The Moderating Role of Loan Monitoring on the Relationship between Macroeconomic Variables and Non-performing Loans in Association of Southeast Asian Nations Countries

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ABSTRACT

The lending banks' function of loan monitoring plays an important role in sustaining quality loan portfolios and protects risk assets against deterioration thereby keeping non-performing loans (NPLs) within acceptable standards. The aim of this paper is to propose a conceptual model/framework of investigating the moderating role of loan monitoring on the relationship between macroeconomic variables and NPLs among Association of Southeast Asian Nations Economic Community (AEC) countries. The global problem of NPLs has been persistent and on the rise. Many attempts have been made to investigate the determinant of NPLs yet the problem has remained unexplained. Most of the previous studies have focused on macroeconomic and other environmental variables, industry-specific and bank-specific determinants of NPLs but gave less attention to the moderating role of loan monitoring functions of the lending banks. This paper proposes a framework by adding a moderator of loan monitoring to the existing models of the macroeconomic determinants of NPLs with special attention to the AEC countries that mostly were once heavily confronted with severe banking and financial crises in the late 90s. It is expected that the outcome will assist policymakers in protecting and/or improving the current state of NPLs among AEC member countries.

Keywords: Loan Monitoring, Macroeconomic Variables, Non-performing Loans
JEL Classifications: E01, G21, G32

1. INTRODUCTION

There are indeed quite number of researches conducted around the world to investigate the macroeconomic determinants of non-performing loans (NPLs) using different approaches. However, this paper has not come across any research work on the moderating role of loan monitoring on the relationship between macroeconomic variables and NPLs.

Banks as important participants of financial markets and system operate in an external business environment, which is an interrelationship of many societal factors that shape and determine their activities. This external business environment is made up of macroeconomic, political, environmental, technological, social and legal variables that affect and shape the activities of the financial markets and institution.

Banking activities in form of deposit taking and loans creations are determined by these external business environment factors hence their ability to influence the NPLs positions of banks and other lending financial institutions. Therefore, NPLs that are considered as impaired loans that have been left unpaid for by at least over 90 days; have become important issues of discourse in literature of banking and finance.

Globally banks have been in the business of taking deposit from deposit customers and making loans to their borrowing customers for consumption and/or investment purposes. In the process of assuming this financial intermediation role the quality of certain loans become deteriorated and by default become NPLs. Over the last decades the banking sector's coping capacity of dealing with bad loans was not seriously overwhelmed not until the recent financial crisis that affected global economy in 2007-2008 (Beck

et al., 2015). They argued further that the years 2007-2008 marked the beginning of sharp deterioration of bank assets quality of average banks, due to the global economic recession.

The presence of huge NPLs in the balance sheets of banks impacts on the general quality of bank loan portfolio and its effects on the financial wellbeing of the banks. Berger and DeYoung (1997) found a positive relationship between NPLs and costs efficiencies of commercial banks. The multiplier effect of these high ratios of NPLs on the quality of bank loan portfolio is that it might negatively impact on the overall banks' performances and the economy as a whole. The negative effect of NPLs on macroeconomic performance is stressed in the study of Nkusu (2011).

The existence of NPLs has become a major source of concern to many financial systems because it directly affects the main source of banks' revenue which is the interest income and to a larger extent their other lines of income such as fees and commissions. However, the extent to which NPLs affected economies across the world was uneven. The most affected countries were those of Greece, Ireland, Portugal, Spain and Italy (Castro, 2013). In the views of Klein (2013) the increasing magnitude of NPLs in many Central and Eastern and South Eastern Europe continue to put serious pressure on banks' balance sheet and thereby affecting their lending abilities.

Although, the starting point of the recent crisis was the subprime loan problem of United States of America's mortgage lending, it did spread to other economies around the world but with different levels of severity. In the past most member countries of the Association of Southeast Asian Nations (ASEAN) Economic Community (AEC) have gone through tremendous difficult periods of volatile NPLs. Therefore, the issue of NPLs amongst the ASEAN member countries might be a big challenge that policymakers and regulators need to recognize before, during and after the final take-off of their economic community.

The early research works on NPLs were dominated by investigating the internal procedures of the lending banks in monitoring their loans to ensure that they remain active and not impaired. Therefore the causes of NPLs then were attributed to weaknesses in the structures of the banks to monitor the loans appropriately.

The trends of recent researches are focusing on the bank-specific, industry-specific and/or macroeconomic determinants sequentially. However, the problem of NPLs has remained unanswered and not fully understood due to inconsistencies of the studies. This paper intends to propose a model that can be used to explain the problem and contribute to the literature by introducing a moderating variable of loan monitoring in the relationship between macroeconomic variables and NPLs by using AEC member countries datasets.

The paper proceeds as follows: Section 2 discusses various literatures related to macroeconmic variables and NPLs. Section 3 introduces the moderating variable of loan monitoring and proposed a theoretical framework; attached in Appendix B.

Section 4 presents the likely policy implications. Some conclusions are offered in Section 5.

2. REVIEW OF THE RELATED LITERATURE

This section deals with the review of related literatures on macroeconomic variables and NPLs.

2.1. NPLs

In banking the term NPLs or non-performing assets (NPAs) has been defined by several researchers to mean any loan that its interest and/or principal has be left unpaid for over 90 days. According to Klein (2013) an NPL is a loan on which interest payments and/or principal repayment is not being made for a period of over 90 days. Akinlo and Emmanuel (2014) defined NPLs as loans which for a very long duration of time (over 90 days) stop generating interest income to the banks. In other words they are the total loans that are long overdue with over 90 days, that is, loans left unpaid for over 90 day (Minton et al., 2009).

However, Beck et al. (2015) viewed NPL as a loan that is past-due for more than 90 days. They further stressed that NPL could be a loan that is unlikely to be repaid without recourse to recovery actions such as the sale of obligor's held collateral security, if any.

D'Hulster et al. (2014) suggested that a most accepted definition of NPLs is when obligation related to loans and advances become over 90 days past-due, when the banks consider the borrower is unlikely to pay and when other sort of obligation is past-due by more than 90 days. These are indeed consistence with the IMF Financial Soundness Indicators that put NPLs as positions of non-performing past-due of principal and/or interest over 90 days.

Going by these definitions of different researchers it can then be concluded that NPLs which are sometimes referred to as the NPAs or impaired loans, are all those categories of bank loans that have been left unpaid in terms of interest and/or principal amount of a loan over 90 days. However, this excludes loans that have been realized through recovery efforts such as sales of obligors' securities as well as those that have been restructured.

According to Zeng (2012) NPLs are "financial pollution" which if present in a financial system of a country can be harmful to its economy and social welfare of its citizens. This means that banking system is expected to maintain clean loan books with little or no NPLs but in reality banks do not have an absolute clean loan books. However, the level of NPLs should not be significant otherwise they will contaminate the banking system and negatively affect economies and well-being of citizens. Therefore, NPLs can lead to inefficiency in the banking sector.

Barseghyan (2010) maintained that the existence of NPLs and combined with a delay in government bailouts can lead to persistent decline in aggregate economic activity. It should be noted that governments around the world do come to the rescues of bank through bailouts but usually at the expense of tax payers' funds. However, this should not be encouraged except where it becomes absolutely necessary because governments are expected

through their apex banks to provide close banking supervision of all banks. This should not be limited to mere banks periodic and unscheduled examinations but also through regulatory functions such as adequate prudential guidelines and transparent reporting procedures and sanctions against any deviation by the lending banks.

In other words NPLs are not only expression of low or non-quality of loans but also as measure of qualitative level of the entire loan portfolio of banks (Filip, 2013). Ahmad and Bashir (2013) maintained that the growth of NPLs is connected to inefficiencies and failures of the banks, as well as financial crises in both developed and developing countries.

The lending banks are responsible for all NPLs because statutorily they are debtors to all economic units that make deposits with them. It is expected that the banks will be efficient in the management of their assets to the extent that loans are not allowed to deteriorate in term of their qualities.

2.2. Overview of NPLs of AEC Member States

The global NPL ratio is persistent and on the rise as exhibited by Figure 1 (sourced from World Bank and Bankscope data bases) in Appendix A. The global average of NPL ratios stood at 3.9 in 2005 and went down to its lowest level of 2.8 in 2007 and fluctuated through 2008-2013 and went up to its highest level of 4.3 in 2014. This is a major source of concern to all economies around the world as it increases the global fear of a systemic risk.

The average NPL ratio of ASEAN countries in 2005 was 7.92 and sloped downward from 2006 to 2013 and in 2014 the position of NPL ratios was 1.42. The average NPLs of ASEAN countries were indeed higher than those G7, G8, BRICS countries and the global average from 2005 to 2009 except for 2009 where the NPL ratios of BRICS (5.33) was higher than that ASEAN member states (3.54). In 2010 the relative performance of ASEAN countries grouping compared to other groupings was mixed but the results from 2011 to 2014 has been in favor of ASEAN countries.

The main concern here is the likely contagion effects of global NPLs on AEC member states' banking system. It is very possible that financial crises in one country or region of the world might spill over to other countries as it happened during the recent financial crisis in 2007-2008. Furthermore this postulation is in line with the belief of Aït-Sahalia et al. (2015) on the contagion effects of adverse economic activities among countries. Therefore it is imperative for the economic community to prevent the occurrence of systemic banking crisis among its member countries hence the need for a study that will investigate the moderating effect of loan monitoring on the relationship between macroeconomic variables and NPLs among AEC countries.

2.3. Macroeconomic Determinants of NPLs

There are numerous macroeconomic variables that can determine the level of country's NPLs. The following variables have been adopted by many authors in their investigations of the relationships between macroeconomic variables and NPLs hence they can be used again in the proposed study.

2.3.1. Gross domestic product (GDP) and NPLs

This is an important macroeconomic variable which over the years has played a significant role in determining NPLs and most of the researchers have concluded that there is a significant relationship between GDP and NPLs. Most of the findings on this relationship tend to be inverse and significant (Abid et al., 2014; Ali and Daly, 2010; Castro, 2013). Also, Louzis et al. (2012), Makri et al. (2014), and Zaib et al. (2014) have investigated the relationships and found same results.

However, there is no consistency among researchers on the measurement of GDP in relations to NPLs but they tend to use different measurement for it. Castro (2013) used GDP growth as a measure but Louzis et al. (2012) adopted real GDP growth rate in their study. In a contrary view, Mileris (2012) used real GDP growth rate % in his study of the macroeconomic determinants of loan portfolio credit risk in banks.

For the purpose of this paper we propose the use of real GDP (constant 2005 US$) in determining the relationship between NPLs and GDP. Our expectation is that high growth in GDP will lead to low NPLs as borrowers' capacity to pay back loans will improve.

2.3.2. Inflation and NPLs

The rate of inflation is assumed to have a significant influence on the general price level of goods and service in a particular economy which might also include the prices of bank loans. This assumption might be true especially if expected inflation is not factored in the pricing of the loans (Demirgüç-Kunt and Detragiache, 1998). Among the contributors to the relationship between inflation and NPLs variables (Bohachova, 2008; Abid et al., 2014; Demirgüç-Kunt and Detragiache, 1998; Makri et al., 2014).

There is no agreement on a single measurement of inflation among researchers. Abid et al. (2014) used rate of inflation as a tool of measuring its relationship with NPLs which is in conformity with the position of Demirgüç-Kunt and Detragiache (1998) that also made use of rate of inflation. However, Bohachova (2008) proxied annual rate of inflation with unweighted average of consumer price index (CPI).

However, for the purpose of the proposed study this paper recommends the adoption of rate of change of CPI in measuring inflation, because it gives a fair reflection of purchasing power of the customers and loans repayment abilities of banks borrowing customers.

2.3.3. Interest rate and NPLs

This is a major factor in banking system because it is the driving force of banks deposits and loans hence an important variable in analyzing loan performance of banks (Castro, 2013). The relationship of interest rate and NPLs has attracted the highest consideration among researchers as well as controversies thereby rendering finding inconclusive. Notable among these researchers are (Ali and Daly, 2010; Abid et al., 2014; Bellotti and Crook, 2009; Glen and Mondragón-Vélez, 2011; Goel and Hasan, 2011; Louzis et al., 2012; Pesola, 2011; Vogiazas and Nikolaidou, 2011; Zaib et al., 2014).

However, Glen and Mondragón-Vélez (2011) and Louzis et al. (2012) considered real lending rate as a proxy for interest rate. In a different view Castro (2013) used three components for measuring interest rate, thus: Use the long-term interest rate, the real interest rate and the spread between the long and short-term interest rates. In contrast Yurdakul (2014) opted for nominal deposit interest rate as a measurement of interest rate. Demirgüç-Kunt and Detragiache (1998) in a study they conducted on the determinants of banking crises in developing and developed countries they used real interest rate as one of the independent variables. The use real interest rate was equally adopted by (Fofack, 2005).

This paper suggests the use of real (prime) lending interest rate because of the peculiarity of the proposed study that should be based on AEC member states/panel data using country as unit of analysis.

2.3.4. Foreign exchange rate and NPLs

The relevance of exchange rate on bank loans becomes pronounced in three different ways, thus: Foreign currency denominated loans, international trade and a highly import or export dependent economy. Major contributors to the literature of this variable to NPLs (Otani et al., 2009; Beck et al., 2015; Castrén et al., 2008; Yurdakul, 2014).

Alhassan et al. (2014) adopted real exchange rate as a measurement in their study of investigating the determinants of assets quality of Ghanaian banks during financial crisis period. In addition Castrén et al. (2008) accepted the real exchange rate as measurement of foreign exchange rate.

However, Otani et al. (2009) made use of the nominal effective exchange rate in the measurement of foreign exchange rate. Also Beck et al. (2015) used nominal effective exchange rates in their study of the determinants of NPLs. However, a straight line exchange rate was chosen by Yurdakul (2014) in his study of macroeconomic modeling of credit risk for banks which also tallies with the measurement adopted by Castrén et al. (2008). This paper recommends the adoption of nominal effective exchange rate as a measure of foreign exchange rate which is in tandem with views of Otani et al. (2009) and Beck et al. (2015).

2.3.5. Unemployment rate and NPLs

Unemployment rate variable has been used by a significant number of studies probably due to its connection to business activities of economies which impact on demand of goods and services, and any possible rise of unemployment reduces households' disposable income and their ability to repay their debts (Quagliariello, 2007). The assumption here is that gainful employment accords various economic units' opportunities to not only consume but also to save and invest the surplus in banks. Louzis et al. (2012) maintained that bank borrowers with low incomes have higher rates of default due to increased risk of facing unemployment and being unable to settle their obligation. Their position was equally supported by other researchers (for example, Akinlo and Emmanuel, 2014; Alhassan et al., 2014; Castro, 2013; Klein, 2013; Makri et al., 2014; Mileris, 2012; Quagliariello, 2007; Yurdakul, 2014; Zaib et al., 2014).

However, there are divergent views among researchers on how to measure unemployment against NPLs. Mileris (2012) concentrated on the use of long-term unemployment rate % as a yard stick of measuring unemployment in relation to loan portfolio credit risks in banks. His position was strengthened by Castro (2013) where he also adopted unemployment rate % as a measure of unemployment. Louzis et al. (2012), Alhassan et al. (2014), Klein (2013) and Yurdakul (2014) adopted the change in the unemployment rate as a measurement. Zaib et al. (2014) measured unemployment as the percentage of unemployed people to total population in a particular year.

In line with the views of the studies of Louzis et al. (2012), Klein (2013), Alhassan et al. (2014), and Yurdakul (2014). This paper proposes the adoption of a change in the unemployment rate as a means of measuring unemployment rate in relation to NPLs.

In as much as these macroeconomic variables can adversely affect the NPLs the lending banks, regulatory authorities and policymakers can do so much in ameliorating such effects thereby protecting banks risks assets. The lending banks can depend significantly on loan monitoring activities in ensuring that their loans remain active. However, banks and/or countries that have low ratios of NPLs can also depend on loan monitoring in sustaining their good positions such as the case of the AEC countries.

3. THE MODERATING ROLE OF LOAN MONITORING

The function of loan monitoring is an integral part of quality credit that should ensure credit facilities remain within the performing loan circle, that is, the days of past-due obligation should be or less than 90 days. It is a system of bank control over the entire process of lending, which is usually manifested in the constant control of the passage of individual loans, as well as the quality of the entire loan portfolio.

Banks like any other profit oriented firms are expected to achieve various goals. Some of these goals comprise those of creating conducive atmosphere of ensuring the safety of depositors' funds, making loanable funds available to the real sector of the economy and meeting the expectations of other stakeholders. For the banks to achieve their goals there is the need to put in place structures that will keep loans active to the extent that depositors' funds and shareholders equities will not be impaired. Notable among these structures are the internal control mechanisms designed to ensure appropriate and transparent procedure for credit appraisals, objective approvals of loan applications and proper credit administration of all disbursed funds.

There are good numbers of researches on loan monitoring activities but there are disagreements among researchers on which action constitutes loan monitoring. According to Aremu et al. (2010) loan monitoring which is the work of the relationship manager and in most cases is optional but a must function for effective and efficient credit (loan) administration in the banking sector.

The essence of every monitoring is to ensure full compliance with the loan agreement such as ensuring that the loan is being used for the eligible purposes, the quality of the loan will be maintained in the future and its repayment sources are protected in order to guard against unacceptable deterioration of the credit. Strahan (1999) argued that once a loan is made, banks monitor the actions of borrowers to protect their investment. In practice, monitoring comes down to refusing to renew a revolving loan that has reached its maturity or "calling" a loan early when a borrower has failed to meet the terms of the loan contract, restructuring the loan with the consent and cooperation of the distressed borrowers, and efficiently salvaging collateral when borrowers default.

There are various tools that are used by banks in monitoring loans; notable among them are transaction account monitoring, relationship management, regular reporting requirements, loan covenants, loan stress testing as well as internal credit rating and scoring. There are quiet numbers of researchers that advocated the adoption of loan monitoring by the lending banks (for example, Mester et al., 2007; Aremu et al., 2010; Intrater, 2002; Nakamura, 1991; Treacy and Carey, 2000; Nakamura and Roszbach, 2013).

Nakamura (1991) argued that information on borrowers transactions that are mostly obtained first hand from their accounts puts the lending banks at adavntage position that they get their loans repaid as much as possible within the terms of the loan contracts. He further emphasised that banks make use of such information in making decision to make commitment on new laons and to monitor existing loans as well as deciding on what to do with troubled loans. This position was supported by Mester et al. (2007) by suggesting that transaction account monitoring helps financial intermediaries to to monitor their borrowers.

Treacy and Carey (2000) proposed an internal credit risk rating as a tool of credit risks management (loan monitoring). They also suggested that such rating should clearly reflect probability of default and be for ineternal uses that can trigger administrative actions against deteriorated loan qualitiess. Their position was also shared by Aremu et al. (2010) on the use of credit rating and/or scoring. However, Nakamura and Roszbach (2013) maintained that credit bureau ratings do not only predit movements in banks ratings but also improve forecasts of bankruptcy and also loan defaults. Additionally, Nakamura and Roszbach suggested that banks' credit ratings of borrowers has more capacity of forecasting the likelihood of loan default because the information contained in credit bureau ratings is already embedded in the bank rating.

Intrater (2002) argued in favour of loan monitoring through stress testing the commercial loans portfolios. He identified some of the areas that stress testing of the loans should be conducted to be based on macroeconomic factors such as interest rates, energy or unemployment.

The paper argues that adverse changes in the macroeconomic environment of the banking sector can be checked through bank loan monitoring functions by adopting any of the aforementioned monitoring tools. This can be useful to banks and/or countries that have high ratios of NPL or low ratios of NPLs. However, it is imperative to investigate the moderating role of bank loan monitoring on the effects of macroeconomic variables and NPLs. Therefore, there is the need to empirically evaluate the moderating effect of loan monitoring on relationship between macroeconomic variables and NPLs with the hope that the findings could have relevance on the implementation of ASEAN Banking Integration Framework (ABIF).

4. POLICY IMPLICATIONS

The policy implications will be based on the outcome of the proposed research on the moderating role of loan monitoring on the relationship between macroeconomic variables and NPLs in AEC countries. If empirical evidence establishes the moderation effects then the policy implication will be both for the bank management and regulators. The banks managements will be expected to pay more attention loan monitoring activities by incorporating it into Key Performance Indicators of all staff regardless of their specific functions in the bank. Credit officers, credit managers and relationship staff should also be made to take full responsibilities of all credit-relationships under their individual portfolios.

Furthermore banking regulatory authorities should improve prudential guidelines to the extent that loan monitoring activities of the bank will be incorporated into compliance and disclosure lists. Therefore none compliance should also be met with restrictions on banks' right to create more loan.

5. CONCLUSIONS

This paper proposed that loan monitoring will significantly have a positive moderation effect on the relationship between macroeconomic variables and NPLs as illustrated in Appendix B. As stated earlier there is the need for this proposed research to be conducted in AEC countries as it might be relevant to them as they prepare for full implementation of the ABIF. Therefore, for the successful implementation of the ABIF there is the need for the member countries to understand the role of loan monitoring in moderating the impact of macroeconomic shocks on NPLs. This is essential in order to ensure the resilience of their banking systems against any shock or banking/financial crisis that might arise from the integration.

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APPENDIX

APPENDIX-A

Appendix Figure 1: Comparative analysis of average NPL ratios of ASEAN, G7, G8, BRICS and GLOBAL countries
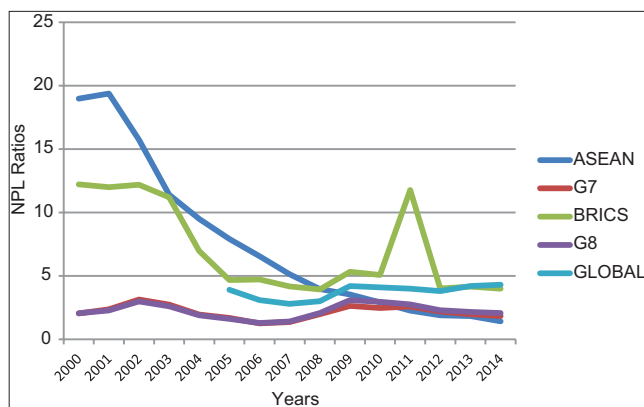
Source: Bankscope and authors' calculations (2015)

ASEAN Countries: These are Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam (Note: Only Indonesia, Malaysia, Philippines, Singapore and Thailand datasets were used due to missing values in other countries).

BRICS Countries: Means five major emerging national economies of Brazil, Russia, India, China and South Africa.

G7: Means seven major advanced economies of Canada, France, Germany, Italy, Japan, United Kingdom and United States.

G8: Means eight highly industrialized nations of Canada, France, Germany, Italy, Japan, Russia, United Kingdom and United States.

GLOBAL: World average.

APPENDIX-B

Theoretical Framework