real interest rates. An econometric methodology will be used to test the orthodox claim that high real interest rates encourage individuals to sacrifice their current consumption. Then, to capture the effect of real interest rates on saving behaviors of individuals, the income variable will be treated as a control variable. Thus the dependent variable is household savings as percentage of GDP. The regressor is real interest rates, which are obtained from the average of minimum and maximum levels of 1-year time deposit interest rates less inflation rates. And since the determinant of household savings is not the main focus of the paper and to let the data speak for itself, the model specification will be limited to one regressor; the model specification is:

$$\text{HHS}_t = \alpha_0 + \alpha_1 \text{ATDR}_t + u_t \quad (1),$$

where HHS is household saving rates, ATDR is real 1-year time deposit interest rates and u is an error term. The time series analysis will cover the period from 1980 to 2011. It is worthy to note that non-stationarity should be examined in order to avoid spurious correlation and misleading outcomes (Gujarati 2003: 806) as well as checking autocorrelation problem for *ex post* Ordinary Least Square (OLS) regression.

For the *ex ante* analysis, Augmented Dicky Fuller test (ADF) is employed in order to check stationarity of each variable. The ADF test shows that household saving rates (HHS) contains unit root, but it cannot be detected at first difference level which mean they are non-stationary, I(1), whereas real 1-year time deposit interest rates (ATDR) is stationary, I(0) (see in Appendix D). It can be concluded, econometrically, that household saving rates has no long-run equilibrium with real deposit interest rates, according to this finding.

Since the household saving rates is I(1), the adjustment before OLS process is needed. The modification of equation (1) is:

$$\Delta \text{HHS} = \beta_0 + \beta_1 \text{ATDR}_t + v_t \quad (2),$$

ΔHHS is change of saving rates, $\text{HHS}_t - \text{HHS}_{t-1}$ and v_t is a disturbance term. Now, all variables are stationary. The result of estimation is illustrated below in which Standard deviation values of each variable are shown in parenthesis:

$$\begin{aligned} \Delta\text{HHS} &= -0.0006 - 0.0005\text{ATDR}_t \\ &\quad (0.0041) \quad (0.0009) \quad R^2 = 0.1854 \end{aligned}$$

The result of estimation negates the argument of orthodox that household savings response positively with real interest rates. The magnitude of coefficient of real deposit interest rates is significantly small with negative sign and moreover, it is statistically insignificant as p-value is 0.595 (t-statistic is -0.54). In addition to this, the autocorrelation problem is not detected after exploiting the Durbin-Watson test technique (Appendix D). The result is also consistent with a precedent study (Jongvanich 2010, Chapter 2), which a real interest rates variable is statistically insignificant. In short, the result of econometric analysis cast a doubt on the orthodox assumption that real interest rates have a positive relationship with households' saving behaviors. Then, the following question is that how liberalizing interest rates policy would be justifiable as far as investment financing is concerned.

4.2 Analysis of Bank Financing

The analytical results of the previous section reinforce the criticisms of the orthodox view that investment financing is sourced from individuals' savings. Now, this section will examine the second assumption of the orthodox external financing view that banks are the main contributor of long-term investment. As noted in chapter 2, this assumption also underpins the heterodox economists' argument of external financing. The first part will examine the contribution of long-term credits from commercial banks to gross capital formation. The second part will explore the manufacturing sector, investigating the relationship between credits from commercial banks and the investment in fixed capital.

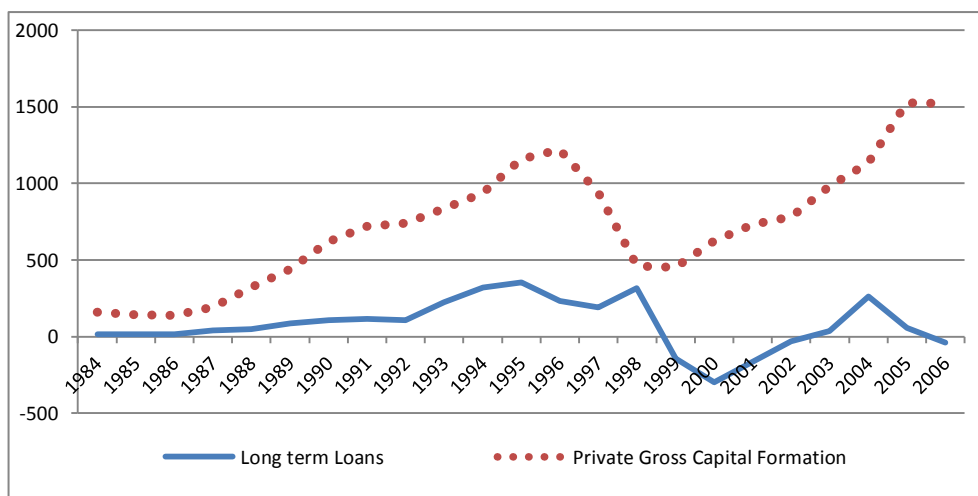
Long-Term Loans and Gross Capital Formation

Since there is no break-down data into short- and long-term loans, this subsection will use the flow-of-funds data to analyze the contribution of long-term credits to gross capital formation. However, a weakness of this dataset is that loans of over one year qualify as long-term loans, whereas a desirable minimum maturity would be at least three years. Loans with less than three-year maturity might be used as working capital, which may not contribute to long-term investment. Hence, including this kind of loan can cause an overestimation of the contribution of long-term credits in this analysis.

Figure 4.3 illustrates the change in the amount of long-term credit form commercial banks to business and change in the amount of private gross capital formation (GCF). After liberalizing the capital account and allowing financial institutions to operate new businesses such as investment banking in 1992, although long-term credits had been increased dramatically, the gap between GCF and long-term credits widened even further. Moreover, the increasing trend of long-term credits needs to be looked at carefully when

recalling Figure 3.2 in Chapter 3. This is because, firstly, the proportion of credits to real estate activities and to personal consumption for land and housing surged in this period, which reflected the growth of the bubble of this sector. Secondly, although the proportion of manufacturing credits also soared when the financial liberalization was implemented, it should be noted that ‘credit extension was speculatively oriented, so loan grew too much in particular periods of time and/or clustered in particular sectors engendering risk bubbles’ (Vichyanond 2000: 12) such as automotive, private hospital, petrochemical and steel sectors (ibid: 9). Hence, the orthodox belief that the financial liberalization scheme encourages banks to finance productive investment is questionable.

Figure 4.3: Long-Term Loans and Private Gross Capital Formation (Baht Billion)



Source: NESDB (Flow-of-Funds Account), Calculated by the author

After the crisis in 1997, at first, long-term credits were expanded in 1998 because the Bank of Thailand injected credits into the system for the purpose of rescuing the economy (Vajragupta and Vichyanond 1998: 27). However, the financial reform after the crisis caused a reduction in long-term credits. On 1 July 1998, the criteria for debts classified as non-performing loans (NPLs) was changed to be a shorter timeframe; ‘it was changed to cover past due loans with three or more months, in arrears, instead of six (or 12) or more months’ (Vichyanond 2000: 16). Since more loans now qualified as NPLs, the amount of NPLs in the economy soared. Thus, given this condition, it was hardly possible that banks could lend long-term anymore, especially in the time of the great downturn following the crisis. However, the gross capital formation still increased. This implies that the main sources of investment financing of the non-financial sector were not from long-term loans from commercial banks.

In short, during 1984-2006, it can be observed that an increase in long-term credit to business could not keep up with the expanded pace of GCF. Furthermore, with the exception of the period of 1990-1997 in which there was a bubble, an increase in long-term credits from commercial banks that could fund an expansion of GCF was not more than 20% (2004), even though the long-term loan variable includes the loans with maturity of less than three years. Thus, it seems fair to conclude that the sources of finance for productive, and even speculative, activities might come from other sources, such as retained earnings. Again, the observations from Figure 4.3 challenge

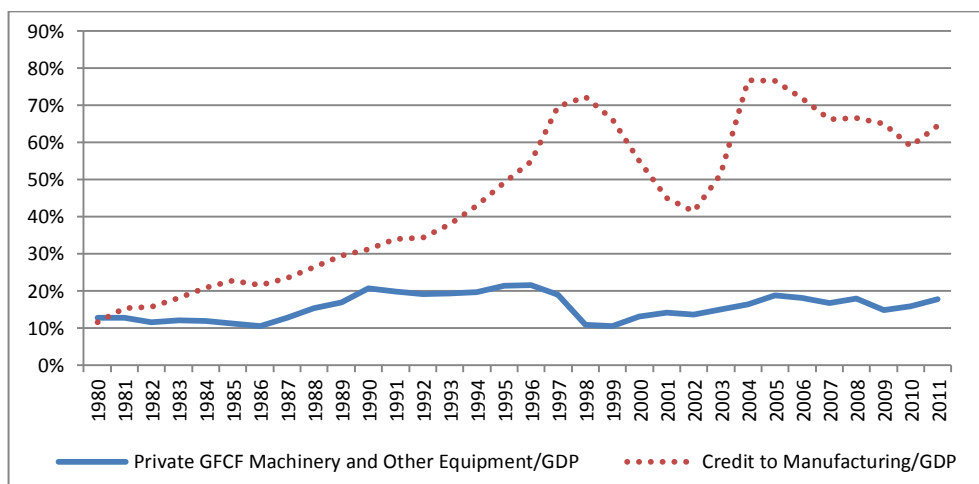
the claim of both orthodox and heterodox economists, noted in Chapter 2, that commercial banks are a main contributor of investment financing.

Manufacturing Credits and Gross Fixed Capital Formation

This section will focus on the manufacturing sector. The proxy for the manufacturing fixed investment is the private gross fixed capital formation in machinery and other equipment (GFCF). Here, a weakness of the dataset is that the credit to manufacturing sector is not distinguished into short- and long-term. Therefore, the analysis will be drawn from the total amount of manufacturing credit. The two variables will be represented in the share of GDP in order to remove the influences of economic situations and inflation.

The comparison between GFCF and manufacturing credits in a share of GDP is shown in Figure 4.4. Some observations can be made from the figure. Firstly, there is no evidence of a relationship between the shares of manufacturing credits and of GFCF. The long-run trends show that the ratio of credit to manufacturing to GDP has been growing over time; yet the share of GFCF has been stagnant, hovering around 15-20% for 30 years. In spite of a big fluctuation in the share of credits to the manufacturing sector after the crisis, the proportion of GFCF in GDP appears to be insensitive to the share of manufacturing credits.

Figure 4.4: Private Gross Fixed Capital Formation in Machinery and Other Equipment and Credits to Manufacturing Sector as Percentage of GDP



Note: GFCF and GDP in 2011 are preliminary. Amount of manufacturing credits is comprised of loans, overdrafts, bill and others. It is also composed of Thai commercial banks (exclude branch offices abroad), foreign banks branches and stand-alone IBFs (Out-in). The actual amount of manufacturing credit in 2003 is incomplete because the 3rd quarter is missing. Therefore, the whole annual value is estimated by multiplying 4/3 to the summation of the first half year and the last quarter.

Source: Bank of Thailand and NESDB (National Income Account), Calculated by the author

Secondly, the amount of manufacturing credits is much more than that of private gross fixed capital formation. Based on these stylized facts, it can be implied that the manufacturing credits provided are short-term credits, as asserted by Vajragupta and Vichyanond (1998) in Chapter 3. This may imply an explanation as to why the share of private investment in GDP has been stagnant for a long time.

To conclude, the results of the finding support the conclusion of the previous section that the main source of investment financing does not come from credits from commercial banks, as claimed by orthodox and some heterodox economists. This finding is also consistent with the finding of Decharuk et al. (2009) who studied the determinants of investment in Thailand during 1996-2008²⁹. The OLS result shows that the estimated coefficient of lagged growth of private credit variable is statistically insignificant. They concluded that a business sector rarely relies more on bank financing (ibid: 22).

4.3 Concluding Remarks

This chapter has aimed to examine the orthodox financial liberalization hypothesis. It tested its two fundamental assumptions that i) savings is a prerequisite of investment and ii) banks finance long-term investment. The results of the empirical findings do not follow the orthodox claims.

Firstly, it is not evident that financial liberalization schemes, especially the interest rate liberalization, help to mobilize more savings from households. Rather, household savings fall dramatically after the implementation of the financial liberalization. The effectiveness of commercial banks in mobilizing savings appears to be an invalid claim (Table 4.1 and Figure 4.1). Furthermore, savings from individuals have no relationship with interest-bearing liabilities of commercial banks in which money deposits are the main components (Figure 4.2). Hence, the external financing view of orthodox economists that investment financing comes from individuals who sacrifice their current consumption appears to be unsubstantiated. Additionally, the econometric result suggests that there is no robust evidence to support the orthodox assumption that household savings has positive correlation with real interest rates. This finding is consistent with a previous study by Jongvanich (2010) that was noted in Chapter 2. Hence, the effectiveness of the policy recommendation of raising real interest rates is highly questionable.

Furthermore, this chapter examines the types of credits that commercial banks lend to businesses. Figure 4.3 reports that the change in the amount of long-term loans cannot keep up with the expanding pace of the change in the amount of private gross capital formation. From this it can be concluded that the main source of investment funding does not come from bank financing. This result is consistent with the evidence from other countries as shown in Chapter 2. In addition, the expansion of private gross fixed capital formation in machinery and equipment is found to be irresponsive to an increase in manufacturing credit (Figure 4.4). This observation supports a doubt that the credits are short-term.

In conclusion, the analytical results question the claim of economists, both orthodox and heterodox, that investment is financed from financial institutions. The next chapter will provide an analysis from another angle, looking at whether firms whether mainly rely on banks for their investment or an internal source.

²⁹ The data is quarterly basis, from the 1st quarter of 1996 to the 2nd quarter of 2008.

Chapter 5

An Alternative Approach

The analytical results in the previous chapter strengthen the critiques of external financing. This chapter will look at another side of the coin, firms' behavior. As Chapter 2 argued that a dominant source of investment financing of corporations is internal financing from profits, this chapter will examine the relationship between profits and investment. The first section will investigate the relationship between profits and investment in the whole Thai economy. The next section will focus on the manufacturing sector, in which the reliance on financial institutions will be investigated. The last section will draw a conclusion.

5.1 Profits and Gross Capital Formation

This section will look at the internal financing view, examining the role of profits as a source of investment financing. Table 5.1 illustrates change in gross profits and long-term loans as percentage of change in gross capital formation. It can be clearly seen that gross profits are the dominant source of gross capital formation (GCF). On average during 1967-2009, profits accounted for more than 70% of GCF and their share rose from one period to another, reaching almost 100% in the period of 2000-2009. This finding goes against the notion of the pioneer of the financial liberalization hypothesis, Shaw (1973), who argues that investment is no longer funded by internal financing when the financial system is liberalized. This is because the findings of this paper show that the Thai business sector relied on its own profits even more after the financial system was liberalized in 1990s. The result also lends support to the argument of Sweezy (1946 and 1972) noted in Chapter 2 that profits are the heart of capital accumulation.

Table 5.1: Gross Profits and Long-term loans as Percentage of Gross Capital Formation

	1967-69	1970-79	1980-89	1990-99	2000-09	1967-2009
Gross Profits	45.18	52.48	59.73	77.30	99.33	70.32
Long-term Loans	0.49	2.05	10.79	20.56	-9.07	5.69

Note: Long-term loans data is acquired from liabilities side and its sources are not only from financial institutions, but also from other sources.

Source: NESDB (Flow-of-Funds Account), Calculated by the author

In comparison with profits, the proportion of long-term loans in GCF was very small, around 5% on average. Moreover, the share recently declined in the period of 2000-2009. There is reason to suspect that during 1990-99 when the share reached its peak, the use of long-term loans was for speculative activities, as noted in Chapter 3. To sum up, this finding provides evidence that profits are the main source of investment, which is consistent with the evidence of the countries noted in Chapter 2. This is especially the case with Japan because since it became more developed and its financial

system was more liberalized, Japanese firms have relied more on their own profits.

5.2 Snapshots of Manufacturing Firms

This section will focus on manufacturing firms. The first part will attempt to answer the question of how much firms depend on bank financing. The second part will explore the relationship between profits and fixed capital investment.

Firms and Financial Institutions

The liabilities side of firms' balance sheets can be used as a proxy of source of funds. A proxy of gross fixed capital formation is 'Property, Plant and Equipment' in non-current assets. Table 5.1 provides the information of 99 manufacturing firms registered in the stock market. It reports the type of loans that are borrowed from financial institutions as percentage of total liabilities from 2008 to 2012. According to the assumption of this paper that fixed investment requires long-term finance, it also provides long-term borrowing as percentage of property, plant and equipment in order to visualize the greatest contribution possible from financial institutions to fixed investment.

The data gathered from this pilot study suggests that firms' dependency on financial institutions is less than 25% of their total sources of finance (short- and long-term borrowing). What can be observed further from the table supports the analysis from Chapter 4 that the main type of credit to manufacturing firms is short-term. The share of short-term borrowing doubles the amount of long-term. And when looking at the greatest amount possible to finance fixed investment, it can finance only 13% of fixed capital.

Table 5.2: Short- and Long-Term Borrowing from Financial Institutions as Percentage of Total Liabilities and Long-Term Borrowing from Financial Institutions as Percentage of Fixed Investment

	Short-Term Borrowing	Long-Term Borrowing	Long-Term Borrowing/ Fixed Investment
All	16.47	7.30	13.21
<i>By size of firms</i>			
1 st Smallest	27.91	5.25	4.38
2 nd Smallest	38.40	3.27	4.62
Medium Small	50.44	4.58	10.38
Medium Large	30.85	13.89	21.60
2 nd Largest	20.13	10.75	8.82
1 st Largest	8.34	6.32	14.85

Note: Long-term borrowing is composed from current and non-current liabilities. The 1st smallest group is firms whose total assets less than 5 billion Baht, 20 firms; the 2nd smallest group is from 5 to 11 billion Baht, 20 firms; the medium small group is from 11 to less than 20 billion Baht, 19 firms; the medium large group is from 20 to less than 31 billion Baht, 16 firms, the 2nd largest group is from 31 billion to less than 100 billion Baht, 13 firms; and the 1st largest group is more than 100 billion Baht, 11 firms.

Source: SETSMART, Calculated by the author

According to the size of firms, which is classified by the amount of their assets, some further observations can be drawn. Overall, the 1st and 2nd largest firms are the least dependent upon borrowing from financial institutions, compared to the small and medium groups. This observation is similar to the work of Mayer (1990), which shows the reliance on financial institutions of different sizes of firms in the UK, as shown in Chapter 2. However, compared to medium groups (small and large), the 1st and 2nd smallest groups depend less on borrowing from financial institutions and most of the loans are short-term ones. Some inference can be drawn further that banks have tended to be more cautious after the East Asian Crisis, according to Jansen (2011), as explained in Chapter 3. They might be more reluctant to lend to small than to firms big firms, due to the higher risk of default. This stylized fact urges the question of the role of financial institutions in promoting investment of small firms.

Furthermore, it can be observed that the 1st largest group depend the least on financial institutions. This result refutes the claim of orthodox economists such as Lin et al (2009) and heterodox ones such as Hilferding (1910), noted in Chapter 2, that big firms rely more on bank financing. For the other groups, clearly, the dependency rates are based on the size of firms; the larger the size, the higher it dependency on long-term borrowing from financial institutions. However, it cannot be claimed that this long-term borrowing finances fixed capital formation because the weakness of liabilities as a proxy is that it cannot indicate the purpose of use. Yet, column 3 of Table 5.2 can be seen as the threshold for the amount of fixed investment financing from financial institutions, which is quite insignificant.

Although the trend of long-term borrowing from financial institutions is increasing from year to year (from 2.3% in 2008 to 8.03% as a proportion of total liabilities in 2012), this increasing trend appears to be unusual. This is especially the case when it is compared to column 5 (period of 2000-2009) in Table 5.1 in the previous section. According to Table 5.1, the change in the proportion of long-term loans has become negative, -9.07%. The reasons for this could be that during 2008-2012, the Thai economy endured great adversities such as the impact of the Subprime Mortgage Crisis, a long political upheaval and a big flood that destroyed many industrial estate areas in 2011. Thus, under great uncertainties at domestic and global levels, firms may need to rely more on finance from financial institutions. Still, based on all the analysis of this paper thus far, this purpose of finance is more likely for smoothing cash flow balances rather than financing long-term investment.

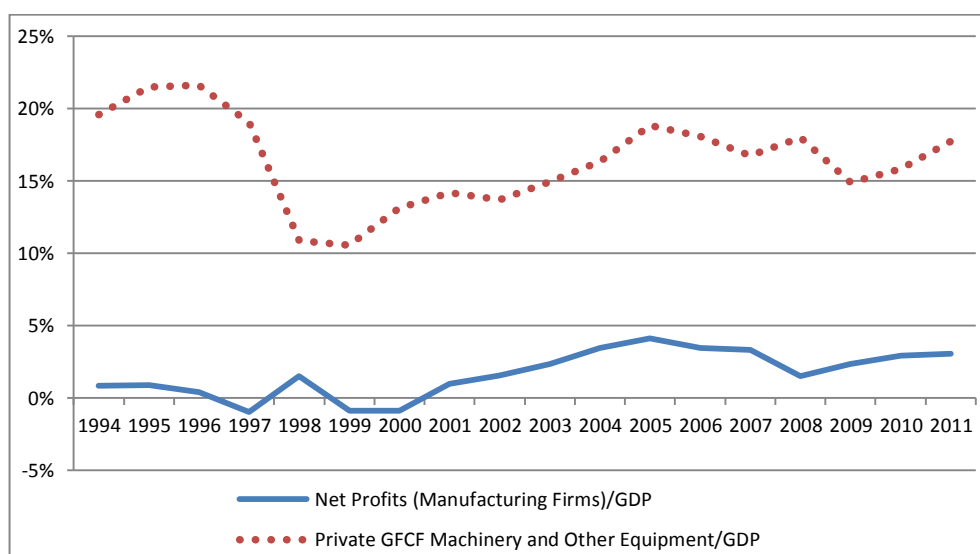
On the basis of the evidence currently available, it seems fair to reject the claim of economists as argued in Chapter 2 (i.e., proponents and dissenters of financial liberalization, and Hilferding), that financial intermediaries are the main contributor of private investment. More crucially, this finding questions the orthodox principal economic model which shows that a firm is a borrower unit.

Profits and Gross Fixed Capital Formation

This section will investigate the relationship between profits and fixed investment. The data is collected from 304 firms registered in the stock market. Figure 5.1 demonstrates the relationship between the net profits of these firms

and private gross fixed capital formation of machinery and other equipment of the whole economy as percentage of GDP (GFCF) during 1994-2011. The shares of GFCF shrunk abruptly after the crisis in 1997, which mirrors the bubble in the real sectors prior to the crisis, as noted in Chapter 3. However, it can be observed clearly that there is a link between GFCF and the net profits of the firms of the sample. It can be observed from the figure below that the trends of net profits and of GFCF have more or less moved together in the same direction. In fact, the evidence corroborates the notion that profits are the main source of investment financing.

Figure 5.1: Net Profits of Manufacturing Firms and Gross Fixed Capital Formation in Machinery and Other Equipment as Percentage of GDP

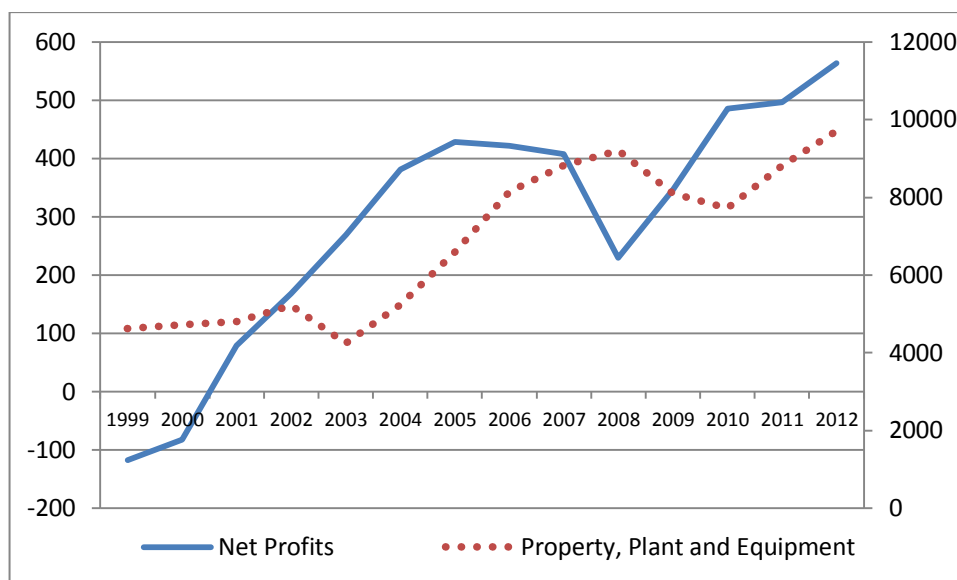


Note: GFCF of machinery and other equipment, and GDP in 2011 are preliminary. Net profits are acquired from 304 manufacturing firms who are registered in the stock market of Thailand and are calculated from gross profits minus income tax expenses and finance costs. Net Profits data set is not clean. Some firms do not represent the information for the whole time series. However, if the data is cleaned, the degree of freedom will be lost greatly.

Source: *Stock Exchange of Thailand and NESDB (national Account), Calculated by the author*

Furthermore, Figure 5.2 depicts net profits of these 304 firms and their fixed investment which is proxied by 'Property, Plant and Equipment' from non-current assets in their balance sheets. The graph demonstrates the relationship between firms' net profits and fixed investment during 1999-2012. After the crisis, net profits were recovered since 1999. Similarly, investment in property, plant and equipment of firms also rose, but more slowly. However, the investment in fixed capital fell during 2002-2003 due to the global uncertainties that delayed the firms' decision to invest: the global slowdown from the Dot Com Crisis; the invasion of Iraq by the U.S.; and the epidemic of Severe Acute Respiratory Syndrome (SARS) (Bank of Thailand 2001, 2002 and 2003). The downturns in net profits during 2007 and 2008 and in fixed investment during 2008-2010 were results of the global economic slump originating from the U.S. during 2007-2009 and political unrest over the same period. However, regardless of global and domestic uncertainties, it can be observed clearly from the figure that net profits and investment in fixed capital have a positive long-term correlation.

Figure 5.2: Net Profits of Manufacturing Firms and Property, Plant and Equipment (Baht Billion)



Note: Net profits are acquired from 304 manufacturing firms who are registered in the stock market of Thailand and are calculated from gross profits minus income tax expenses and finance costs. Net Profits data set is not clean. Some firms do not represent the information for the whole time series. However, if the data is cleaned, the degree of freedom will be lost greatly.

Source: *Stock Exchange of Thailand and NESDB (National Income Account), Calculated by the author*

5.3 Concluding Remarks

This chapter has drawn an analysis on the perspective of firms, exploring what their main source of investment financing is. The results reinforce the view that most investment financing comes from internal sources (Table 5.1). In addition, the micro evidence from the manufacturing sector suggests that profits and fixed investment have a positive relationship (Figures 5.1 and 5.2). Furthermore, the empirical findings support the concluding argument of the previous chapter that commercial banks mainly lend short-term credits (Table 5.2). Moreover, regarding the comment of the governor of the Bank of Thailand noted in Chapter 3 that the financial liberalization regime offers an investment opportunity to small firms, the analytical results raise a doubt on the role of commercial banks in promoting investment for small business (Table 5.2).

To sum up, it is not surprising that in general real investment rates do not seem not correspond to the amount of total credit because i) credits mainly are short-term and ii) firms' investment financing is rarely dependent upon external financing, but instead, upon their own internal sources, profits.

Chapter 6

Conclusion

Modern orthodox economic theory emphasizes the importance of financial systems, especially commercial banks, as vehicle to channel funds for investment financing. This notion underlies financial liberalization policies as well as quantitative easing policies, through which the advanced countries such as the U.S., UK and Japan have been printing money in order to rescue their economies from the global economic slump since 2008. However, the signs of economic recovery seem yet to have come. This has raised the question of whether commercial banks really do finance private investment.

This research has attempted to answer the question of where investment sources of financing come from, using Thailand as a case study. It has tested the argument of orthodox and some heterodox economists that investment financing comes from commercial banks. This paper has focused mainly on the argument of orthodox economists who support the financial liberalization hypothesis, since it has been shown to be theoretically flawed. The empirical studies from Chapter 2 also proved that the main source of firms' investment financing was their own profits.

The paper hypothesized that the main source of investment financing in Thailand did not come from commercial banks' loans, contrary to the financial liberalization hypothesis. Chapter 3 noted that Thailand gradually reformed its financial system in the end of 1980s, starting with liberalizing interest rates and then the capital account, followed by deregulating the financial system. After reforming the financial system, there were bubbles in non-tradable sector such as real estate properties and stock markets as well as in tradable sector such as the manufacturing sector. These bubbles led to the crisis in 1997. The degree of liberalization became even greater after the country encountered a big economic slump during the East Asian Crisis in 1997. After the crisis, the structural ownership of the banking system encountered a big change, in which foreigners were able to acquire more shares. Additionally, in total credits from commercial banks, the shares of credits to tradable sectors such as manufacturing sectors sharply decreased, whereas the shares to the financial sector and personal consumption markedly rose, after the crisis. Thus, the analytical part of this paper has covered the period of 1980-2012, which included the periods before and after the implementation of financial liberalization, and after the East Asian Crisis.

The analytical results in Chapters 4 and 5 support the hypotheses of this paper which challenge orthodox fundamental theories and policy prescriptions on the ground. Firstly, the financial liberalization scheme did not help encourage individuals to save more, as predicted by orthodox economists. Rather, in the period of liberalization, household savings were declining. Secondly, household savings has borne no relationship with interest-bearing liabilities of commercial banks, which mainly consisted of money deposits. Thirdly, there was no evidence of a statistically significant correlation between household savings as percentage of GDP and real interest rates. It can be concluded that investment financing was mainly not sourced from individuals

who gave up their present consumption. By way of a corollary, fixed capital investment did not primarily come from household savings. Thus, as far as investment promotion is concerned, these findings do question the effectiveness of financial liberalization schemes (e.g. liberalizing interest rates and capital controls, and deregulating financial systems).

The findings also suggest that commercial banks mainly provide short-term loans or working capital, not long-term credits. More fundamentally, for the purpose of fixed investment financing, Thai firms mainly rely on their profits, not on bank loans, as claimed by mainstream and some heterodox economists. The analytical results are consistent with the evidence of countries whose financial systems were both liberalized and repressed that profits or retained earnings contribute the most for investment financing.

Lastly, as this research paper has focused only on commercial banks, it leaves several gaps for future research. One of many possibilities is the contribution of the Thai stock market to investment.

Policy Implications

The results of this paper suggested that in terms of investment financing, commercial banks do not perform the role that was scripted in the mainstream economic theory. The findings also made evident that the financial liberalization schemes did not yield the promising outcomes as predicted by supporters (i.e., increasing household savings and banks expanding long-term credit to finance investment). Rather, looking closer at the development process of East Asian neighbors such as Japan, Korea, Singapore and China, their way of successful industrialization was a departure from market virtue practices. Thai monetary authorities may rethink whether the financial liberalization scheme is still the right path to follow. In order to promote investment, especially innovative projects, long-term loans with fixed interest rates are strongly required. As this research suggested that commercial banks failed to perform this task, the Thai government may initiate state-owned development banks to fulfill this role as Japan and China did. In addition, as the evidence from Thailand and other countries demonstrates that capital accumulation was mainly funded by internal sources, the government may aim to promote firms' internal sources. One of policy recommendations is to encourage firms to establish employee provident funds because internal funding would be expanded from individuals (employees) who directly save the residuals of their salaries/wages in their company as in case of German firms (Corbett and Jenkinson 1997: 78).

Closing Remarks

This research paper delivered an alternative view for analyzing an economic system. It challenges the fundamental assumption of modern orthodox economic theory that an individual saves their money in a bank, and then a bank lends it to a firm for the purpose of investment. This notion has become a justification for the financial liberalization policies that are commonly recommended to developing countries by orthodox economists and the intergovernmental bodies such as the IMF, UN and World Bank.

This paper, however, argues that there are no theoretical grounds to support this assumption. The analytical results of this paper and evidence from previous studies of internal financing suggest that whether a financial system is liberalized or repressed, the main source of investment financing does not come from commercial bank loans but from firms' own profits. In closing, the findings of this study support the following quotes of Mayer (1989), which provide an alternative paradigm for investment financing:

Banks finance firms, and firms finance projects. The main contribution of banks to economic development is the promotion of corporations, not the financing of projects' (ibid: cover page)... 'Economists think in terms of projects; bankers rarely do. For the most part, banks finance companies not projects' (ibid: 6).

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Appendix A: Supplementary Data of Chapter 2

**Table A1: Net (Consolidated) Sources of Finance as Percentage of Fixed Investment
(continued from Table 2.4)**

	1970-74	1975-79	1980-84	1985-89	1990-94	1970-94
Germany						
Internal	68.6	82.8	79.7	89.3	71.8	78.9
Bank Finance	15.7	8.4	11.2	7.9	16.9	11.9
Bonds	1.9	-2.8	-2.1	0.6	-2.8	-1.0
New Equity	0.7	0.5	-0.5	2.3	-3.1	0.1
Trade Credit	-1.4	-1.5	-2.8	-2.1	2.1	-1.2
Capital Transfers	6.3	9.5	9.7	8.2	9.6	8.7
Other	8.4	3.2	4.8	-6.3	-0.9	1.4
Statistical Adjustment	0.0	0.0	0.0	0.0	6.3	1.2
Japan						
Internal	59.1	70.8	74.6	70.5	71.2	69.9
Bank Finance	42.7	33.9	31.7	28.0	19.5	26.7
Bonds	2.7	2.5	0.6	9.1	2.1	4.0
New Equity	2.5	3.3	3.6	4.4	3.1	3.5
Trade Credit	-9.9	-12.2	-8.4	-5.7	0.9	-5.0
Other	2.9	1.7	-2.1	-1.3	3.3	1.0
Statistical Adjustment	0.0	0.0	0.0	0.0	0.0	0.0
United Kingdom						
Internal	98.1	102.3	115.4	81.2	81.2	93.3
Bank Finance	26.2	6.8	12.4	29.8	0.2	14.6
Bonds	3.3	-1.3	2.0	8.8	6.3	4.2
New Equity	-7.3	-3.3	-7.6	-20.4	12.4	-4.6
Trade Credit	-0.2	-2.6	-3.1	-0.6	1.0	-0.9
Capital Transfers	6.2	2.1	1.6	0.4	-0.4	1.7
Other	2.3	-3.2	-12.2	-0.9	8.7	0.0
Statistical Adjustment	-28.5	-0.9	-8.5	1.7	-9.4	-8.4
United States						
Internal	74.4	91.5	89.6	103.7	109.8	96.1
Bank Finance	26.6	14.1	12.9	15.0	-4.5	11.1
Bonds	15.7	14.9	10.9	24.8	10.4	15.4
New Equity	7.3	0.7	-4.8	-29.6	-4.2	-7.6
Trade Credit	-2.8	-5.4	-1.7	-4.7	1.4	-2.4
Other	-10.8	-8.7	-0.6	1.8	-6.1	-4.4
Statistical Adjustment	-10.4	-6.9	-6.4	-11.1	-6.8	-8.3

Note: The data do not show Capital Transfer for Japan and the United States

Source: Corbett and Jenkinson (1997: 74, 77, 81-82 and 84)

Appendix B: A Brief History of Thai Commercial Banks

Thai commercial banks are a part of Chinese capitalist conglomerates that dominate many sectors of the Thai economy such as agriculture, manufacturing and consumer products (Phongpaichit and Baker 1995: 123). These Chinese capitalists thus founded their own banks in Thailand to sustain the growth of their businesses. Out of the 20 commercial banks in Thailand at this time, 14 were founded by Chinese capitalists (Chalumilind and Kali *Forthcoming*). Two of the four largest³⁰ commercial banks nowadays emerged from this Chinese capital, namely, Bangkok Bank³¹ in 1944 and Kasikorn Bank³² in 1945. These banks helped finance the Chinese families' main businesses as well as their business partners (ibid: 164). The Thai banking system is different from other East Asian countries in which states regulated banks. For example, Korean and Taiwanese commercial banks were nationalized, while the Singaporean government controlled the private commercial banks (Phongpaichit and Bakers 1996: 59). It is a similar case with China, where the state regulates its financial system, as well with Japan, where the state development bank finances business investment, as noted in Chapter 2. Historically, the Thai government did not control the banking system as other countries did because Thai technocrats subscribed to the ideology of market-efficiency, thus, 'In, 1962, the government formally promised to not nationalize Thai banks' (ibid).

However, after the East Asian Crisis in 1997, Thailand had to ask for help from the IMF in August 1997 (Hewison 1999: 28). The IMF's structural adjustment programs have been implemented in the country since then. One of the conditions for restoring market confidence was to promote good governance in the financial system (Camdessus 1998), a part of which was to further relax restriction of foreign ownership in financial institutions. As a result of the financial reform, 13 domestic banks became foreign owned in 2001 (Chantapong 2005: 65). Shares of three main private commercial banks, namely, Siam Commercial Bank, Kasikorn Bank and Bangkok Bank, were acquired by foreigners up to 49%, from just 25% prior to the crisis. Shares of Siam Commercial Bank, which used to be dominated by the royal family and the Crown Property Bureau, were taken by Japanese investors. Similarly, the shares of leading families such as Sophonpanich and Lamsam in Bangkok

³⁰ The size of commercial banks is classified following the criteria of the Bank of Thailand; the large banks possess the total assets more than 10% of all commercial banks total assets. The big four are Bangkok Bank, Kasikorn bank (the former name is Thai Farmer Bank), Siam Commercial Bank and Krung Thai Bank. Only Krung Thai bank is a public bank.

³¹ Bangkok Bank was emerged from nine Teochiu families whose business engaged with 'import, construction materials, gold-dealing, liquor distribution, ice-making, match manufacture, and cinemas' (Phongpaichit and Baker 1995: 123)

³² Kasikorn Bank is founded by the Lamsam family who started from rice trading then diversified to other business line such as 'warehousing and agri-processing' as well as joint venturing with MNEs such as 'Dole, Firestone, and the Australian Dairy Industry' (Phongpaichit and Bakers 1995: 133).

Bank and Kasikorn Bank, respectively, were sold to foreigners (Hewison 2002: 241-242). The further details can be seen in Table B1.

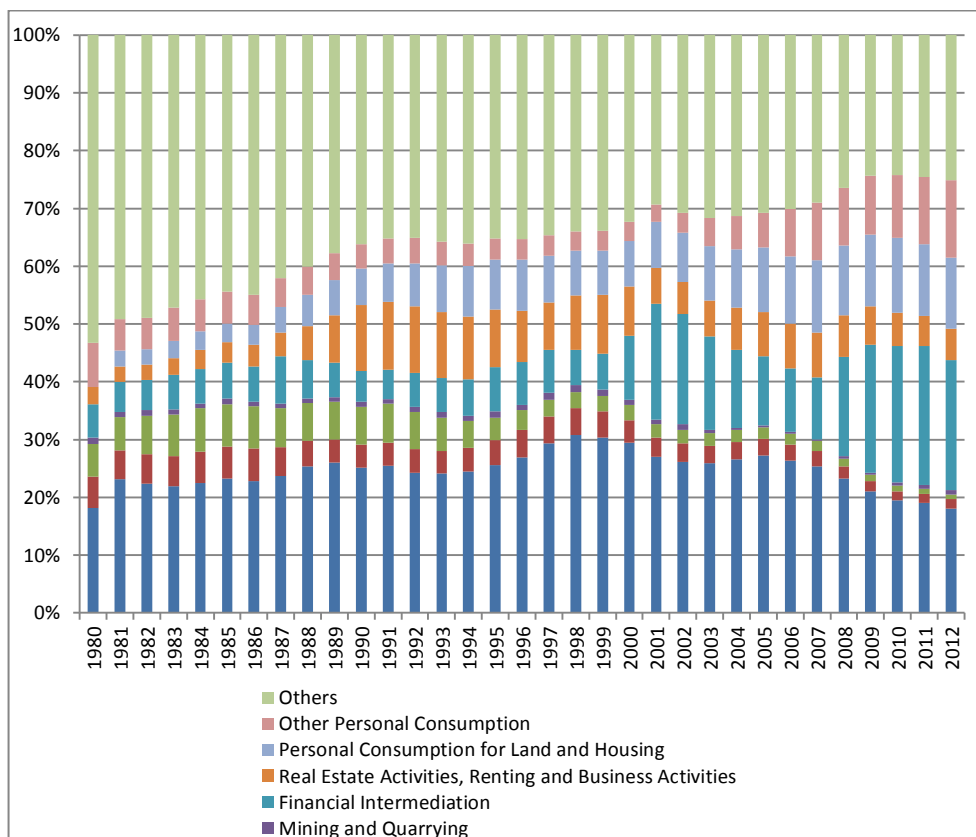
Table B1: Structure of Ownership of Thai Commercial Banks

Banks	Foreign Ownership	
	at March 1997	at the end of 1999
Bangkok Bank	25%	Raised capital. 48.78% foreign stake. Major shares were held by Singapore Investment Corporation.
Kasikorn Bank	25%	Raised capital. 48.98% foreign stake. 6-7% stake held by Singapore Investment Corporation.
Siam Commercial Bank	25%	Raised capital—49% foreign, mainly by Japanese investors.
Krung Thai Bank	Apprx. 5%	State bank. Mired in non-performing loans and corruption scandals.
Bank of Ayudhaya	24.9%	40% foreign owned. Resisted state recapitalization. Ratanarak family sold other assets to retain the bank.
Thai Dhanu Bank	9.4%	51% owned by Development Bank of Singapore
Bank of Asia	6.1%	75% owned by ABN Amro.
Nakornthon Bank	5.6%	75% owned by Standard Chartered Bank.
Radanasin Bank	Apprx. 11%	75% owned by United Overseas Bank of Singapore.
Laemthong Bank	N.A.	Taken over by the government and merged with Radanasin Bank.
First Bangkok City Bank	N.A.	Merged with Krung Thai Bank in late 1998.
Siam City Bank	Apprx. 11%	Taken over by the government.
Bangkok Metropolitan Bank	Apprx. 5%	Tejapaibul family lost control when government takes over. For sale to a foreign bank.
Union Bank of Bangkok	N.A.	Taken over by the state and then merged with 13 finance companies also seized by government to form BankThai.

Source: Hewison (2002: 242)

Appendix C: Supplementary Data of Chapter 3

Figure C1: Shares of Credits Classified by Sectors (continued from Figure 3.2)



Note: Total amount of credits is comprised of loans, overdrafts, bill and others. It is also composed of Thai commercial banks (exclude branch offices abroad), foreign banks branches and stand-alone IBFs (Out-in). Other Personal Consumption consists of hire purchase, education, travelling –oversea employment and other personal consumption.

Source: Bank of Thailand, Calculated by the author

Appendix D: Ex Ante and Ex Post Process of Time-Series OLS Analysis

Checking for deterministic trend

It needs to be checked before implementing ADF test whether the variables exhibit deterministic trend or not. The first step is to check the series is a pure random walk with drift and time deterministic. The null hypothesis is the series does not exhibit time deterministic, against the alternative one that the series does. If null hypothesis is rejected, it can be concluded that the series is a random walk with drift and time deterministic. On the other hand, if null hypothesis is failed to reject, it can be said that the series is not time deterministic but whether it is a pure random walk or a random walk with drift is yet to be known. Then, the second step needs to be proceeded. The null hypothesis is that the series is a pure random walk, against the alternative hypothesis which is the series is a random walk with drift. However, if both null hypotheses are rejected, the AIC and BIC values will be used as key indicators, the lower values, the preferable type of model.

Table D1: Time Deterministic Trend Test Result

	HHS			ATDR		
	F value	AIC	BIC	F value	AIC	BIC
With Time Trend	2.99	-165.30	-161.00	40.90***	142.60	147.00
Without Time Trend	1.22	-161.17	-158.30	24.39***	162.66	165.59

Note: The critical values at 1%, 5% and 10% level are 9.31, 6.73 and 5.61 respectively for with time trend deterministic and are 7.06, 4.86 and 3.94 respectively for without time trend deterministic. ***, ** and * mean statistically significance at 1%, 5% and 10% level, respectively.

For household saving rates variable (HHS), Table D1 shows that the series is not time trend deterministic; F-value equals 2.99 which less than the critical value at 10% level, 5.61. The null hypothesis of i) is failed to reject. The next step is to examine whether it is a pure random walk or a random walk with drift. The result is that null hypothesis of ii) is failed to reject again as F-value is 1.22 less than the critical value at 10% level, 3.94. It is concluded that HHS series is a pure random walk. For real average 1-year deposit interest rate (ATDR) both null hypotheses are rejected at 1% level. With less AIC and BIC value, the series is a pure random walk with drift and time deterministic.

Unit root test (ADF Test)

In order to test for stationarity of each series, ADF test is employed. The null hypothesis is that the variable contains unit root; the series is a non-stationary process, against the alternative hypothesis which is stationary. Table D2 shows that household saving rates is not stationary as p-value is less than 0.05 and the test statistic, -1.48 is more than the critical value at 10% level, -3.223; the null hypothesis is failed to reject and the series contain a unit root. , at first difference level, the series is stationary so they are I(1). In contrast, real average 1-year time deposit interest rates is stationary as p-value is 0.0000 and the test

statistic value is less than the critical value at 1% level, -4.316, so null hypothesis is rejected.

Table D2: ADF Test Results

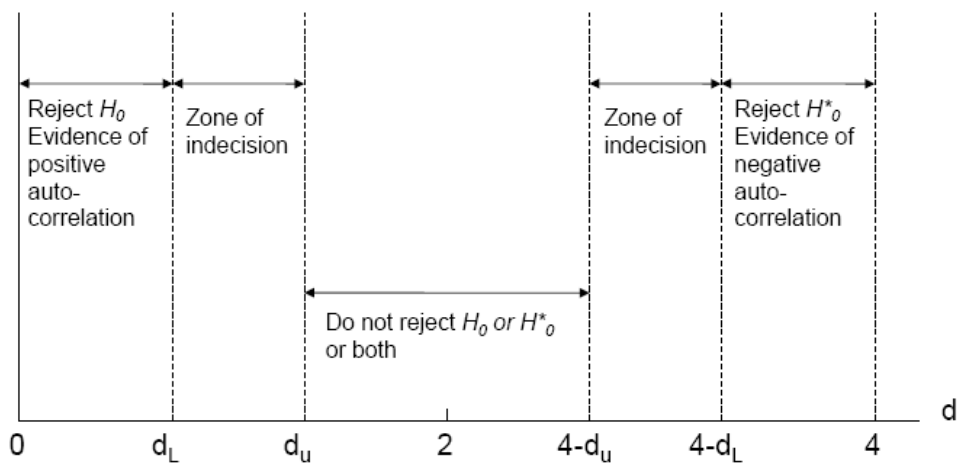
	Test Statistic	P-Value	Test Statistic	P-Value
	First Difference			
HHS	-1.48	0.5687	-5.917***	0.0000
ATDR	-6.513***	0.0000		

Note: The critical values at 1%, 5% and 10% level are -4.316, -3.572 and -3.223, respectively for with time trend deterministic, and are -3.709, -2.983 and -2.623, respectively for without time trend deterministic. For first difference level without time trend deterministic, the critical values at 1, 5% and 10% level are -3.716, -2.986 and -2.624, respectively. ***, ** and * mean statistically significance at 1%, 5% and 10% level.

Durbin-Watson Test

If all variables are stationary according to equation (2), Durbin-Watson Test is utilized to capture autocorrelation problem. The null hypothesis is that there is no positive/negative autocorrelation. The decision making rule is demonstrated in Figure D1. As shown in Table D3, the d-statistic is 1.808 which is more than 1.425 (dU) and less than 2.575 (4-dU). Hence, null hypothesis is failed to reject and it can be concluded that there is no autocorrelation in this model specification.

Figure D1: Decision Rules for Testing the Hypothesis of No Autocorrelation



Source: Gujarati 2003: 469

Table D3: Durbin-Watson Test Result

n	k	dL	dU	d-statistic	4-dU	4-dL
31	3	1.022	1.425	2.224	2.575	2.978