THE DETERMINANTS OF FINANCIAL INSTABILITY IN EMERGING COUNTRIES
THE CASE OF VIETNAM

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1 INTRODUCTION

1.1 Problem statement

The process of financial integration can bring about both potential opportunities and threats to the economic progress of the countries (Agénor, 2003). It facilitates the capital mobilization thus providing sufficient capital for productive projects in the investment destination countries. However, the severity of the recent global financial distress has demonstrated that the adverse side of global financial integration is prevailing. Since the last decade, stabilizing financial system has been prioritized at the top of national and international policy agendas so far (Borio and Drehman, 2011). Supervisory authorities, central banks and policymakers have been focusing on detecting the potential buildup of risks threatening financial stability and the construction of frameworks for remedial measures to prevent outbreaks of financial turmoil. Nonetheless, the validity of measurement of financial (in)stability is seriously challenging the fulfilment of missions of supervisory authorities. The challenging measurement is whether the measurement can adequately capture the set of conditions of financial instability with qualified confidence.

To cope with this main challenge, first of all, from a theoretical perspective, it is essential to clearly distinguish financial instability from financial distress. Borio and Drehmann (2011:4) define that financial distress (or financial crisis) is "an event in which substantial losses at financial institutions and/or their failure cause, or threaten to cause, serious dislocations to the real economy, measured in terms of aggregate output collapsed". Meanwhile, financial instability is defined as "a situation or a set of conditions in which normal-sized shocks to the financial system are sufficient to produce financial distress, in which the financial system is fragile. These shocks could originate either in the real economy or the financial system itself". Despite quite rough definitions, they enable to determine the scope of the analysis of financial stability. Firstly, the scope should be limited to the performance of financial institutions and financial markets. Secondly, the fundamental difference between financial distress and financial instability is that the former is referred to as the observed event while the latter is referred to as the properties of the financial system, including observed and unobserved ones. As a result, it is likely that even if there is not the emergence of the financial crisis, the financial system can be also unstable. Lastly, the analysis should capture either the endogenous financial cycles view or the view of the amplification mechanism of the financial system in response to the external normal-sized shock[1]. The scope of

[1] They will be discussed in Chapter 2

monitoring financial (in)stability enables the analysis to focus only on the specific vulnerabilities and relevant risks in the financial system, given that there are various channels of transmission of exogenous shocks or economic fluctuations impacting on the system.

In a similar concern to other emerging countries under the context of financial integration, it is reasonable for Vietnam supervisory authorities to look for a reliable approach to deal with financial instability. In the Association of Southeast Asian Nations (ASEAN), Vietnam contributes substantially in joint attempts to promote the process of regional integration to move forward "One Vision, One Identity, One Community[2]". Additionally, since Doi Moi (Renovation) policy in 1986, Vietnam has signed several multilateral commercial agreements to engage in international markets for the objectives of economic development. As a result, the country has achieved economic growth throughout the long period and reaps considerable benefits from openness policies. However, the adverse side of the integration process has been gradually materializing recently. Vietnam was not affected by the Asian financial crisis in 1997, however, the country suffered severely during the outbreak of Global Financial Crisis in 2008, when the integration process was accelerating. Moreover, during the 2006-2008 when there is no systemic risk in international markets, Viet Nam still individually suffered a domestic financial distress. Therefore, with this research paper, I want to assess the properties of Vietnam financial system to determine its vulnerabilities. Additionally, to facilitate monitoring of the contemporaneous conditions of the financial system for remedial measures of Vietnam supervisory authorities.

1.2 Research objectives

The main research objective of the study is:

- The study mainly aims to identify the determinants of financial instability in Vietnam financial system.

The sub-objective is as follow:

- The study seeks to identify the most important indicators of financial instability in developing countries.

1.3 Research questions

In order to achieve research objectives above, the following research questions have been raised. The main research question is:

[2] Secretariat, ASEAN, 2015. ASEAN Community Vision 2025. *Jakarta: ASEAN Secretariat, available online at (accessed 18th January 2016): http://www. asean. org/storage/images/2015/November/aec-page/ASEAN-Community-Vision-2025. pdf.*

- What are the major determinants of financial instability in a developing country?

The sub-research question is as follows:

- What are the most important indicators of financial instability in a developing country?

1.4 Chapter outline

Following the introduction, Chapter 2 discusses the existing literature of financial instability in term of its definitions, the explanation of its causes in general and in the specific context of the developing country, and the application of financial instability indicators. Chapter 3 introduces the source of the data of indicators of Vietnam financial instability. Then, Chapter 4 provides an explanation of the mechanism of the risk-taking buildup on Vietnam financial system during 2006-2008, based on literature reviews, and followed by concluding remarks and policy implications in Chapter 5. To be specific, the outlines of each chapter are presented as follows:

Chapter 2 Outline: The definition of financial (in)stability and the identification of its symptoms and consequences will be discussed at first to provide guidelines for following sub-sections. After that, the study will review the general explanation of the causes of financial instability from competing views between Monetarists and Post Keynesians. The causes of financial instability in the specific context of developing countries are also taken into account because the research objective is about Vietnam financial instability, an emerging country. In the final sub-section of the literature review, the significance and empirical evidence of indicators applied by both views to identify the causes of financial instability will be discussed further to provide instruction for variables selection in the analysis section.

Chapter 3 Outline: Data and methodology applied will be described in more details. Particularly, this section introduces the data source and propose the methodology of qualitative analysis to fulfil research objectives and research questions, given the limitation of data accessibility. Qualitative analysis is to focus on a few key variables (taken from the literature review) and plot the sequence of these variables to discuss their significance in relation to what is specified in the literature review. Besides that, this chapter also looks at the background information on the Vietnamese economy and the financial system, particularly the liberalisation policies adopted with respect to the financial sector and the monetary policies of the central bank. This description can give sufficient ground to support the arguments in the following analysis in Chapter 4.

Chapter 4 Outline: Based on the competing views and data collected, this section will analyse the financial instability in Vietnam with a focus on the period from 2006-2008. Accordingly, the qualitative analysis is conducted to find out which theory and indicators are the most indicative to describe the mechanism leading to the financial crisis in Vietnam.

Chapter 5 Outline: This section will draw concluding remarks from above analysis, point out the limitation of the study, recommend the policy implication (if relevant) from the findings, and suggest the possibility of further research.

2 LITERATURE REVIEW

2.1 The definition of financial (in)stability

The previous studies have made effort to generate a comprehensive definition of "financial stability" to benchmark the conditions of the financial system during the tranquil time. The phrase then became a major objective of central banks and supervisory authorities to ensure the function of the banking system. However, there has been no consensus of the scholars on the precise definition of financial stability so far due to the complex interactions between factors in the financial system and macroeconomic variables (Gadanecz and Jayaram, 2008). The lack of a convincing theoretical framework backing a rational measurement of financial stability has lulled policymakers and market participants into a false sense of security despite the build-up of financial instability by excessive risk-taking behaviours of financial institutions and economic actors before an upcoming financial distress (Borio, 2006, and Borio and Drehmann, 2011).

A general conception of financial stability is the non-appearance of the unpredictable collapse of significant financial and non-financial institutions which then results in substantial losses of aggregate output (Allen and Wood, 2006, Gadanecz and Jayaram, 2008). In other words, this approach defines financial stability as an absence of financial instability then it tries to identify the typical features of the episodes of financial instability. Even though it likely allows recognizing the occurrence of the crisis or the absence of financial stability, it cannot distinguish whether the root of crises stems from the financial system or the real economy during the tranquil time. In practice, it is quite prevalent that sometimes the distress originally exists in economic sectors where it is represented by the stagnation of the production and the gradual increase in unemployment rate thus putting pressure on the performance of the financial system recording the shortage of liquidity in banking system and losses of value on financial markets (Borio and Drehmann, 2011). Inversely, sometimes, there are obvious signals of financial distress before they

give rise to the economic depression (Alfaro and Drehmann, 2009). Consequently, this general conception cannot limit the scope of studying the characteristics of the financial system as well as proposing good measurements for monitoring.

In efforts to propose a more comprehensive definition of the financial instability based on its adverse consequence to the economy, Miskin (1999) claims that financial instability is the state in which "the financial system can no longer do its job of channelling funds to those with productive investment opportunities". With a similar thought, European Central Bank (2007) defines the financial stability as "a condition in which the financial system – comprising financial intermediaries, markets and market infrastructure – is capable of withstanding shocks and the unravelling of financial imbalances, thereby mitigating the likelihood of disruptions in the financial intermediation process which are severe enough to significantly impair the allocation of savings to profitable investment opportunities". Even though this definition conveys a decent description of the adverse effect of financial instability to the economy, its disadvantage is the ambiguity or a lack of indication about the specific causes of financial instability. It is obvious that a too broad definition can lead to confusion between fundamental causes and triggering causes of financial instability. For example, the shortage of liquidity in the banking system can trigger either a bank run or a higher lending interest rate imposed on borrowers thus impairing the function channelling funds of the banking sector to good investment projects. Meanwhile, the illiquidity may be caused by different factors such as a sudden contractionary monetary policy or excessive credit expansion, or even the severe capital flight from foreign investors.

Allen and Wood (2006) refer physical sciences to point out that stability is a property of a system instead of a prevailing state of affairs at a specific time. If the system rests at the equilibrium after bearing a small perturbation at a particular point, then it is considered as being stable. This means that the system has to dampen small perturbations to oscillate around the equilibrium or absorb the force caused by the external shocks to gradually return to the starting point. Nonetheless, the reactions of the system against the perturbations depend on the features and the size of the perturbation. In other words, it could respond to some kind of perturbation in either a stable or unstable manner. With respect to the size of the perturbation, the system can neutralize the force of perturbations below a particular threshold size, however, it becomes unstable if the size of the shocks is above the threshold. The reference to physical sciences has provided a concrete insight into the stability of the financial system. The perturbations and oscillation in a

simple physical system can be referred to as external shocks (eg, a reduction in productivity in the economy) and internal amplification mechanisms, respectively, in the financial system. This exogenous shock-amplification view is also the prevailing formal literature on financial instability (Borio and Drehmann, 2011).

After general discussions of existing literature about the features of both stability and instability of the financial system, it is crucial to focus on two polar camps of the literature about financial instability to distinguish different explanation of financial instability. Two competing views come from Monetarists persisting in the claims of "money matter" and Post Keynesians proposing a diverse range of sources of financial instability. Schwartz (1986) looks at the trouble in the payment function of deposit-taking institutions to define the outcome of financial instability, banking panics. "A financial crisis is fuelled by fears that means of payment will be unobtainable at any price and, in a fractional reserve banking system, leads to a scramble for high powered money". This kind of characteristics can be referred to the illiquidity in the banking system leading to insolvency. Friedman and Schwartz (1963), representing Monetarists' view, consider the consequence of bank runs as the main cause of the sudden contraction of money supply thus resulting in the serious reduction in aggregate economic output. Monetarists ignore to acknowledge a financial event recording the drastic slump in asset prices and high rate of the bankruptcy filing without triggering banking panics as a real financial distress, but as a "pseudo financial crisis" (Mishkin, 1991). They argue that the acknowledgement of these events can provide a justification for excessive government interventions such as financial bailout packages which are more likely to distort the economy. The distortion can be referred to as the inefficiency of the economy as firms that deserve to bankrupt are bailed out or the excessive money expansion can stimulate inflation soaring. In the same thought to monetarists, the Financial Sector Assessment Programs[3] carried out by the cooperation between the International Monetary Fund, World Bank, central banks of member countries and other international supervisory bodies, also focus on monitoring the performance of banking sector to draw inferences about the financial stability of the economy.

[3] The International Monetary Fund (2006, 2013 and 2015) recommended a set of 28 financial soundness indicators and macro stress testing models to facilitate monitoring and evaluation the sensitivity in five crucial aspects of the banking sector, including capital adequacy, asset quality, earnings and profitability, liquidity, and resilience to market volatility. These aspects indicate the exposure of the banking system to the market risk, credit risk, liquidity risk and interest risk (International Monetary Fund, 2009).

From an opposite view to monetarists, Kindleberger (1978) and Minsky (1970) identify a broader set of several adverse conditions which constitute a real financial crisis. The view they shared, referred to the Post Keynesian approach (Keen, 1995), which is also shared by a distinguished Neoclassical economist Irving Fisher (1933) about the debt-deflation theory of great depressions. Accordingly, these conditions comprise massive drops in asset prices, failures of too-big-to-fail corporations in both financial and non-financial sectors, a high rate of deflation in spite of significant devaluation of the domestic currency. They argue that financial distress is an inevitable outcome of the relentless accumulation of risk-taking in speculative behaviours backed by liquidity provision (or excessive loans) of banking sectors on asset markets during the tranquil time. The mechanisms of the build-up in risk-taking is known as the self-reinforcing feedback within the financial system to positive changes, may take place a long time before, in the real economy. Borio and Drehmann (2011) explain that "these mechanisms lead to the build-up of financial disequilibria or imbalances, that at some point inevitably unwind, thereby generating an endogenous cycle", opposing to the exogenous shock-amplification view mentioned previously. Some findings in historical distress indicate no sign of weak macroeconomic conditions before the emergence of banking crises to show advocates for endogenous financial cycle view (Alfaro and Drehmann, 2009, and Borio et al, 2014). Borio, Drehmann and Tsatsaronis (2014) have used the term "paradox of financial instability" to explain Minsky's theory. The concept is that the financial system seems to be the most soundness when it is actually the most fragile. The stability of the system prior to the crisis can be presented by unusually rapid credit growth, abnormally strong asset prices thus the artificially low leverage due to mark-to-market accounting rules, healthy asset quality and profits, unusually low bid-ask spread and risk premia. Meanwhile, the market participants have more tendency and motivation for aggressive risk-taking when the system performs well and stable during the tranquil time. The behaviour of market prices of property and equity during pre-period of the Global Financial Crisis originated in the U.S. in 2008 indicates this point (see Graph 4 in Borio et al, 2014). In a clarification of Minsky's views, Krugman and Wells (2010) suppose the theory states that "financial stability set the stage for the future crisis because they encourage a wide variety of economic actors to take on ever-larger quantities of debt and engage in ever-more-risky speculation. As long as asset prices keep rising, driven by debt-fuelled purchases, all looks well. But sooner or later the music stops: there is a "Minsky moment" when all the players realize (or are forced by creditors to realize) that asset prices won't rise forever, and

that borrowers have taken on too much debt…, everyone's attempt to pay off debt by selling assets all at the same time can lead to a vicious circle of plunging prices and rising distress". The triggering factors turning off the music can be confused with exogenous shocks even though they are actually generated by the dynamic feedbacks of the financial system itself (eg, a change in the mood of speculators) to a small change in macroeconomic conditions (Borio et al, 2014). In short, to have a distinction of both competing views, it is crucial to highlight that Monetarists claim the excessive government interventions are the fundamental cause of financial instability in which the illiquidity in the money market is the related symptom of the cause. Meanwhile, Post Keynesians claim the nature of the economy in which economic actors are profit seekers and have the willingness to use high leverage to finance their investment projects thus credit expansion when the economy is performing well. Then, to some extent when the debt is called for payment, the liquidity preference of borrowers by selling off their assets can lead to the collapse of asset prices thus exacerbating the fund-channelling function of the financial system.

2.2 General explanation of causes of financial instability

It should be distinguished that the Monetarists' basic definition of financial instability is the **illiquidity in money markets,** meanwhile, the fundamental definition of Post Keynesians is about **collapsing credit thus asset prices**. As a result, it is crucial to identify the main causes proposed by both views and find out which one is the most appropriate to anticipate an upcoming financial crisis. The Monetarist view focuses on a sharp rise then a contraction in money market due to the erratic monetary policy adopted without any consistent discipline for the trade-off between economic growth and controlling inflation rate. Meanwhile, the Post Keynesians concentrates on uncontrolled credit expansion then followed by a race of borrowers to liquidate their assets and pay off their debts. They blame the unstable nature and profit-seeking actors of the economy on inevitably creating the downturns of the business cycle. By contrast, the Monetarists believes in the stability of the economy in the long term if the economy is not subjected to excessive interventions of the government. Followings are explanations of the mechanism of the financial instability from their competing views.

The Financial Instability Hypothesis of Minsky (1989) marks the beginning of a new financial cycle at a time when the economy is making a good recovery indicated by a high rate of economic growth and job creation, meanwhile, firms are still conservative to use high financial leverage to finance their business projects. Minsky classified this strategy of firms as "hedge

finance"[4]. Additionally, this conservative attitude is also shared by the bankers who only prefer lending to low-risk investment projects because of the adverse impacts of the most recent financial failures inducing them to write-off bad debts from firms' default. This risk-averse attitude from both sides of the borrowing relationship encourages them to carefully appraise and implement their investment projects. As a result, in addition to the support from macroeconomic conditions of an economy on the recovery process, the conservatively-financed investments have higher possibility to succeed. When the evidence of a growing economy and successful investments gradually seems visible to businessmen and bankers, they gradually forget the conservative appraisal schemes that they used to comply with to finance their investment and have more profit-seeking motives to take more debts (Keen, 1995). The overall decrease in risk aversion and overestimates of potential cash flows of investment projects can set the stage of an excessive growth in investment projects thus the asset prices. Minsky claims this is the foundation of the asset bubbles then bubbles pop and asset prices collapse eventually.

Minsky blames the bankers, who share the rising optimism to investors for funding the increasing scales of investment projects and the speculative purchase of assets, on the increase in debt to equity ratios in firms' balance sheets. Mounting debt in firm's balance sheet leads to the depletion of firm's liquidity (cash-flow shortfalls due to recurring debt payments during a long period) and in turn, accelerating the credit growth in the economy. Minsky uses the term "speculative finance"[5] to describe the situation in which the firm gets engaged in mounting more debts to improve its short-term liquidity and expects the prospective income can adequately cover the debt payment and yields profits. Particularly, the firm uses a high financial leverage to finance its new investment projects and expects that the prospective cash flows from new projects can service all its debts. When this tendency comes to all actors in the whole economy, Minsky describes it as a "euphoric economy". The euphoria of both lenders and borrowers is fuelled by the soundness of the economy in which most of the investment projects are successfully launched and earn significant profits. As a result, asset prices steadily climb up and previous estimates of their valuations seem at an excessively conservative level corresponding to the current expectation of investors about the potentials of the investment projects. The growing demand of firms in

[4] Hedge finance means that expected cash inflows of a firm is adequate to service the whole payment of interest and principal amounts of its debts on the due date.

[5] Speculative finance means that expected cash inflows of a firm exceed the interest payment but it cannot cover all the principal amounts of its debts on the due date. Consequently, speculative financiers have to refinance their fund periodically by issuing new debts to repay due debts thus continual rollovers of their existing debts.

borrowing to sustain their operation and business expansion for competitive purpose and enlarging market share has laid upward pressure on the financial costs of borrowing money. In other words, a higher discount rate is applied to evaluate the price of the highly liquid and low-yielding financial instruments offered by the firms because of increasing demands for loans and a higher lending interest rate, especially for non-collateralized loans. In reverse, the devaluation of these financial instruments traded on secondary markets also results in the gradual escalation of the yield rate of new debt issuance.

So, to have a sufficient amount of cash to meet firms' demand in lending money, the deposit-taking institutions need to attract more deposits or develop innovative financial products. Moreover, in short-term during the recovery period, to encourage the economic growth, the central bank would like to facilitate the accessibility of the private sector to the finance for their investments by the expansion of the money supply and assure the refund of the deposits to prevent a banking panic from occurring whenever the bank turns into troubles. As a consequence, the banks become more willing to lend thus increasing credit multiplier and receiving high-risk exposure to counterparty's defaults. Simultaneously, from the firms' perspective, they are also prone to increased interest rates because of using high leverage to finance their ongoing projects. This implies that as long as the economy performs well and ensures the adequate cash flows corresponding to the expectation of the investors and businessmen, they still keep the build-ups of debts with fewer concerns of potential risks. Minsky refers the profit-seeking motives of businessmen and bankers as the unstable nature of the economy, by contrast to the Monetarists, who assume that the nature of the economy is stable but usually distorted by government interventions.

At the end of the euphoric period, it is worth highlighting the appearance of the main character in Minsky's drama, the Ponzi financier[6] (Keen, 1995). These actors seek profits by trading assets, of which prices have gained a significant appreciation on growing markets affected by the euphoria, and by taking more debts during the process. Even though the current cash flows earned from their business cannot fully cover the interest of their debts, they expect that the prospective price appreciation can facilitate them to pay off debts. As a result, Ponzi financier

[6] According to Minsky (1989), Ponzi finance means that a firm cannot generate a sufficiency of cash inflows to arrange for interest payment in their debt commitments, let alone the payment of the principal on due date. Consequently, Ponzi financiers take new debts to fulfil their existing obligations, however, they sooner or later become insolvent whenever they cannot find a new lender.

plays a crucial role in putting market interest rate under the upward pressure as well as creating the fragility of the financial system under the threat of asset values plummeted. This is because the defaults of Ponzi financiers can bring about the significant loss for lending institutions.

An increase in both interest payment and debt to equity ratios in firms' balance sheets profoundly impacts on their original estimates of prospective cash flows thus reducing the possibility to cover their interest bill and the principal amount of debts on due. As a result, it gradually transforms the investment projects initially funded by the hedge financing scheme into speculative and Ponzi ones. This situation induces the investors to sell their assets to fulfil their debt obligations. Then, the increase in new sellers on the asset markets has dragged the asset price toward its trough after a speculative period when the prices are fuelled by euphoria. In the meantime, Ponzi financiers recognize that they cannot earn any profit from trading assets on these falling markets and the cash flows yielded from holding these assets also cannot adequately service their existing debts. When bankers realize the stressful situation of their favoured clients and their loans are no longer paid off, they tend to lift the interest rate up to compensate for their loss. As a result, the liquidity is immediately much appreciated and desired correspondingly to the depreciation of the asset values on the market. This is because in the context of risks exceeding previous estimates, then referred to the uncertainty, holders of illiquid assets become net sellers to acquire the liquidity to secure their solvency. The panic of market participants mostly referred to the speculative financiers and Ponzi financiers has turned a booming economy into a slump. Then, the slump of the economy gives rise to the significant difference between the debt-fuelled asset prices and the current cash flows generated by the asset itself. As long as the divergence between them exists, the market participants keep taking net selling position on their assets. There are two factors which can bring about a convergence between asset prices and cash flows are the level of investment in the economy and the inflation rate. However, the level of investment has already reduced significantly amid the slump and left the crucial role in generating the convergence to the inflation rate. To achieve harmony between asset prices and cash flows, the options are either asset price deflation or current price inflation. This argument expresses the perception in Minsky's theory of the role of inflation, which is quite different from Monetarist's view referring inflation as the cause of excessively contractionary monetary policy adopted by the central banks. In the case of high inflation during the crisis period, Minsky applies the term of the self-correcting mechanism to describe a repeated cycle from a boom to a slump. The slump of the economy has

discouraged investment decisions thus decelerating the economic growth, however, a high inflation rate sharply increases the cash flows to ensure the payoffs of debt intensively taken during the euphoric period. Even though the economy is subjected to the stagflation with stagnant economic growth and high inflation, firms are less likely to file bankruptcy because of being supported by increasing cash flows. As a result, the self-correcting mechanism amid a high inflation rate enables the economy to avoid suffering a prolonged slump but leading to a secular decline in liquidity preference (fewer and fewer sellers of assets because of increasing cash flows from holding these assets for their business activities). In the case of low inflation during the crisis period, firms cannot generate a sufficiency of cash flows to service their debts and the amount of interest payment will be greater than their cash flows. That is the condition in which a Ponzi financier is suffering in the early period of a crisis. Therefore, the insolvency condition force firms to adopt harsh measures such as selling assets, cutting margins to improve their cash flows or even filing bankruptcy. By contrast to the high inflation scenario, these three extreme measures likely put the current price level under an additional downward pressure, thus further worsening both the cash inflows and asset prices held by firms. The term "self-reinforcing" is used to describe the further asset price deflation in the condition of a low inflation rate. Therefore, Minsky argues that the self-reinforcing mechanism should be the explanation of a financial depression. When it comes to the role of the government amid financial distress (the case of low inflation), Minsky refers it as the automatic stabilizers embodying in an increase in government spending or the liquidity injected by the central bank. These such interventions possibly suspend the happening of a real financial crisis but they can drive the economy to a vicious circle of the boom and the slump (as explained in the case of high inflation) whenever the tightening policies adopted.

By contrast to Post Keynesian view represented by Minsky's theory, Monetarists argues that the erratic monetary policy is the most fundamental source of the instability in the financial system. Applying a historical approach on the U.S. monetary policy, Friedman and Schwartz (1963) argue that every time when the Federal Reserve adopts an excessively expansionary monetary policy either by lowering the interest rate or by a liquidity provision, the inflation is soaring and driven by the increasing demand in the economy. Initially, the easy money is believed to give rise to consumers' purchasing power thus the aggregate demand outweighs the aggregate supply of goods. When the sellers are aware of the scarcity of the goods in satisfying the customers' demand, they willing to increase the prices to acquire this money surplus. Then, investors prefer

to put their money into short-term speculations rather than long-term investment, which is the main engine of the economic growth and the encouragement of the entrepreneurship in the economy. The Monetarist considers the tulip mania during the seventeenth century and the subprime mortgages crisis recently emanating from the U.S. are the consequences of the excessive money supply. In the meantime, if the central bank decides to withdraw the excess liquidity from the system, for the price stability purpose, it can lead to the sudden collapse of the short-term speculative investments, usually fuelled by banks. Accordingly, the Monetarists claim that the lack of liquidity caused by the rapid withdrawal of the Federal Reserve triggered the panics in 1930 when some banks were left for their failures. As a consequence, depositors of other banks started worrying about the security of their savings if the banking system kept witnessing more failures, thus going for bank runs and further exacerbating the illiquidity. To avoid a downward economic spiral in terms of inflation, speculation and recession, Monetarists' suggestion is the implementation of a predictable monetary policy to promote a steady economic growth. This means that a gradual expansion or contraction of the money supply is preferable to support a sustained economic growth. In general, both views arrive at a consensus on the process how the economy ends up with a financial instability but a dissensus over the role of inflation amid the distress and the fundamental cause and aftermath of the instability.

2.3 Explanation of causes of financial instability in developing country context

When it comes to variables of financial instability in developing markets, **capital flows** from advanced economies should be taken into account as an additional determining factor. The globalization process has strengthened the interlinkages between markets and facilitated capital mobility regardless of national borders. Besides the benefits from additional capital channelled to developing countries for efficient investment projects, the process has also increased the risk exposure in terms of sudden capital withdrawals or build-up of risk-taking investments in these countries. Accordingly, Monetarist and Post Keynesians are still debating whether the capital outflows or inflows, respectively, are the cause of financial instability thus leading to a full-scale crisis. From competing views, based on the general explanations of causes of financial instability, Monetarists argue that a weak balance of payment (due to excessively creating money, high inflation rate and lasting current account deficits) can bring about an outflow of foreign exchange reserves and reactions of the central bank against the depletion of foreign exchange reserves are sharply lifting the interest rates and absorbing the money excess thus illiquidity in money market.

As an alternative to capital outflows, Post Keynesians point out that indeed foreign capital inflows leading to an increase in foreign exchange reserves are the sources fuelling the euphoric credit expansion. Eventually, when the interest payment of foreign-denominated debts exceeds the cash flows generated by investment projects, the collapse of credit and asset prices is an inevitable consequence of the excessive credit expansion. To shed light on the validity of both competing views, Mishkin (1999) reviewed the sequence of events leading to the run-up to the financial crises in Mexico and East Asian countries during the 1990s. He focused on the set of pre-conditions setting the stage of an upcoming crisis. His findings indicate that macroeconomic fundamentals including inflation and budget deficits were so low at that time and they caused no threats to the economy (in contrast with Monetarists' assumption about the role of inflation in pre-crisis period). Additionally, even though there were serious current account deficits in these countries, they still attracted a great net capital inflows also followed by credit expansion and substantial problems in banks' balance sheets (as expected by the Post Keynesians).

Explained by Miskin (1999), during that period, Mexico and East Asian countries were promoting the financial liberalization process and started removing restrictions on the ceiling of lending rate and the purpose of borrowers (encourages banks to earn more profits by lending). As a result, the credit expansion in these countries was aggressively promoted, additionally fuelled by foreign capital inflows, shared by the euphoria of the domestic bankers for seeking profits. The main concern of a rapid expansion in credit was the risk-taking tendency of borrowers thus the low quality of loans because of easy money. This tendency created speculative and Ponzi financiers in the economy. In addition to easy money intentionally offered by banks, these financiers made banking sector looked profitable but veiled a lot of credit risks. The acceleration of financial liberalization and high-yields generated by banks attracted foreign capital inflows into banks for seeking profits. Additionally, the government of emerging countries preferred operating fixed exchange rate regime to peg their currency to the dollar to attract more foreign capital inflows. However, the stability of the exchange rate supported by a fixed exchange rate regime likely encouraged excessive risk-taking propensity of investors. Mishkin (1999) found that the average capital inflow within three years before the outbreak of financial turmoil in Mexico and East Asian countries exceeded 5 per cent of their GDP. The common destination of these inflows was in the banking sector to facilitate the development of credit. Mishkin finds that "lending booms, in which bank lending grew at very rapid rates, occurred in all crisis countries before the crisis…Lending

booms thus look like they could have been an important factor causing problems in the financial sector". Annual credit growth in the Mexican (during the period 1991 – 1994) and East Asian (during the period 1993 – 1996) banking sectors were over 20 percent and varying between 17 percent to 30 percent, respectively. His findings also advocate the evidence provided by Kaminsky and Reinhart (1999) studying the cause of twin crises in terms of banking and balance of payment problems. The easy credit induced the creditors to engage in risk-taking projects and rising asset prices, therefore, bankers faced a great possibility of substantial loan losses reflected in their balance sheets. In turn, the deterioration of banks' balance sheet led to insolvency in the banking system thus a full-scale banking crisis. The financial crisis driven by a credit crunch can make the economy stagnant because the banking sector increases the interest rate to compensate for their loss as well as default risks of borrowers.

In the same interest in the Mexican and Asian currency turmoil, Kaminsky and Reinhart (1999) focus on the linkages between banking and currency crises in 20 countries covering the period 1970 – mid-1995. They choose countries characterized by several criteria in terms of small open economies, fixed exchange rate regime, and high-frequent data availability. To analyze the roots and linkages of two crises, they observe the evolution of 16 macroeconomic and financial variables corresponding to the timetable of the crises. These variables[7] are classified into financial liberalization, current account, capital account, real economic sector, monetary and fiscal policies. The empirical results show that capital account indicators convey the signals warning the highest possibility of a balance of payment crisis (roughly 81 percent). Financial liberalization indicators come as the second one which provides 74 percent of the possibility of currency crises before their happenings. Moreover, the warning property of financial liberalization indicators seems even better to foresee twin crises. Current account indicators are the third one which accurately warns occurrence of crises with 68 percent. To provide a rationale behind their results, they refer to the linkage between two type of crises in developing countries which had liberalized their capital account and domestic credit expansion while the competency of supervisory bodies and regulatory

[7] Financial liberalization: M2 multiplier, domestic credit as a percentage of GDP, the real interest rate applied to deposits, the proportion of lending and deposit interest rates. Current account: the deviation between the real exchange rate and its mean, exportation and importation revenues, and the terms-of-trade. Capital account: foreign exchange reserves, the spread between domestic and foreign real interest rates applied to deposits. Real sector: aggregate outputs and a composite stock price index. Monetary variables: money supply in term of M1, bank deposits, the ratio between M2 and foreign exchange reserves. Fiscal variable: the government budget deficit as a percentage of GDP.

enforcement was still weak. The study also notes the major difference in warning between banking and currency crises is the real sector indicators. These indicators (aggregate outputs and stock prices) possess more power in predicting banking crises (approximately 85 percent). Refer to the literature on banking crises related to asymmetric information issues (proposed by Calomiris and Gorton (1991) and Miskin (1999)), Kaminsky and Reinhart's evidence advocates the claim that the collapse of asset prices (asset bubbles burst) and increasing number of bankruptcy filings in the downturn of the economy have a strong linkage to financial distress inside the country. Eventually, they draw the conclusion in the sequence of the linkages in which the banks' problems, caused by financial liberalization, commonly come before the currency crisis (specified as speculative attacks to exchange rate and capital flights leading to a balance of payment problem). The emergence in banking sector problems can erode the capability of the central bank in terms of maintaining the fixed exchange rate regime. In return, the currency crisis aggravates problems in banking sector thus the banking crisis. As a result, this simultaneous relationship leads to a vicious spiral of financial distress. In both types of crises, either financial liberalization or increasing capital inflows can generate a financial shock which offers easy access to financing thus creating a boom-bust cycle. Be similar to Post Keynesian views presented above, they argue that "crises occur as the economy enters a recession, following a prolonged boom in economic activity that was fueled by credit, capital inflows and accompanied by an overvalued currency".

2.4 Indicators of financial instability

There is an increasing number of economists advocates the application of single composite indicators of financial instability[8] to reflect the contemporaneous conditions of the financial system to identify its vulnerabilities. Hollo, Kremer and Lo Duca (2012) introduce the formulation of a Composite Indicator of Systemic Stress (abbreviated as CISS) applied to the euro area to contribute to the strand of the literature of financial instability. The CISS is intended to capture the contemporaneous instability of determinants of the financial system at an aggregate level within a single statistic. Such a composite indicator as the CISS enables policymakers for real-time monitoring and assessment on the current conditions of the whole financial system as well as providing a breakdown or a description of historical financial crises for studies on early warning

[8] It is crucial to make a clear distinction between financial instability indicators and financial stress indicators (or called financial soundness indicators by the International Monetary Fund). The former provides a look at the financial system as a whole under the macroeconomic conditions while the latter informs the conditions of the financial system based on the performance of the banking sector, derived from the financial statements of individual banks.

property of component indicators and warning models. Besides that, the CISS also provide the measurement of the effectiveness of government efforts in releasing systemic risk on the financial system. The components of the CISS comprehend all the five most major aspects of the financial system which are namely financial intermediaries sector, money market, bond market, equity market and foreign exchange market. As the pioneers conducting a study in the composite financial instability index, Illing and Liu (2003 and 2006) construct a daily financial instability index applied to the financial system of Canada with the inclusion of these five sectors. The novelty of Illing and Liu's study is the appraisal of several weighting methods applied for the aggregation of individual financial instability indicators into one single index to determine the most effective approach. Referred the approaches of previous studies, especially the one of Illing and Liu, Hakkio and Keeton (2009) create the Kansas City Financial Stress Index (abbreviated as KCFSI) which uses the data of eleven financial market indicators of the United State financial system in terms of yield spreads and bank stock prices to identify future financial instability. They also apply the historical means and standard deviations of these variables in previous crisis episodes to compare with current conditions to see how severe they are. In the cross-national study, Cardarelli, Elekdag and Lall (2011) propose a monthly financial instability index to jointly apply for 17 advanced financial system. The index is derived from the aggregation of twelve cross-border consolidated financial market indicators by variance-equal weighting method. The European Central Bank (2009) also use variance-equal weighting method to integrate six market-based indicators reflecting the volatility of fixed income, equity and foreign exchange markets of 29 selective economies into a Global Index of Financial Turbulence (abbreviated as GIFT).

When it comes to emerging countries, the acceleration of the integration process also exposes the internal vulnerabilities of their financial system to external shocks, originating outside their borders. The Asian financial crisis initially emanating from Thailand in 1997 entailed the failures of the financial system in the rest of East Asia, the Russia Federation and Brazil. In addition to that, the initial freezing of the credit markets in the United States had evolved into a global contagion event, known as Global Financial Crisis in 2008, resulted in substantial losses in emerging economies afterwards. Park and Mercado Jr (2014) construct a composite financial instability index which covers the four important sectors of the financial system for each of the 25 emerging countries and 15 advanced countries with an analytical focus on the stability of emerging financial systems. The four sectors comprise the banking sector, the debt market, equity market

and foreign exchange market. They follow the definition of Balakrishnan et al. (2011) to capture the four main sources of financial instability which are likely to result in financial distress. The four signals are namely the volatility in asset prices on capital markets, the risk appetite, liquidity conditions, and the performance of financial intermediation. Because their study aims to fill the study gap regarding the geographical proximity in the financial transmission of external shocks between regional and nonregional markets, it applies panel least squares regression with fixed effects, structural vector autoregression and impulse response functions with the mixed sample of advanced and emerging countries. The utilization of the regression for panel data and time series data enables the study to respectively identify the determinants of the composite index of 25 emerging financial systems and the impact of external financial shocks from foreign markets to domestic markets. In an assessment of the application of single composite indicators, Gadanecz and Jayaram (2008) advocate their advantages in the definition of quantitative threshold or benchmark values and quantitative analysis in the (in)stability of financial system rather than individual indicators. Furthermore, they become useful to indicate the stress in the financial system given the absence of extreme events or those veiled from the public, especially in emerging countries where are lack of transparency and accountability. However, they also cite Gersl and Hermanek (2007) to point out the disadvantage of such a single aggregate measure. It is the interpretation of the transmission mechanism of financial stress in a given period, given that the financial system and linkages between variables in the real economy, financial intermediations and other relevant factors are complex. So, the monitoring a set of individual indicators provide still a better sense of the happenings of the financial system than a single composite indicator.

In the application of individual variables, both Monetarists and Post Keynesians look at a set of indicators representing their views to detect the evidence of financial instability or precursors of an upcoming financial crisis. The International Monetary Fund (2006) has launched a set of financial soundness indicators to find out potential problems in individual banks' performance. These indicators are established to cover fundamental aspects in terms of capital adequacy, asset quality, liquidity, earnings and profitability presented on banks' balance sheets. Navajas and Thegaya (2013) provide the empirical evidence in the validity of these financial soundness indicators in 80 countries during 2005-2012. They use **non-performing loan (NPL)** and return on equity ratios as proxies of asset quality and profitability of a bank, respectively. Their findings suggest that the lagged variables of these two proxies are positively correlated with the occurrence

of banking sector's distress. From the perspective of the economy as a whole, the average non-performing loan ratio can reveal the credit risk which the banking system is incurring, meanwhile, the profitability is the motive of bank's credit growth. From the Post Keynesian view, the low asset quality of bank's holdings is the inevitable consequence of excessive **credit expansion** or high **volume of commercial loans**. When banks are subjected to a deterioration in their balance sheets, they are more likely to reduce their lending to their clients by lifting the interest rate rather than calling for raising their capital at a fair cost to strengthen their capital safety net. According to Mishkin (1999), when the banks increase the **lending interest rate**, they tend to attract more borrowers engaging in the riskiest investment projects rather than trustworthy borrowers. He argues that while the latter conservatively estimate the cash flows of their investment projects thus refusing the loans with high borrowing costs (referred to hedge finance), the former is on the high demand of capital regardless of its interest payment (referred to speculative finance). This is because risk-loving borrower expects more likelihood in the success of their investment thus enabling them to pay off their debt and gain more profits. As a result, rising interest rate can give rise to higher credit risk facing the banks.

When taking account of capital flows in Mexico and East Asian countries before their crisis period, Mishkin (1999) find that they were popular destinations of international capital inflows. This phenomenon can be observable through the build-up of **foreign exchange reserves** by these countries. However, when the crisis had already happened, their reserves were rapidly drained out because of massive withdrawals of foreign investors. Monetarist and Post Keynesians are still debating whether the capital outflows or inflows, respectively, are the cause of financial instability thus leading to a full-scale crisis. In the literature of currency crisis, a symptom of a financial crisis, Eichengreen, Rose, and Wyplosz (2004) then followed by Balakrishnan et al. (2011), and Park and Mercado Jr (2014) introduce the exchange market pressure index to capture the set of conditions of the currency crisis. Its components include variables of exchange rates and international reserves of state banks. Gadanecz and Jayaram (2008) claim that if reserves are lower than either payment obligations of short-term sovereign debt payment or the total of export revenues within 3 consecutive months, it may send a signal of the weakening ability of the country for manipulating the exchange rate in a stable level against the external shocks. When it comes to the **inflation rate** before Mexico and East Asian crises, Mishkin (1999) find that inflation seemed relatively low and under control of the government, given a sustained **economic growth rate**. This indicator can

suggest whether the government is implementing the monetary and fiscal policy in a reasonable or erratic manner, in regards to the accusation of Monetarists against government interventions. Besides that, the trade position of the emerging country presented in **the current account of the balance of payment** also suggest the productivity of the economy in a given money supply. Monetarists argue that a prolonged current account deficit likely indicates the excessive money supply in relative to the insufficient amount of the aggregate output domestically produced. Therefore, to halt the outflows of foreign exchange reserves, the central bank has to raise the money market interest rates sharply thus resulting in the illiquidity in the market, the cause of financial crisis according to Monetarist view (Gadanecz and Jayaram, 2008). When it comes to the measures of the amount of the money supply and the market liquidity, **broad money growth rate** and **interbank rates** are, respectively, specific indicators. Table 1 summaries the signalling properties and classifications of measures mentioned above, according to competing views between Monetarists and Post Keynesians.

Table 1 Signalling properties and sectors of measures of financial instability, discussed from competing views

Sectors	**Indicator**	**Signalling properties for financial instability**	
		Monetarists	**Post Keynesians**
Real Economy	GDP growth	A lasting low economic growth rate (during a recession) can induce the government to implement excessively expansionary monetary policy	A sustained and increasing economic growth rate can create euphoria and encourage the economic actors to take risky investments
	Inflation	High inflation is a result of a excessive money surplus and precipitates an adoption of the sudden contractionary monetary policy afterwards	High inflation triggers a self-correcting mechanism thus reducing liquidity preference, preventing asset prices from collapsing, then alleviating the effect of financial instability. Meanwhile, low inflation triggers a self-reinforcing mechanism thus

			placing further downward pressure on current price and asset price levels, then leading to a financial depression
	Current account	Current account deficits demonstrate that the growth rate of money exceeds that of aggregate outputs, therefore, the economy needs to import more goods to meet domestic demand. To maintain the FX reserves, the central bank has to withdraw liquidity in the system	Current account deficits mean that the country is demanding more resources for development and investments thus creating euphoria, foreign capital inflows and encouraging economic actors to take risky investments
	Foreign exchange reserves	Depletion of FX reserves can result in the sharp rise in money market interest rates thus a fall in money supply	The buildup of FX reserves encourage the credit expansion
Banking sector	Non-performing loan ratio	An increase in NPL ratio is the result of interest rate rising (by contractionary monetary policy)	An increase in NPL ratio is the result of speculative and Ponzi financing (presented by excessive credit expansion). So, it is likely a precursor of a financial crisis
	Total bank loans	An increase in bank loans is the result of excessive money supply, or easy money	An increase in bank loans is the result of a strong economic growth and an euphoric economy
	Credit growth	A similar interpretation to total bank loans	A similar interpretation to total bank loans

	Lending interest rates	The fluctuation of lending interest rates is influenced by the liquidity manipulated by monetary policies	Banks lift lending interest rates because there is an increasing number of borrowers applying speculative and Ponzi finance and requesting for more loans
Money market	Growth rate of broad money	This indicator is the proxy of the monetary policy adopted. The central bank implements expansionary policy before the crisis and its contractionary policy is the cause of financial instability	The central bank and the government play a role as the automatic stabilizers to support either self-correcting or self-reinforcing mechanisms instead of being seen as the fundamental cause of financial instability
	Interbank rates	The rate is determined by monetary policies	The rate is determined by the performance (or problems) of banks' balance sheets
Equity market	Stock exchange index	A decline in asset prices is the result of illiquidity in the banking system caused by contractionary policy	The massive asset liquidation due to the race of debt repayment of borrowers is the cause of a collapse of asset prices.

3 DATA AND METHODOLOGY

3.1 Data

The dataset comprises indicators from several aspects affecting the (in)stability of Vietnam financial system. They reflect macroeconomic conditions, the banking sector's performance, liquidity in the money market and asset prices in the equity market. The time series of the dataset focuses on the fluctuations during the period 2006-2008 when Vietnam financial instability was accumulated thus the outbreak of a full-scale financial crisis. The expansion of the period observed is aimed to provide the comparison of conditions before, amid and after the crisis. The frequency of the data can be daily, monthly or yearly depending on data availability. From an analytical

perspective, the indicators published with higher frequency are more appreciated because they give valid grounds for discussions and assessment of the sequence of the interactions between variables.

The indicators of Vietnam macroeconomic conditions presented in the research include annual growth rates of gross domestic product (abbreviated as GDP growth), monthly inflation rates, the current account balance published on a yearly basis, and annual foreign exchange reserves. Specifically, the data for GDP growth is synthesized from Global Database's Vietnam - Table VN.World Bank by CEIC Data (available at www.ceicdata.com/en/) for the period from 2000-2004. The data for the following years until 2017 is collected from the General Statistics Office of Vietnam. Similarly, the data for monthly inflation rate is originally offered by the General Statistics Office of Vietnam and arranged by Tradingeconomics (available at www.tradingeconomics.com). The basket of goods applied to calculate inflation comprises prices of accommodation, construction materials, transportation, food and beverage, clothing, and household appliances and utilities. The data for current account balance as a percentage of GDP is also provided by the World Bank and gathered by CEIC Data. Besides that, the data for official foreign exchange reserves are recorded in the International Financial Statistics of the IMF.

Regard to the banking sector's performance, a set of indicators collected includes NPL ratio, the domestic credit provided by the financial sector as a percentage of GDP (a proxy of total bank loans), monthly credit growth in year-over-year comparison (YoY) and the lending interest rate. The data for NPL ratio is estimated by the World Bank and gathered by The Global Economy (available at www.theglobaleconomy.com). However, the series only covers the period from 2008 to 2017 without the observation for the pre-crisis period. To cope with this issue, the ratio also collected from irregular reports of the State Bank of Vietnam to present the condition during 2007-2009. However, the soundness indicated by these data could misleadingly reflect the actual severity in asset quality hold by the banking sector. The State Bank of Vietnam has strong motives to announce low NPL ratios, below a threshold of 5.0% determined by international practices. Besides that, the rest of the indicators is considered as a proxy of credit expansion in the economy and collected from CEIC Data.

When it comes to fluctuations of liquidity and asset prices in money and equity markets, respectively, the annual amount of base money – M0 and daily overnight interbank rates, and Vietnam composite stock exchange index are selected to be their proxies. The data for the two formers are drawn from Asian Development Bank and the State Bank of Vietnam, respectively.

Besides that, the data for the composite stock price index is daily recorded at the closing prices by Ho Chi Minh Stock Exchange Centre.

3.2 Methodology

It is worth recalling that the research objectives are determining the determinants and their qualified proxies to identify the set of conditions, in developing countries in general and Vietnam in specific, describing the financial instability. Corresponding to competing views discussed and the limited data accessibility and frequency, the most appropriate methodology proposed is the qualitative analysis of the sequence of the linkages between indicators. It has been discussed that each view has interpreted and presumed a difference sequence of interactions between every indicator in a given set. As a result, the qualitative analysis in the following section is intended to identify whose presumption would be valid and more appropriate to explain the cause of financial instability thus a financial crisis in Vietnam during the period from 2006-2008. The Monetarist and Post Keynesian views will be referred to interpret the conditions in the period.

3.3 Background information on the Vietnam economy and financial system before 2008

Figure 1 illustrates the annual economic growth rate which Vietnam achieved during the period from 2000 to 2017. The graph shows that during the three years before 2008, Vietnam enjoyed high economic growth rate up to roughly 8.4 per cent each year without no sign of an economic recession. The economic prospect was so bright that the government used to set the growth target of 9 per cent for the year 2008 and expect that the acceleration of economic growth entitled Vietnam to be recognized as a middle-income country in the same year. However, by contrast to the expectation, at the end of 2008, the country witnessed a significant contraction in the growth rate to approximately 6 per cent, then followed by a trough of 5.2 per cent in 2009.

Figure 1 Annual GDP growth rate in Vietnam (Source: General Statistics Office of Vietnam)

According to the Monetarist view, the period of high economic growth was the result of substantially expansionary monetary policy implemented to deliberately support the economy. This is because, at that time, the government was inspired by a strong motive to acquire an impressive achievement in economic development thus attracting more capital inflows and demonstrating the effective administration and the government in the integration process. Meanwhile, the Post Keynesians have a different explanation for the movement of the growth rate. They explain that the euphoria of economic actors in the economy was fuelled by the praise of international community and rating agencies when Vietnam had gradually liberalized its economy, become more integrated to international markets and been creating more investment opportunities for the profit-seeking purpose.

Figure 2 plots the fluctuations of the monthly inflation rate in Vietnam during 2000-2017. The graph shows that the inflation started exceeding the threshold of 5 per cent, which is the preferred rate of the government, since early 2004. After reaching a peak of 10 per cent at the end of 2004, the rate was diminishing gradually and it seemed that the economy could get rid of the threat of inflation soaring. Nonetheless, the rate started escalating again in 2007 and became increasingly steep, then reached the peak of roughly 28 per cent in late 2008. It is worth to distinguish what was the main cause of the increase in inflation during the period because it enables to appraise the rationale of the manipulation of monetary policy adopted by the government thus the assertion of the Monetarist about government interventions. There are three main causes of inflation which are categorized as cost-push inflation, demand-pull inflation and monetary

inflation. While two formers can be seen as market-driven issues (exogenous shocks), the latter one is the result of the excessive money supply injected into the economy.

Figure 2 Monthly inflation rate in Vietnam

Table 2 provides the breakdown of the basket of goods and services applied to calculate consumer price index changes. During 2005-2008, the increase in prices of Foods and Foodstuffs was the highest then followed by rankings of Housing and Construction Materials, and Transport and Communications. These three categories mainly accounted for the annual CPI growth. Particularly, the cause of the increase in food prices was mainly determined by the increasing price and quantity of exported rice and increasing global demand for consuming rice. Besides that, natural disasters and epidemic outbreaks in cattle herds also contributed to reducing the number of foods supplied to domestic consumers. These reasons explained for soaring prices in Foods and Foodstuffs. In respect to the two latter categories, the escalation of the global steel price and oil price during that period gave rise to the domestic prices thus inflation rate hiking. Above explanation in inflation during the period can be considered as the advocates of demand-pull inflation, given the context in which Vietnam became an official member of the World Trade Organization and got more engaged in exportation thus the convergence of domestic prices to the world prices. Nonetheless, when taking into account the amount of money supply, Figure 3 likely confirm the money matter in relative to the rise of inflation. Moreover, the money expansion presented by two peaks in 2007 and 2010 can be highly correlated to two peaks of inflation rate in late 2008 and 2011 (presented in Figure 2). Then, it induced the government to promptly implement strictly contractionary monetary policies to obstruct inflation from rising.

Table 2 Consumer Price Index breakdown during 2005-2009 in year-on-year comparison (Source: General Statistics Office of Vietnam)

Consumer Price Index breakdown (% YoY)	**12/2005**	**12/2006**	**12/2007**	**12/2008**	**12/2009**
CPI growth (or Inflation)	**8.4**	**6.6**	**12.6**	**23.0**	**6.5**
Foods and Foodstuffs	10.8	7.9	18.9	36.6	5.8
Drinking and Smoking	4.9	5.2	6.8	10.8	7.6
Garment, Hats and Footwear	5	5.8	6.7	10.3	6.1
Housing and Construction Materials	9.8	5.9	17.1	20.5	12.6
Household Equipments and Appliances	4.8	6.2	5.2	9.1	4.9
Health and Personal Care	4.9	4.3	7.1	8.9	3.3
Transport and Communications	9.1	4	7.3	16.0	3.5
Education	5	3.6	2.0	4.2	6.1
Culture, Sport and Entertainment	2.7	3.5	1.7	5.9	2.1
Others	6	6.5	9.0	13.2	11.3

Regard to the monetary policy, in 2004, The State Bank of Vietnam (abbreviated as SBV) had three times to increase the interest rates (in terms of reverse repo rate, refinance rate, discount rate and prime lending rate) and impose higher reserve requirement rates on commercial banks, thus marking the adoption of the contractionary monetary policies. Particularly, the SBV had increased the reserve requirement rate from 2% to 5% (the increment in rates depending on the maturity of deposits). Accordingly, Figure 3 shows that the money supply had gradually declined since 2003 (until 2006). Additionally, several commercial banks were strictly restricted on lending expansion by the SBV. State-owned commercial banks were even imposed a strict limitation on the growth rate of total gross loans in specific sectors, especially in real estate and equity transactions. The SBV also required commercial banks and financial institutions to increase holdings in treasury bills, government and municipality bonds thus the reduction in money supply in the economy. Nonetheless, it should be noted that the actual figure of growth rate remained at a high level (roughly 31%) because the SBV had to inject the domestic currency into the economy to absorb the excess amount of foreign capital inflows during the period then stabilizing the exchange rate and exportation revenue (otherwise the domestic currency could appreciate and make the exported goods less competitive in terms of prices), especially in 2007. So, the intention

of the SBV was the injection of money to absorb abnormal capital inflows but the manipulation of liquidity through open market operations.

Figure 3 Annual amount of base money M0

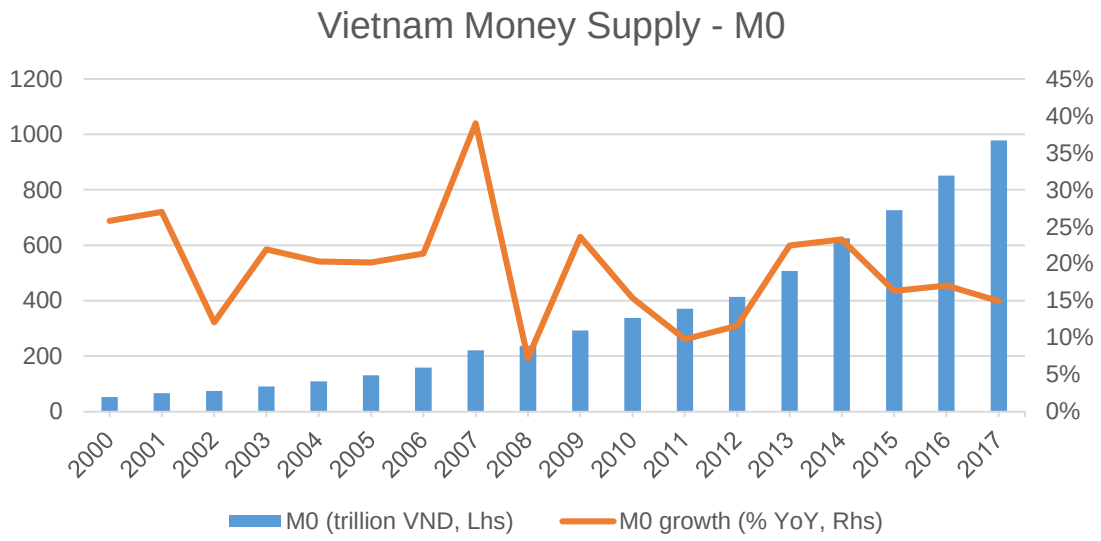


Figure 4 shows annual foreign exchange reserves which had been rising steadily since 2002 (at approximately USD 5 billion) and started going up steeply in early 2007 and reached the peak of roughly USD 27 billion in late 2008, then dropped sharply until 2011. When comparing money growth with changes of foreign reserves presented by Figure 5, it seems that during the period 2002 – 2007, the increase in foreign reserves determined the growth of the money supply. Actually, due to the liberalisation policies adopted in the financial sector, Vietnam had attracted a substantial amount of capital inflows in terms of foreign direct investments and portfolio investments. According to a report[9] of the SBV, up to late 2006, Vietnam had had 35 branches or subsidiaries and 5 joint venture banks of foreign banks, and 4 leasing companies. These banks and leasing companies came from 14 nations and their asset holdings accounted for 20% of the total of Vietnam banking sector, increased by 50% in year-over-year comparison. Their total gross loans for lending and investment in Vietnam economy had reached USD 4 billion, increased by 20% compared to 2005. Additionally, the disbursement amount of foreign direct investment from 2006

[9] Available at: https://www.sbv.gov.vn/webcenter/portal/m/menu/trangchu/ddnhnn/nctd/nctd_chitiet?centerWidth=100%25&dDocName=CNTHWEBAP01162524947&leftWidth=0%25&rightWidth=0%25&showFooter=false&showHeader=false&_adf.ctrl-state=10kx944ylg_135&_afrLoop=5488711007938406#%40%3F_afrLoop%3D5488711007938406%26centerWidth%3D100%2525%26dDocName%3DCNTHWEBAP01162524947%26leftWidth%3D0%2525%26rightWidth%3D0%2525%26showFooter%3Dfalse%26showHeader%3Dfalse%26_adf.ctrl-state%3D17s9qvnuqx_54

to 2008 had also reached over USD 20 billion (published by the General Statistics Office of Vietnam and the Ministry of Planning and Investment of Vietnam). As displayed by Figure 4, until 2008, there was no sign of capital outflows in Vietnam (the changes were still positive).

Figure 4 Monthly foreign exchange reserves in million USD

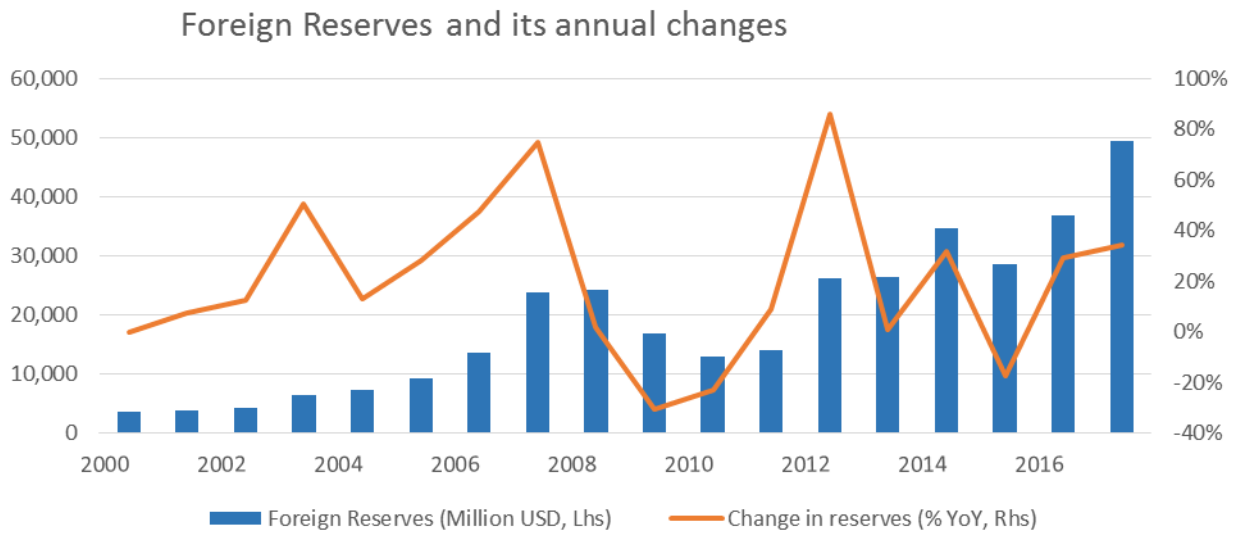
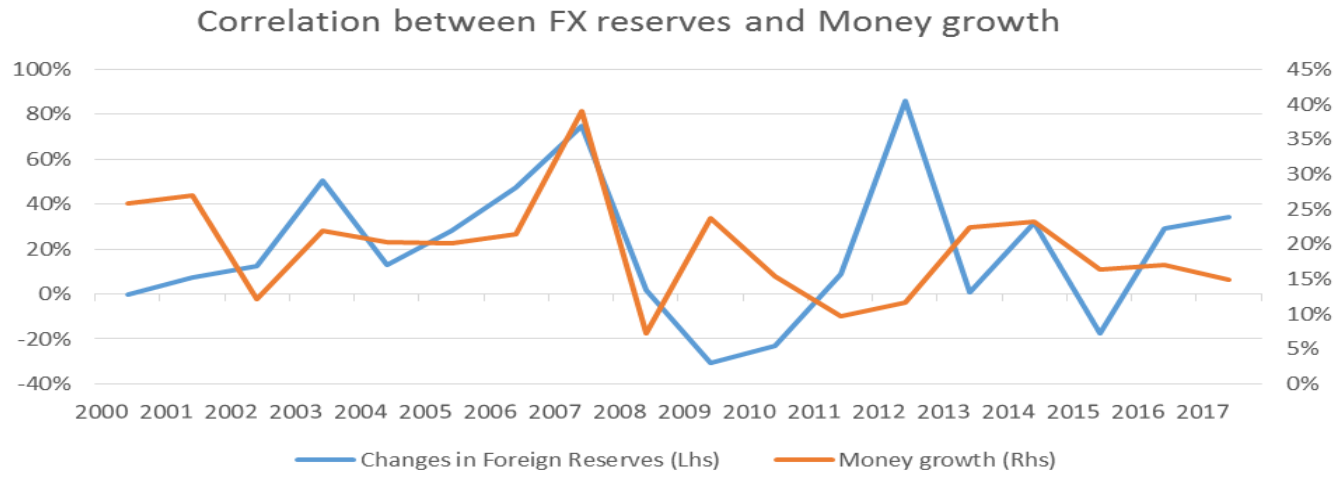


Figure 5 Correlation between the changes in Foreign Reserves and money growth



Huynh The Du[10], an economist of Fulbright University Vietnam, claims that the boom of Vietnam equity market attracted the capital inflows in terms of cash, indicated by the sharp increase in the foreign portfolio investments. As a result, the excess capital inflows give rise to the

[10] His discussion about the objective of monetary policy adoption in 2007 for either controlling inflation or achieving high economic growth is available at: http://vneconomy.vn/tai-chinh/dieu-hanh-chinh-sach-tien-te-chong-lam-phat-hay-vi-tang-truong-65397.htm

buildup of foreign reserves of Vietnam. Figure 6 illustrates the composite index of the Vietnam stock market. The figure shows that the boom initiated in early 2006, reached a peak in late 2007 then dropped drastically in 2008. If his claim about the cause of the increase in foreign reserves was right, the euphoria in the economy attracting the foreign capital inflows could induce the SBV to push the money into the economy to absorb foreign currency.

Figure 6 Daily composite index of Vietnam stock market

4 FINANCIAL INSTABILITY IN VIETNAM

So far, the preceding section has confirmed the influence of excessive capital inflows on money supply as well as the lax administration of the government in the process of financial liberalization in terms of open capital account and domestic financial sector. In other words, in the conditions of what observed above, Post Keynesians' intuition have prevailed that of Monetarists in terms of the cause of excessive money supply. In this chapter, the analysis will concentrate on the mechanism how massive capital inflows lead to financial instability in the destination country, as expected by Post Keynesians.

Figure 7 shows the yearly balance of the current account. In line with excessive capital inflows in 2008, the balance of the current account was below zero or deficits during almost six consecutive years, covering two troughs in 2003 and 2008. When a country is experiencing lasting current account deficits, with this rate, Post Keynesians argue that the nation is consuming and investing by more resources than it owns. In the combination of high economic growth, development prospect and excess international capital, the country can attract more capital inflows because it creates more investment opportunities than others for foreign investors to earn profits. And as discussed previously, the excess capital inflows can bring about problems in the

implementation of monetary policy given that the government is running the regime of fixed exchange rate or crawling peg (the central bank have to inject money to absorb foreign currency).

Figure 7 Yearly current account balance (the difference between export and import revenues) as a percentage of GDP

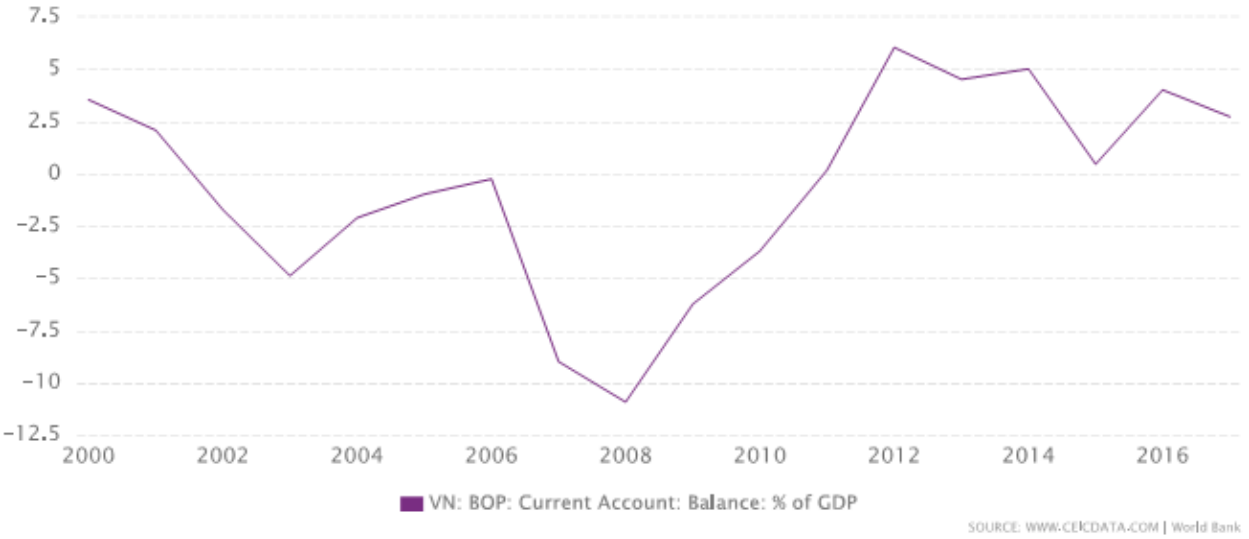


Figure 8 illustrates the buildup of domestic credit allocated by the financial sector from 2000-2017 and Figure 9 shows year-on-year credit growth. The combination in the interpretation of both figures is essential to provide a good sense of conditions of credit expansion before the crisis outbreak. The upward slope (indicating credit growth is greater than economic growth) and a steeper one between 2006-2007 provide the advocate of Post Keynesian view on the evolution of credit expansion given the support of capital inflows as well as money supply before the financial crisis. Moreover, the noticeable point is a flat line during 2007 – 2008 (in Figure 8) which indicates that total amount of domestic credit remained unchanged, however, in the same period, Figure 9 witnesses a peak of credit growth approaching 60 percent. This could indicate that the amount of debt settlement was lower than the amount of new debt taken thus confirming indebtedness of economic actors who were applying speculative or Ponzi finance. In other words, debtors applied for new loans to settle old ones. This is the most fundamental cause of financial instability corresponding to Post Keynesian view.

Figure 8 Domestic credit provided by Financial Sector as a percentage of GDP (a proxy of total bank loans)

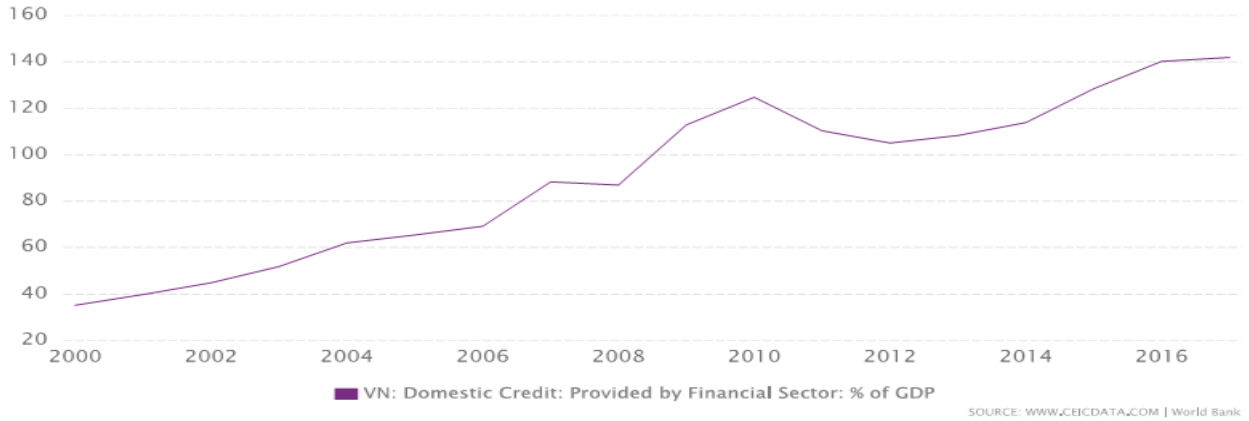


Figure 9 Vietnam credit growth in year-over-year comparison published on a monthly basis

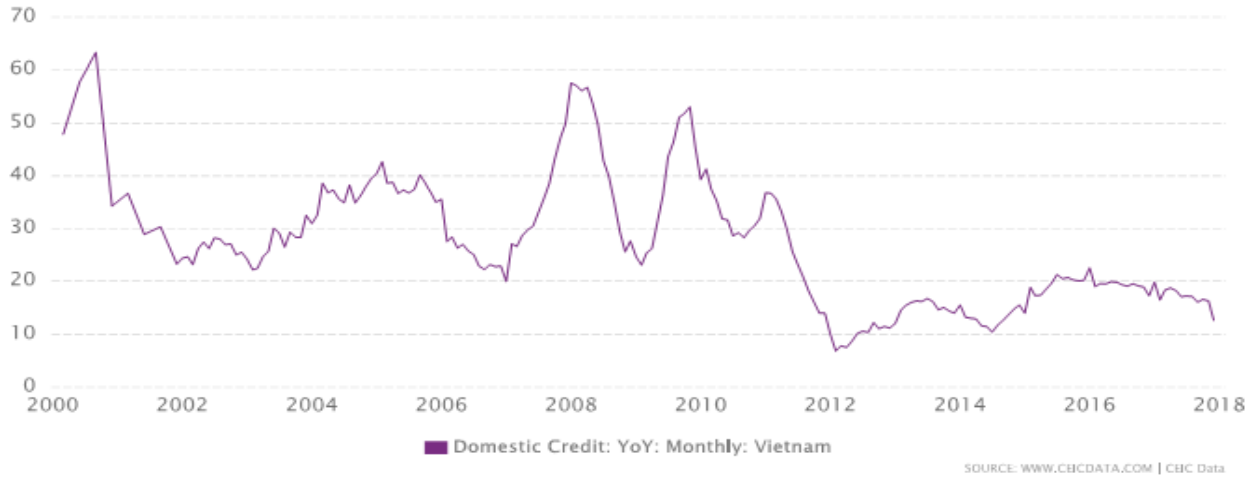


Figure 10 illustrates the fluctuations of the nominal overnight interbank rate during 2005 – 2018, a common proxy of liquidity in the money market. Right after the contraction of money supply in 2008 (in Figure 3), interbank rates increased sharply thus severe illiquidity in the market. From the Monetarist view, the illiquidity in the money market was caused by the contractionary monetary policy to cope with high inflation at that time. Furthermore, the bad economic fundamentals resulted in capital outflows forcing the SBV to sell foreign reserves to prevent the exchange rate from increasing. Nonetheless, while interbank rate initially soared in early 2008, the capital outflows witnessed in 2009 (in Figure 4). Consequently, it is not convincing to consider capital outflows as a cause of illiquidity. From Post Keynesians' perspective, they argue that the problems in the banking sector in terms of increasing holding of bad assets after a period of financial liberalization and credit expansion induced the bank to be reluctant to lend each other.

Figure 10 Overnight interbank rate (% per annum) updated on a monthly basis

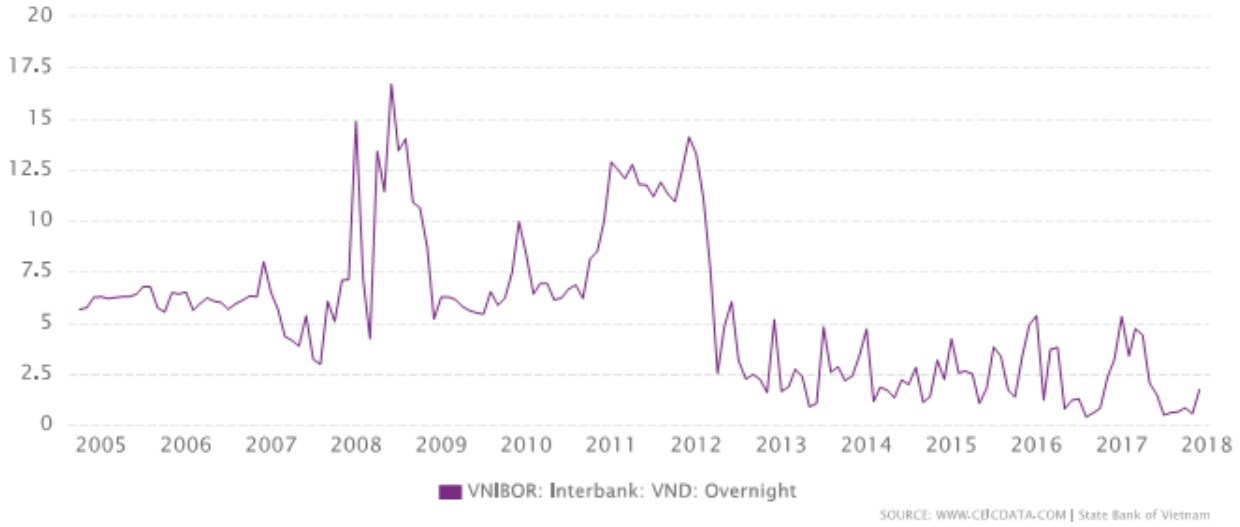


Figure 11 shows the annual average of nominal lending interest rate for short and medium term offered by commercial banks. As discussed above, Monetarists argue that the liquidity in the money market, determined by monetary policy, can decide the lending rate while Post Keynesians argue that increasing risk taken by borrowers for their investment projects had induced bankers to raise their lending rate.

Figure 11 Yearly lending interest rate offered by banks to borrowers for their short- and medium-term financing

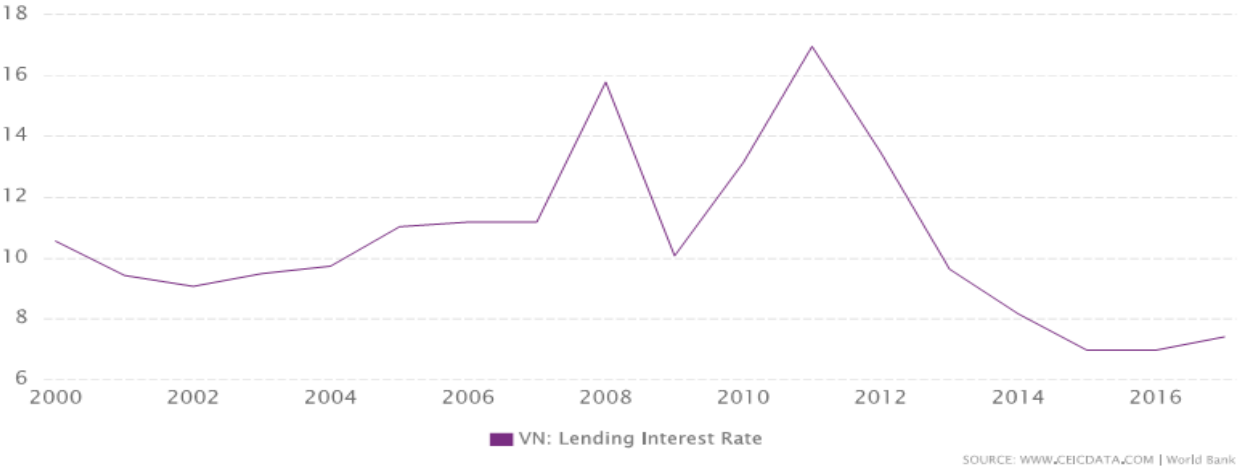
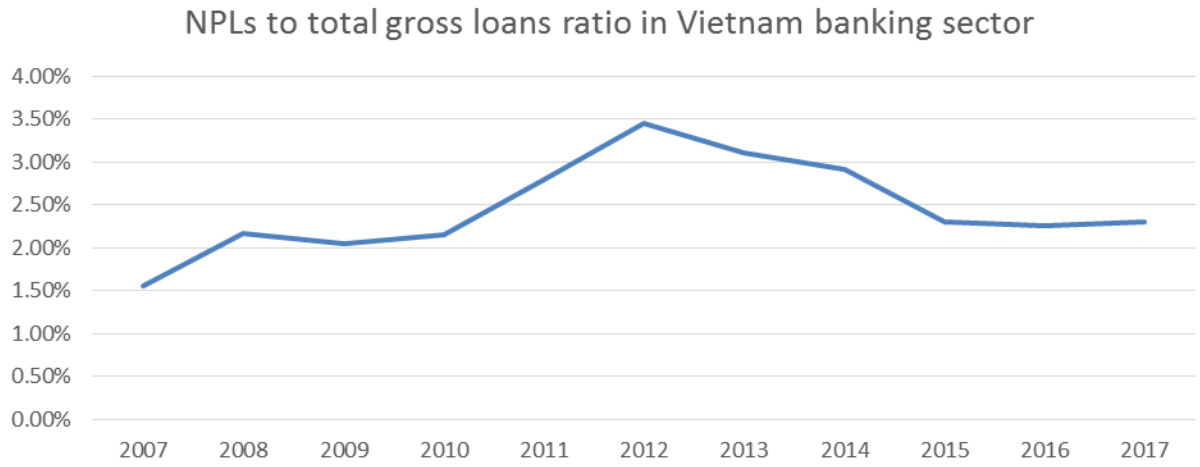


Figure 12 illustrates the bad debt ratio in Vietnam during 2007-2017, indicating that the insignificance of the issue corresponding to the tolerance of banking institutions towards credit risks. Nonetheless, many experts and international supervisory bodies such as the World Bank and IMF suppose that Vietnam standard of loan classification still diverged from the international criteria and the disclosure of adequate information on banks' loans is still limited, therefore, the NPL ratio published cannot comprehend the extent of credit risks in the banking sector (Sugiyarto,

2015). Furthermore, "refunding" scheme[11] is a common practice applied by commercial banks to have good financial statements. The study also refers to Fitch Ratings to estimate that the NPL ratio in Vietnam banking sector reached roughly 13.0% on average during 2008 – 2012. Other experts also provide their own estimation on the NPL ratio. Ho Ba Tinh (2012) claims that the amount of NPL has accounted for 7.0% to even 10% of banks' total loans. Nguyen Hong Son, et al. (2012) estimates that the ratio should vary between 8.2% - 14.0%. The significant difference between these findings and the ratio published by the State Bank of Vietnam has raised a question on either accurate figure, thus the reflection of credit risks in the banking sector. According to a rule of thumb of experts, the actual NPL ratio of Vietnam banking sector should be fivefold of the published. Therefore, the serious problem in asset quality of bankers had existed since 2007 (because it exceeded the threshold of 5% regulated by international practices) because the NPLs had increased by nearly 50% in the latter year. As a result, a set of conditions in terms of new loans issued to service old ones, equity market collapsed, increasing bad debts and interest rates confirm the happening of financial instability in Vietnam in 2008 corresponding to Post Keynesian view.

Figure 12 Non-performing loans to total gross loans ratio from 2007-2017



[11] The maturity of the debt is extended by the way that borrowers manage to pay off their debt on due day and borrow again in several days later. The truth is that borrowers are still on the verge of insolvency but their loans are not classified as the overdue loans on banks' financial statements.

5 CONCLUSION

It is crucial to recall that Monetarists claim the excessive government interventions are the fundamental cause of financial instability in which the illiquidity in the money market is the aftermath of an extremely contractionary monetary policy. Meanwhile, Post Keynesians claim the nature of the economy in which economic actors are profit seekers and have the willingness to use high leverage to finance their investment projects thus credit expansion when the economy is performing well. In the context of emerging countries, foreign capital flows facilitated by the process of financial liberalization play a crucial role in the manipulation of the central bank over the money supply, given the fixed exchange rate regime pursued by these countries. Accordingly, Monetarist and Post Keynesians are still debating whether the capital outflows or inflows, respectively, are the cause of financial instability thus leading to a full-scale crisis. When they all have to service their debt at the same time, they race to sell off their assets thus the significant slump of asset prices. The empirical evidence of Mishkin (1999) and Kaminsky and Reinhart (1999) are good instructions to identify the signal of financial instability in the case of Vietnam. The signal is related to a financial shock generated by financial liberalization or favourable access to international capital markets for domestic financing thus triggering a boom-bust cycle. In the meantime, the Minsky's hypothesis, modelized by Keen (1995), provide a clear description of the mechanism of the buildup of risk-taking finance and asset bubbles when the economy is overwhelmed by foreign capital inflows.

The objective of this research is to find out which view and set of indicators are more valid and indicative of financial instability in the case of Vietnam, an emerging market. After reviewing the conditions of Vietnam financial instability during the period 2006-2008, the study finds that the valid view to explain the evolution of financial instability is from Post Keynesian. Therefore, the most powerful indicators in warning an upcoming financial crisis worth emphasizing are credit expansion (in terms of credit growth rate and total domestic credit as a percentage of GDP), capital inflows in form of cash or foreign portfolio investment (presented by the increase in foreign exchange reserves), performance of banks' balance sheet (problems in asset quality) and interest rates.

The limitation of the research is that it only conducts a qualitative analysis in a distinct event or a specific phenomenon, therefore, the conclusions drawn from the study may be not convincing. To advocate the validity of findings in this study, the further research should apply

quantitative techniques for the panel data of a large group of emerging countries with variables selection recommended from the above findings. The combination of both qualitative and quantitative analysis can provide more convincing conclusions in the causes and symptoms of financial instability.

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