Macroeconomic Policy for Emerging markets
Lessons from Thailand

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Chapter 5
The stock market and the macroeconomy

1. Introduction

As Thailand's financial development progressed further, new forms of saving are available in response to rising demand from wealthy households. Unlike traditional bank depositors, who seek low risk and stable interest rate income, investors in the stock markets prefer higher returns since they can accept a higher degree of financial risks. Bonds are new portfolio options for savers and investors who are willing to give up liquidity for the sake of stable returns in order to diversify assets. The development of the stock market has an essential impact on Thailand's macroeconomy. In this chapter, we examine how the activity in the stock market is related to the real sector. Rising stock prices exert a wealth effect on consumption, as households feel richer during the booming stock market and vice versa during a market slump. A bull market encourages firms to boost physical capital stock because it is less expensive than acquiring shares of listed firms. Consumption and investment expenditures, therefore, respond to stock market booms and busts. Other factors such as expectations, business sentiment, and the Dow Jones Index, can also cause volatility in the stock market. It is essential to understand the sensitivity of the stock market to shocks of macro variables. Furthermore, volatile movements of international stock markets affect the Thai stock market because international investors' wish to diversify their portfolio into Asian shares. In the event of financial shocks, there can be a contagion effect via the interconnectedness among asset prices in Asia.

2. The capital market and Thailand's financial development

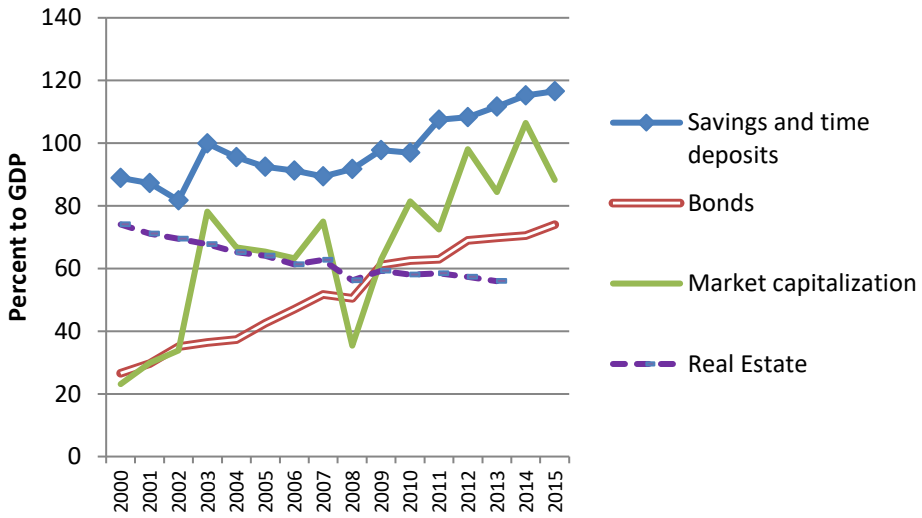
As the Thai economy gradually moved from low income to middle-income country, households' propensity to save increased. Because the output growth rate is positively related to high saving ratio, Thailand's high growth rate before the Asian Financial Crisis (AFC) generated high savings, which provided financial resources for investment. Nevertheless, deceleration of Thailand's economic growth after the AFC caused a considerable decline in the investment rate. The excess savings led to declining interest rates, but the resulted decline in the cost of investment did not correct the trend of declining investment. The rate of return from savings was not high enough to attract saving and time deposits (quasi-money) in commercial banks. The slowdown in economic activities in Thailand in the 2000s caused quasi-money to rise slowly relative to GDP expansion. As the process of financial development continues, households have alternative forms of saving through stocks and bonds. Government bonds and bank deposits are complementary since both have low risks and stable rate of returns. Bonds and fixed deposits are assets with a long maturity, providing a safe asset for long-term investors who are risk-averse. Stocks are more liquid and higher risk than quasi-money and bonds. As such, stocks can be considered as substitutes for bank deposits and government bonds.

The relatively high risks from holding equities can be seen from the volatility of market capitalization (Figure 5.1). While the share of bonds to GDP increased gradually over time, except in 2008 during the GFC, market capitalization as percent of GDP fluctuated from year to year, reflecting movements of share prices. The ratio of bonds to GDP rose almost steadily from 27 % in 2000 to 74 % in 2015. Bonds in particular government bonds provide safe financial assets to wealth holders. For majority of the Thais, bank deposits are still the most important assets to hold, although deposits yields are lower but they are considered as safe assets. Savings and time deposits increased from 89 % in 2000 to 117 % in 2015. This increasing trend indicate the rising degree of financial deepening in Thailand. The low rate of return from deposits is regarded as high after adjusting by the risk of bank failure. There has no bank failure in the recent history of Thailand's banking system. For some households, memory of the stock market crash in the 1996 still remain fresh. It is illustrated in Figure 5.1 that from 2000 to 2010, savings and time deposits to GDP had remained below 100 %.

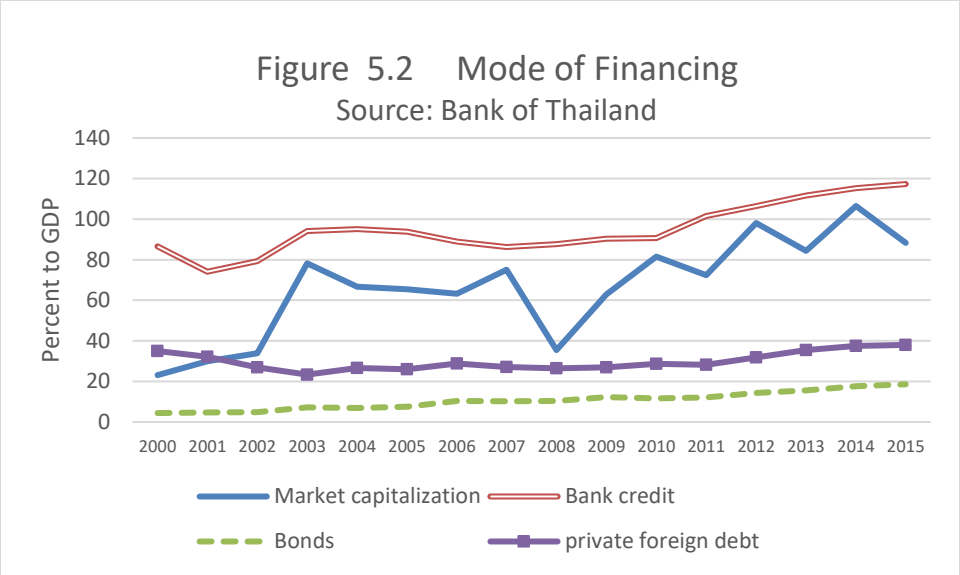
There might be a substitution effect away from bank deposits to another form of savings such as gold, land, and real estates are alternative assets to hold for inflation hedging and speculations.

The capital stock of real estates as a percentage to GDP did not increase as fast as other financial assets. Land prices have increased rapidly in the last two decades, because of the excess demand caused by genuine demand for residential development and speculative demand. Liquidity is the main problem with real estates, despite the rapidly rising value of housing. Real estates are illiquid assets, and they are not close substitutes to financial assets.

Figure 5.1 Mode of Savings
Source: Bank of Thailand and NESDB



To conclude, there has been a substantial development in the capital market since 2000, when the market capitalization was just 30 % of GDP. By 2014, it rose above 100%, despite its ups and downs through various internal and external shocks. The rising importance of the capital markets has slowly shifted the pattern of financing from indirect to direct investment financing. Bank loans are relatively less important to finance large firms, which can issue bonds and shares in mobilizing funds for investment.



Bank credit dominates other forms of investment financing mode. Thailand is still bank-based economies, where domestic firms rely heavily on bank credit to finance investment. From 2004, bank credit slowed down from 95% of GDP and reached its trough at 86 % in 2007. As the Thai economy recovered slowly, bank credit started to grow faster than GDP. By 2015, it reached 117 %. The on-going financial deepening process also allows firms to tap financial resources from the local bond market, in addition to domestic and foreign borrowing. Figure 5.2 indicates that Thai firms can issue bonds to finance investment in local currency. The trend is encouraging as it steadily rose from the low level of 5% in 2000 to 18% in 2015. Within 15 years, the Thai bond market more than tripled its size.

Thai firms borrowed abroad, but resources from foreign savings declined sharply from 35 % of GDP in 2000 to 23 % in 2003. The decline was due to lower demand for foreign borrowing, in line with domestic borrowing. Also, local firms substituted local banking borrowing for foreign loans, thanks to declining interest rate. Foreign borrowing incurred foreign exchange risks, while excess saving in the domestic market allowed firms to borrow domestically at lower costs. From 2006 onward, it seems that foreign borrowing and domestic bank loans were complementary. By 2014, private foreign borrowed increased to the same level as it was 14 years ago. Low-interest rates in the US and the strong baht during this period gave rise to more foreign borrowing. In addition to the three sources of funds discussed earlier, firms can offer shares to the public in the stock market. As shown in Figure 5.1, this direct method of financing which connects savers

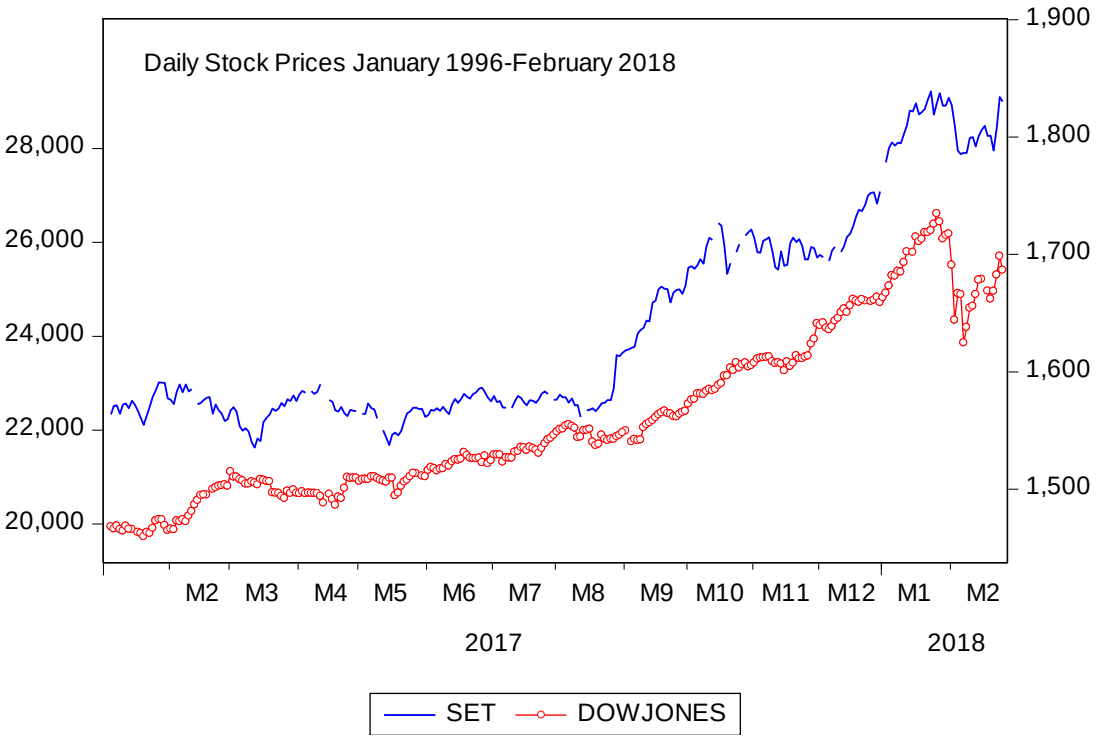
directly to investors has become increasingly important. Rising market capitalization is related to the future growth potential of the economy.

3. Stock prices and the macroeconomy

Non-neutrality of money is the short-run nature of monetary policy; monetary authority can exert an impact on the real economy. In the long run, the money supply cannot affect real variables such as output and inflation. Money is neutral in the long run because prices and wages are flexible. When expectations are fulfilled, and there is no trade-off between unemployment and inflation. Friedman (2005) pointed out that a natural experiment more than 80 years in the US monetary policy leads to a conclusion that the quantity of money determines output fluctuations and the level of the stock market prices. For a small open economy, inflows of foreign capital affect the local stock prices. Liberalizing restrictions on international portfolio flows tends to enhance stock market liquidity, which accelerates economic growth primarily by boosting productivity growth (Levine, 2001). Sawalha et al. (2016), using data from developed and emerging economies from 1980 to 2012, provide evidence that the initial FDI and FPI have a positive impact on growth. In the longer term, FDI poses a positive and significant influence on growth, but FPI can exert a negative influence on growth. This hypothesis may hold for the early stage of financial liberalization in Thailand, where capital control liberalization took place in the early 1990s. The unrealistic dream of establishing Bangkok as a financial center in the region led to premature liberalization, which followed by stock and economic boom before the collapse in 1997.

Examine daily stock prices from January 2017 to February 2018; it is found that Dow Jones and Nasdaq Granger causes the SET index, while stock market prices in London, Nikkei, and Hang Seng do not affect the movement in the Thai stock market. The Thai stock market is more related to the US stock market than any other markets. It can be the result of expectations that the Thai markets are moving up and down together with Wall Street (Figure 5.3). The Thai economy relies heavily on exports. The bull market in the US signifies the strength of the US economy and its demand for Thailand's manufactured exports. SET index, therefore, responds to favorable news from Wall Street. However, domestic investor sentiment also matters.

Figure 5.3 Dow Jones and the SET indexes



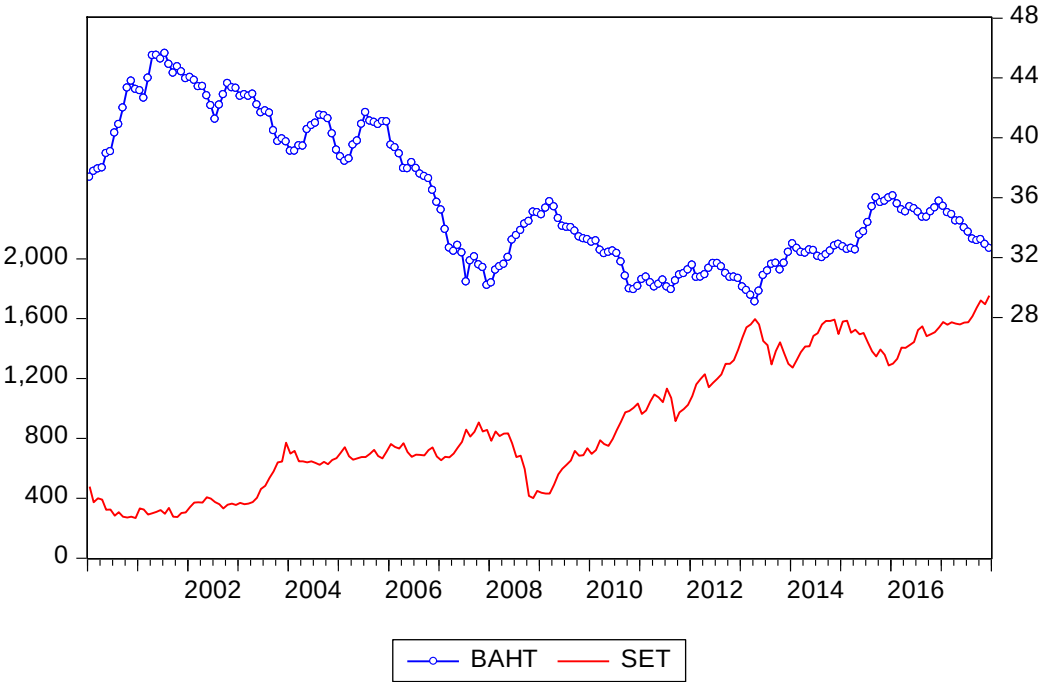
In January 2017, foreign investors accounted for 28 % of total transactions at Thailand's stock market. The combined share of local institutions and proprietary trading was 22 %, lower than foreign investors. The local individual share was 50%, almost twice the size of the share of foreign investors, but foreign investors easily sway them. It is obvious that share prices in the region move in line with Wall Street. Asian share prices move in tandem with the Dow Jones Industrial Average (DJIA). The important role of expectations on DJIA on Thailand's share prices is quite clear, as expectations move portfolio investment from low-return markets to high-return markets in Asia in the aftermath of the GFC.

Net portfolio investment plunged after the 2006 military coup, rebounded and peaked at 1.7% of GDP in 2011, after the country had returned to democracy with an elected government Foreign Portfolio Investment (FPI) pushed up Thailand's share prices when the rate of return in advanced countries declined in line with the Great Recession in 2008. The emerging economies recovery rapidly in 2010, while Europe and the US were still coping with the recession. There was a jump in net portfolio investment from 2009 to 2011. Since then the net FPI declined rapidly, turning from positive to negative from 2013 to 2014. Since then the PFI outflows continued, reaching 4.1% in 2015.

There is a channel which transmits shocks from the domestic stock market, or from the Dow Jones fluctuations, to affect domestic output. When share prices rise in the Thai stock market, it induces inflows of foreign portfolio investment. As a result, the baht appreciates, which can lead to a negative impact on exports and output. The slowdown in output leads to lower investment, which in turn depress long-term growth of the country. Portfolio inflows cause the baht to appreciate unless there is a strong intervention by the BoT. Any factors that set off panic and capital flight will lead to currency depreciation.

Outflows of Foreign Portfolio Investment (FPI) causes the SET index to falls. Consequently, the baht becomes weaker. Therefore, capital flights or sudden portfolio flows can cause output contraction or expansion through the baht movement. Stabilization policy of the central bank become more complicate with burgeoning capital markets that attract foreign capital. Using monthly data between 2000 and 2017, we can observe the impact of the stock market boom and bust on the baht-dollar exchange rate in Figure 5.4. Performing pairwise Granger causality tests by using the same 216 observations, it is found that SET index Granger causes the baht exchange rate but not the other way around. Movements in the baht exchange rate cannot accurately predict the movements of the SET index. The fluctuations of the latter, of course, reflect the influence of external factors and internal factor—investor sentiment.

Figure 5.4 Correlates of the SET and the baht/dollar exchange rate: 2000 -2017



With improving investor sentiment, or strengthening fundamental factors of the Thai economy, a boom in the domestic stock market leads to more capital inflows and baht appreciation. The baht appreciated when portfolio investment inflows pushed up the stock prices, adding more supply of the dollar to the foreign exchange market. Just like the case when domestic interest rate increases and attract capital inflows, a boom in the SET or domestic bond markets might require the central bank to stabilize the baht exchange rate.

The return from holding stocks is a leading indicator of manufacturing output growth. The underlying theory behind this relationship is that stock prices are discounted present values of the expected return from holding stocks from dividend incomes and expected capital gains. Expansion of output reflects increases in sales and profitability, which give rise to the anticipation of high dividend payoffs. Thus a rise or fall in the stock prices can predict the future path of the economy.

After removing cyclical fluctuations from the trend paths of monthly stock prices and manufacturing output, through HP filter, we can examine the long run relationship of the two variables by examining changes in the cyclically adjusted stock prices and manufacturing output. The former is represented by the SET index; the latter is captured by manufacture production index. Applying a Granger causality test on 294 observations between 1993 and 2017, it is found that the movement of SET index Grangers causes manufacturing output.

Figure 5.5 Stock prices and manufacturing output (cyclically adjusted)

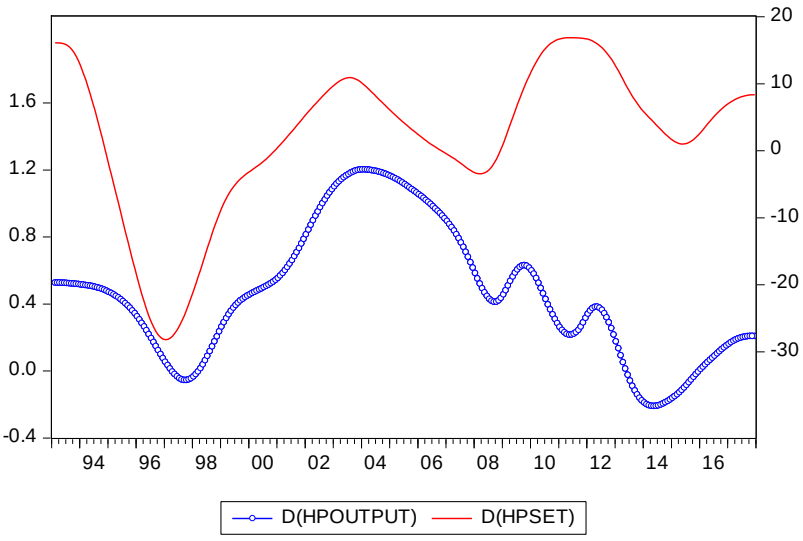
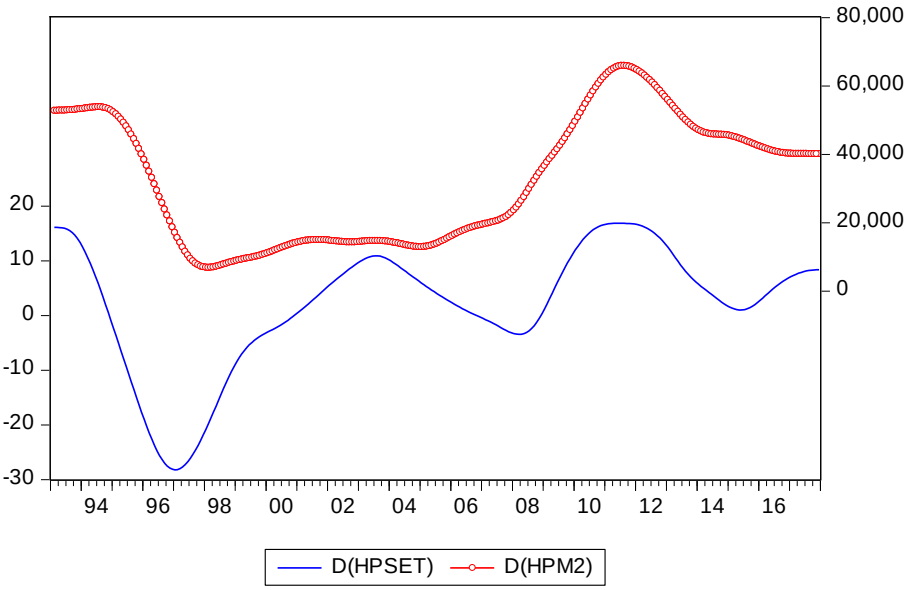


Figure 5.5 depicts such movement from 1993 to 2017. It is demonstrated that the return on stocks can predict the future path of the economic activity, both the upturn and downturns. It is worth noting that there are no feedback effects from output to stock market prices in the Granger causality sense, which is understandable since there are other coherent factors that influence the prediction of stock prices: business sentiment and investor confidence.

By performing the same experiment using broad money supply (M2), rather than manufacturing output, the empirical result indicates that the stock prices also Granger causes broad money supply. The liquidity in the stock market is related to the stock market activity (Figure 5.6). As discussed earlier, higher stock prices are the result of capital inflows, which tend to strengthen the baht. It is obvious that intervention in the foreign exchange markets to keep the baht stable enlarges that monetary base and hence the stock of money supply.

Figure 5.6 Stock Prices and Money Supply



Viewed in this light, rising stock market liquidity driven by foreign capital results in monetary expansion. Indeed, activity in the stock market has an important implication on the conduct of monetary policy. All of these complications are the result of the desire to maintain the stability of the baht. Similar to the finding of the previous experiment, just like manufacturing output, the movement in broad money does not Granger cause the yield in the stock market.

After removing the cyclical components fro the broad money supply and the set index through Hodrick-Pattrick filter, we obtain the cyclically adjusted quantity of broad money and the cyclical adjustment set index. Using the difference HP trend to capture structural changes of these two variables, we can observe from Figure 5.6 that the is a comovement of the two services. There exists a long run relationship between money supply and the stock price are

The strong correlation between output growth and lagged stock returns can be found in a panel study of emerging market economies and advanced economies (Mauro, 2003). The strength of the correlation between output growth and lagged stock returns is significantly related to high market capitalization to GDP ratio

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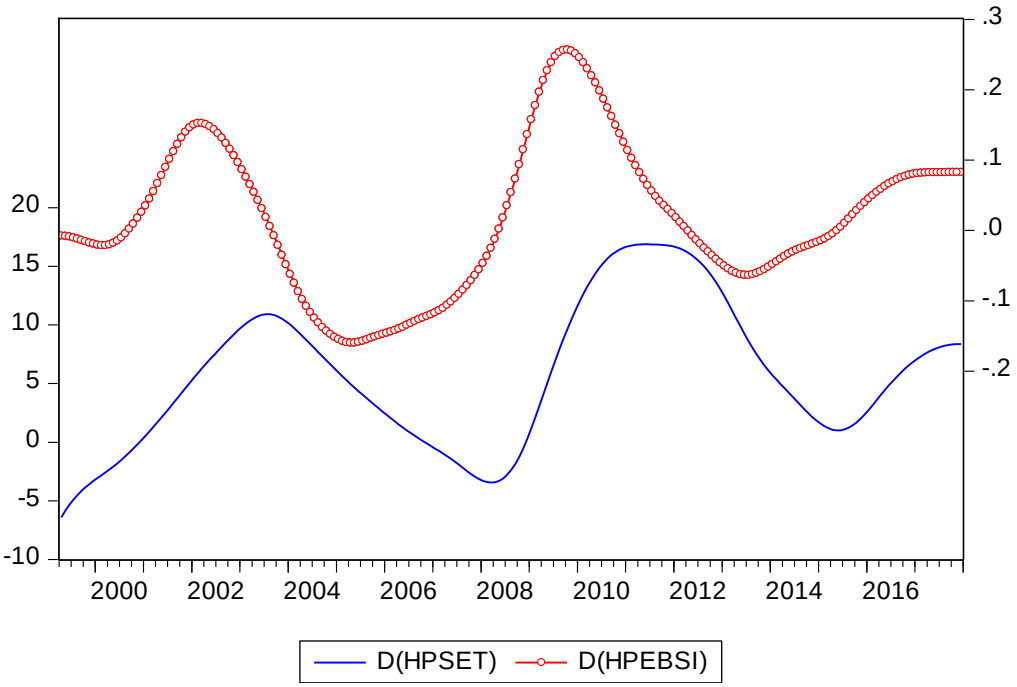
It should be noted that there was a rising trend of market capitalization in Thailand (Figure 5.2). As such, the relationship between stock market returns and output growth should be intensified over time. In a nonlinear panel data model of 27 countries, Henry et al. (2004) find the empirical evidence from that stock returns are most useful in predicting growth when the economy is in recession. In the Thai context, using monthly data from 1993 to 2016, the statistical evidence shows that the stock price Granger causes manufacturing production. The Bank of Thailand also employs the SET index as a component of a leading economic indicator, which can be used to predict manufacturing output.

Stock prices can be thought of as a present value of future streams of income derived from holding the stocks. Expectations play a crucial role in determining stock prices. The SET index responds to changes in domestic and foreign conditions, which shape expectations about the future stock returns.

The Bank of Thailand provides expectations index of business sentiment (EBSI) If we remove the cyclical components from the time series, using the HP filter, we obtain cyclically adjusted variables. To remove non-stationarity, we use the first difference of the HP series of SET and EBSI. Changes in the cyclically adjusted magnitudes of business sentiment and stock prices are shown in Figure 5.7. Employing 220 observations of monthly data from 1999 to 2017, we found that the two series are cointegrated. There are bi-directional Granger causations, which is different from the previous finding of pairwise Granger causality tests between stock prices versus broad money, exchange rate, and manufacturing output, where causation run in one direction only from stock prices to broad money, exchange rate, and output. The bidirectional causal relationship between stock market volatility and expectations provide an important understanding of the underlying nexus between the stock market and macro variables.

Figure 5.7 Stock Prices and Business Sentiment: 1999 2017



Volatilities in the stock market can be caused by changes in future output expectations (EBS), which in turn affect the stock market activity. Figure 5.7 depicts the booms and busts in the stock market from 1999 and 2017. The stock price volatilities are echoed by the swings in expectations of the future part of the economy. A shock occurring in the stock market has psychological repercussion on the future expectations of economic agents. On the other hand, the perception of future unfavorable future events which might take place, such as political turmoil or trade wars, directly affect market sentiment. The anticipation of favorable economic policy outcome perceived by economic agents can lead to rising share prices. The success of maintaining the bull market runs partly on the controllability of news. We need to explore future the factors affecting business sentiment, which in turn affect the movements of those factors. There are spillover effects from the stock market to the real economy via the expectations channel.

4. Dynamic spillovers

As discussed earlier, Thailand's stock prices reflect expected returns shaped by the Wall Street and investor sentiment. The Bank of Thailand does not use the interest rate policy to influence the stock market. The BoT did not attempt to cool down the stock market boom by using the interest rate policy. The goals of output stabilization and price stability are key priorities of monetary authorities. Nevertheless, monetary policy can indirectly affect the stock market by its exerting influence on money supply over output growth. There is a question whether the BoT should sacrifice the growth objective in order to deflate the stock bubbles.

If there is no close relationship between the boom in the real sector and the asset markets, then there would be no trade-off between growth and maintaining stability in the asset markets. It turns out that there is a strong correlation between output and stock prices (Figure 5.5), and there is a long run relationship between the stock prices and money supply (Figure 5.6). Viewed in this light, controlling the appropriate level of the money supply can contain the bubble in the stock market, which in turn would restrain excessive output growth. Thus, there is no conflict in stabilization policy objectives and avoiding bubbles in the asset markets.

There are various reasons why the central bank should prevent the stock market from getting overheated. When the stock prices rise, the Bank of Thailand will have to cope with the impact of capital inflows on the baht exchange rate. It can lead to baht appreciation and resulting in the expansion of the monetary base, due to the intervention in the foreign exchange market to prevent baht appreciation. The strong baht can hamper export growth and encourage more capital inflows for speculation in the foreign exchange markets. Furthermore, the stock market boom would spur speculation in the property sector and derail the stabilization policy of the central bank.

If there are sufficient reasons for the central bank to intervene in the stock market, then there is a further question whether the Bank of Thailand can influence the stock market prices. How high and how often should the Bank of Thailand raise the interest rate or contract the monetary base to achieve the target of slowing down the rise in the stock price? Raghavan and Dungey (2015), examine monetary policy and stock markets in Singapore, Malaysia, Thailand, Indonesia, and the Philippines and conclude that any attempt to prevent asset inflation caused by speculative bubbles may derail the basic objective of the central bank: output and price stability

Unless the central bank intervenes in the foreign exchange market to maintain the exchange rate stability, there can be a contractionary impact on output when the Bank of Thailand attempts to

deflate the bubbles. Thus, whether the central bank should prick the bubbles depends on whether the economy is near full employment. If so the attempt to cool down the economy is consistent with deflating the bubbles. On the other hand, if the economy is sluggish, but the asset markets are booming, due to speculative bubbles and the spillover effect from irrational exuberance in the Wall Street, deflating the asset price bubbles would inadvertently choke off output recovery.

To provide empirical evidence to support the above conjecture, we employ a Vector Autoregressive (VAR) model to analyze monthly data provided by the BoT The period of the study cover January 1999 to December 2017. There are seven variables included in the model. The number of automobiles sold (Car) represents durable consumption expenditure, which is determined by expected output or permanent income of households. The amount of new capital investment or registered capital, (Investment) is affected by business sentiment and expectations of output sold. The areas permitted for construction in square meter (Construction) are proxied of construction investment, which also influenced by the expected yield from the property sector. The strong expansion of the economy and the favorable investment sentiment would drive the growth of this type of investment. Output variable, represented by manufacturing production index (MPI), captures current economic activity. The upturns of MPI signify the expansion of the economy and downturn of the MPI indicates economic recession. These economic activities are largely determined by the magnitude of investment and consumption expenditures. Broad money supply is included in the VAR so that we can examine whether the BoT can use monetary policy to curb asset bubbles. The final variable to be included in the model is the expected business sentiment index (EBSI), which is the key driving force of stock and market as well as decisions to consume and to invest. The SET movement is strongly dictated by expectations of the state of the economy, represented by changes in the business sentiment index, followed by money supply and output. In turn, the expectations of the economy or business sentiment are determined by the amount of money supply (liquidity), the level of permanent or expected output, and the direction of the SET index. Rising stock prices signal economic booms while falling stock prices signal economic contraction.

A number of automobiles sold are a proxy for permanent consumption expenditure, which is mostly affected by changes in business sentiment and expectation. Output (MPI) expansion also leads to higher sales of the automobile. Liquidity in the stock market, proxied by SET index movement also has a positive wealth effect on car sales. Fluctuations in money supply also lead to rising car sales, but its impact is not as strong as expectations of the state of the economy, output expansion (income effect), and stock market movement.

Private investment spending is captured in the model by the amount of newly registered capital. It is mostly affected by, in descending order, expectations (EBSI), stock market liquidity (SET), output level, and money supply respectively. Business expectations, output, stock market prices, positively influence construction activity, which is proxied by the area permitted for construction. The positive impact of money supply expansion is short lived and turns to negative impact after three months. A rise in output level leads to an increase in the money supply, while higher liquidity in the stock market drains the amount of money supply. If monetary policy is accommodative enough, demand for money will rise along with the output expansion path. There is a complex relationship between the stock market prices and the level of money supply, due to capital inflows and the central bank's intervention in the foreign exchange market.

The increase in output and stock market activity indicates rising business expectations and consumer confidence. Nevertheless, these impacts die off after a quarter. Broad money supply has a long run positive impact on business sentiment, which is maintained as long as there is a sufficient amount of liquidity in the money market. Both business expectations and SET index change gradually as they move by inertia forces of shocks in the past. When these variables change slowly, it creates dynamic spillover of shocks into the real sector of the economy. Changes in the stock market liquidity are driven mainly by expectations, which in turn are partly affected by the stock market. Other factors are contributing to business sentiment, much more important than stock market prices. Broad money and output affect stock market prices as expected by theory.

The conclusion from this VAR experiment is that stock market movements matter for the real economy through its impacts on consumption and investment. Another important factor is the business expectation, which is partly affected by the stock market. The stock market liquidity and business sentiment are important factors determining real variables in the macroeconomy. Furthermore, money supply is related to the stock market activity. This finding points out that the central bank can use preemptive monetary policy to curb asset markets from creating bubbles. This issue will be further examined in chapter 8, which discuss monetary policy for stabilization.

Figure 5.8 Dynamic Spillover of shocks in the stock market

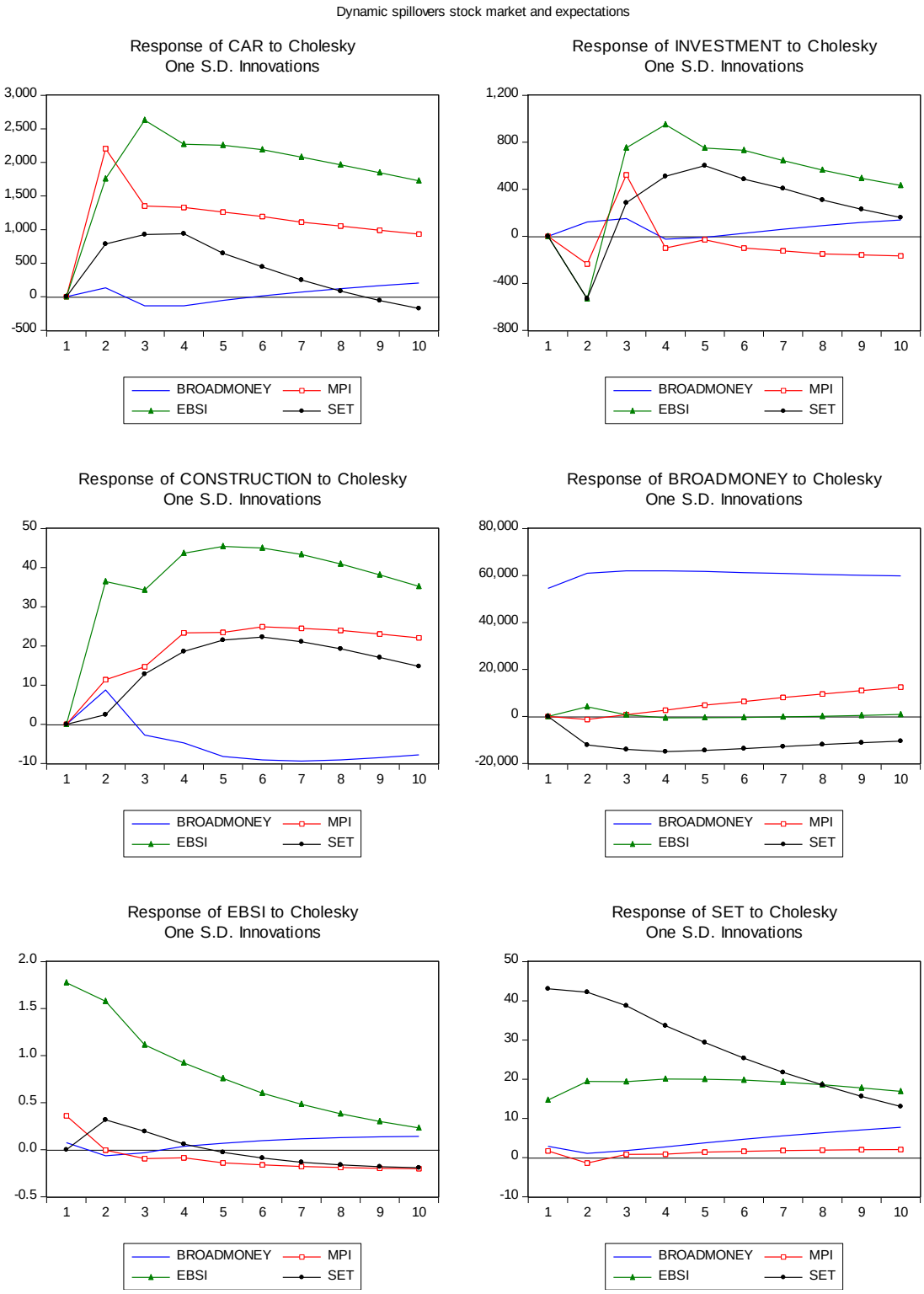


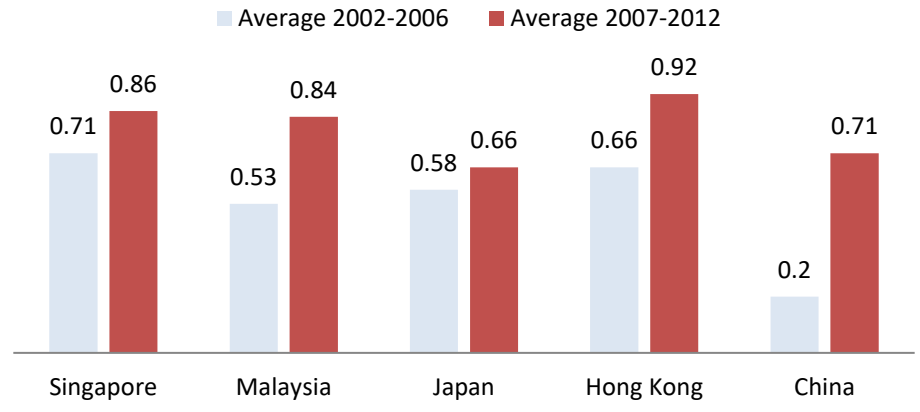
Figure 5. 1 Dynamic Spillovers from the Stock Market

5. The possibility of financial contagion

The AFC started in 1997 when the Bank of Thailand floated the baht exchange rate. Some countries in the Asian region, including South Korea, were affected by the contagion effect of massive currency depreciation and capital flight. Twenty years later, increasing the degree of interconnected of trading countries implies that shocks from one country can be easily transmitted to other countries through export booms and busts. Similarly, when capital accounts are liberalized, financial shocks from a large country can be felt in other countries, whose trade and financial sectors are highly exposed to that large country. China's trade activities have become increasingly important to Thailand, replacing the role of the US, Japan, and European nations.

The stock markets in ASEAN-5 countries responded differently in directions and degrees to business cycle shocks in China and other emerging economies, but they were more aligned with growth fluctuations in developed economies (Teng et al. 2013). According to You et al. (2014), financial liberalization in China can lead to financial contagion and the regional financial crisis. As a result, there is a strong correlation between stock returns in China and major stock markets around the world. The risk of a stock market collapse exists if the People Bank of China cannot reign in the property market booms. If so, the hard landing of the Chinese economy and its subsequent stock crash in China would exert a strong impact on regional stock markets.

Figure 5.9 Thailand's stock market: correlation coefficients of returns
Source: ADB Asian Bond Integration Center



As shown in Figure 5.9, Thailand's stock market performance is related to China's stock market as well as other ASEAN stock markets. Judged by the correlates between stock market returns in Thailand vis-à-vis Singapore, Malaysia, Hong Kong, and China, the degree of interconnectedness increased over time from 2002 to 2012. Thai stock market was mostly related to activity in the Hong Kong market, where the correlation rose from 0.66 in the period 2002-2006 to 0.92 in the period 2007-2012. During the same corresponding periods, the correlates with the stock market in China increased from 0.2 to 0.71. The correlation with Japan increased marginally from 0.58 to 0.66, the degree which was still lower than the correlation with the Singapore market between the period 2002-2006. This statistical evidence suggests that the Thai stock market has been closely related to Southeast Asian neighboring countries. However, the degree of connectedness has increased considerably after the Chinese stock markets are more open and when China's economic dominance is more pronounced.

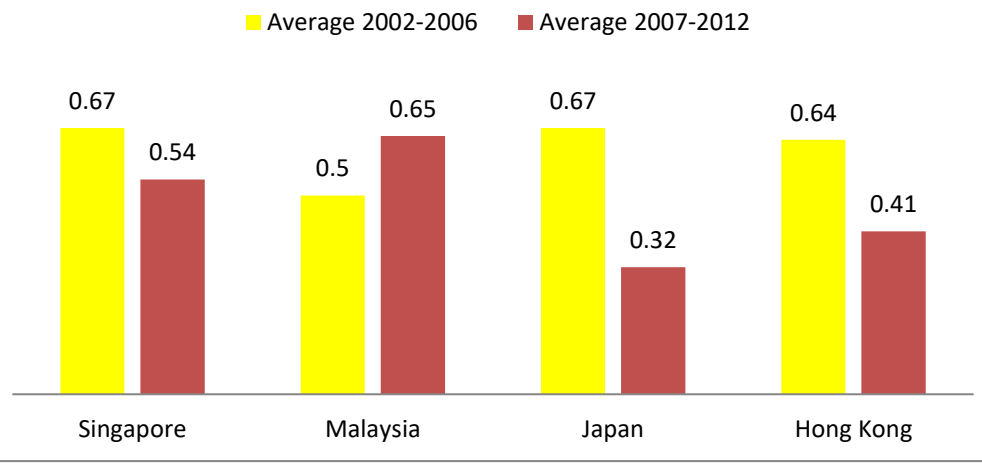
This new development in regional stock markets heightens financial risks, due to contagion effects of financial shocks. Thailand's stock market is increasingly vulnerable to disturbance of external shocks. International investors perceive the Thai stock market as an integral part of the Asian markets. In a time of financial crisis originated outside Thailand, in some Asian markets, foreign investors would move funds out of Thailand's stock markets, causing the baht depreciation in response to capital flights. On the other hand, when there is a boom in the Chinese stock market, foreign investors may also pour money into Thailand's stock market, causing the baht to appreciate. Thailand's well-developed stock market can be exposed to such shocks and complicate the conduct of monetary policy, which also need to maintain large international reserves to cushion external disturbances.

For long-term investment, bond yields indicate the cost of long-term borrowing. Bondholders must be compensated for the loss of liquidity, which reflects in the upward sloping yield curves. Each country has its specific risks, which make bond yields differ from one country to another. Since the risks are not uniformly distributed, there will be less correlation among the bond returns than stock market returns. Stocks are more liquid than bonds, and they are traded more frequently.

When considering the integration relationship of the Thai bond markets to other Asian markets, we have a different picture of development. The return correlation of the bond yields has declined (Figure 5.10). The maturity of the long-term bonds and liquidity the bond markets' correlations less when specific country risks are taken into account. From the period 2002-2006 to 2007-2012,

there has been a significant decline in the correlation of Thailand's return on bonds with those in Japan, Hong Kong, and Singapore. The reason behind the declining trend is quite clear. The Thai bond market reflected a specific country risk which makes the Thai long-term capital market distinctive from other markets. Unlike the stock market, the Thai bond market did not move closely in line with another Asian market as in early 2000, except for Malaysia where the correlation increased from 0.5 to 0.65. Thailand's bond market integration into another market because of its distinction deteriorating prospect for long-term growth after 2006.

Figure 5.10 Thailand's bond market: corelation coefficients
Source: ADB Asian Bond Integration Center



If the government wants to counteract the declining long-term growth, it must consider the fiscal stimulus. Fiscal policy stimulus through infrastructure spending, which is being earnestly employed in many Asian countries. Thailand's inadequate infrastructure development has slowed down the long-term growth of the economy. Another motivation for the big push for infrastructure development is to counteract the slowdown of world trade expansion. The huge infrastructure projects would require the Thai government to issue bonds to finance construction projects. The success of such massive infrastructure development depends crucially on financing the projects. Unless political risks declined substantially, such infrastructure bonds must be offered with high returns to attract domestic and foreign investors. The only way to keep the borrowing cost of financing infrastructure development is to maintain low inflation and reduce risk premium. Price stability is not difficult to achieve, judging from Thailand's historical record of low inflation. To keep risk premium low is more difficulty. Progresses in capital market

development is not independent of political stability. The absence of political turmoil and social conflicts would reduce anxiety and perception of political risks, thereby reducing the risk premium in issuing long-term bonds.

There is an asymmetric integration development in Thailand's stock and bond markets vis a vis Asian markets. While integration with other regional stock markets has been increasing, the integration with other regional bonds markets has declined. Specific risks in the bonds markets make Thailand's bond markets decouple from other markets. In sum, the bond market is subject to less financial contagion than the stock market.

6. Concluding remarks

Rising level of market capitalization in Thailand reveals a process of physical capital depending as the stock market performs a critical role of more efficient allocation of financial resources to investors. Although the Thai capital market has been integrated more into the world financial markets, it has been exposed more to external shocks and would act like a conduit transmitting financial shocks to the macroeconomic variables.

In the classical world, the real economy is separated from the financial sector in the sense that the money supply does not affect the real sector. The only function of the money supply is to determine the price level but has no impact on output and employment. A dichotomy between the real and monetary sectors exists in the classical world, where prices and wages are flexible. In the Keynesian world, the two sectors are connected via the interest rate. The empirical evidence provided in this chapter indicates that there is also another channel through which money and monetary sectors are inseparable. The stock market is another channel that links the monetary and real sector.

Expectations about the future direction of the state of the economy, or business confidence and sentiment, affect the stock market liquidity. The wealth effect from the stock market affects consumption and investment expenditure, providing the linkage between the real and financial sectors. Monetary expansion enhances liquidity in the stock market and stimulus private investment and consumption. A rise in private expenditures increases the level of output and raises output expectation; thereby creating physical and financial capital deepening. It is plausible that output and price level stabilization goals are not in conflict with the central bank's objectives of keeping the lid on the overheated asset markets. The empirical evidence suggests a

possibility that the Bank of Thailand could have a preemptive monetary policy before the stock market can formulate the bubbles, which can send ripple effect to the real sector.

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