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Loan Loss Provisions and Lending Behaviour of Banks: Asian Evidence during 1992-2009

Wahyoe Soedarmono
World Bank

Amine Tarazi
Université de Limoges, LAPE

Agusman Agusman *
Bank Indonesia

Gary S. Monroe
University of New South Wales

Dominc Gasbarro
Murdoch Univesity

Abstract

Effects of loan loss provisioning on lending behaviour of banks remain a major concern in policy circles in order to strenghten both bank stability and financial intermediation. A sample of 686 commercial banks in Asian countries over the 1992-2009 period is used to identify factors contributing to the occurence of a procyclical effect of loan loss provisions on loan growth. Our empirical results highlight that non-discretionary provisions have a procyclical effect, as higher non-discretionary provisions reduce loan growth of banks. This procyclical effect holds for large banks but not small banks. A closer investigation shows that bank market structure, economic development and institutional quality also affect the link between non-discretionary provisions and loan growth of banks. More specifically, higher bank competition, higher per capita income and higher rule of law mitigate the procyclical effect of non-discretionary provisions on loan growth regardless of whether banks are large or small. These findings have policy implications concerning the adoption of the dynamic provisioning system for Asian banks.

Key words: loan loss provisions, loan growth, dynamic provisioning system, Asian banks
JEL classification: G10, G14, G21, G28

* Corresponding author: Bank Indonesia, Directorate of Banking Research and Regulation, Jl. M.H. Thamrin No.2, Jakarta, Indonesia, Phone (62-21) 3818075, Fax (62-21) 3518629. Email: agusman@bi.go.id

1. Introduction

During the last three decades, financial crises in both developed and developing countries were mostly preceded by strong macroeconomic performance that boosted risk taking and speculative bubbles, including the banking sector. Weak bank credit risk management during economic boom periods contributed to various financial turmoils; the 1980 US saving and loan crisis, the 1994/1995 Mexican crisis, the 1997/1998 Asian crisis, the 1998 Russian crisis, and the 2008 credit crisis that led to a prolonged global economic downturn. Such crises again suggest the increasing needs for a sound credit risk management in banking that does not induce a procyclical effect. Banks tend to underestimate credit risks during cyclical upturns, but overestimate them during cyclical downturns These actions reduce loan availability and deepens economic recessions.

Eventually, overcoming the procyclicality of bank credit risk management becomes one of the key issues in the new Basel accords, particularly related to bank capital regulation. Studies of banks' procyclical behaviour have been conducted through two major channels. The first strand of literature focuses on the impact of macroeconomic fluctuation on banks' capital buffer to examine whether capital buffer is procyclical over business cycles. In this regard, banks are substantially required to fulfill minimum capital adequacy ratios in order to cope with credit risk. Since capital requirements are based on risk, banks tend to increase capital buffer and reduce loans during a cyclical downturn due to banks' risk-aversion. The second strand of literature explores the effect of macroeconomic fluctuation on bank loan loss provisions and how provisioning affects lending behaviour in banking.

In spite of a growing literature focusing on the first strand (e.g. Ayuso et al, 2004; Borio et al, 2001, Jokipii and Milne, 2008; among others), very limited attention has been given to the second strand, particularly in the case of developing countries. The objective of this paper is, therefore, to extend previous literature on the procyclicality of bank loan loss provisions. Our contribution is twofold. First, we investigate the link between loan loss provisions and lending behaviour of banks in developing countries, focusing on Asian countries. Second, we examine several factors that may affect the impact of loan loss provisions on loan growth in banking. More specifically, we examine the influence of bank-specific and country-specific factors.

To the best of our knowledge, this paper is among the first to study the link between loan loss provisions and loan growth of banks in an Asian context.[1] There are three major reasons why Asian banking is considered. First, bank credit is the predominant source of financing for private sector businesses in Asia and, therefore, unsound credit risk management in banking can exacerbate financial disintermediation during a cyclical downturn (Adams, 2008; Angkomkliew et al., 2009). Second, interest conflicts between bank regulators and investors can also occur in Asian banks if banks only rely on loan loss reserves to deal with credit risks. Specifically, Agusman et al. (2009) document that higher loan loss reserves tend to reduce bank stock returns. Third, the loan loss provisioning system varies across Asian countries. While the procyclicality of loan loss provisions became a major issue after the 1997 crisis, there is still considerable debate regarding the implementation of the dynamic provisioning system.[2] Therefore, this study is important because it contributes to the ongoing discourse on the implementation of the dynamic provisioning system in order to overcome the procyclical behaviour of Asian banks. This study also sheds light on bank-specific and country-specific factors that may influence the effect of loan loss provisions on loan growth. Accordingly, this study allows us to determine conditions in which the adoption of the dynamic provisioning system is urgently required.

Over the 1992-2009 period, we collect data for a sample of 686 commercial banks from 12 Asian countries that were affected by the 1997/1998 crisis. Following Soedarmono et al. (2011), who study Asian banks, such countries include China, Hong Kong, India, Indonesia, Malaysia, Sri Lanka, South Korea, Taiwan, Thailand, Pakistan, Philippines, and Vietnam.

Empirical results from a dynamic panel data methodology show that higher bank loan loss provisions, particularly non-discretionary ones, reduce bank loan growth, highlighting the importance of the dynamic provisioning system for Asian banks. Such evidence is, however, dependent on bank-specific and country-specific factors.

[1] Only Bouvatier and Lepetit (2010) have studied the link between loan loss provisions and loan growth of banks in different group of countries including East Asian countries. However, they only examine the link in a general context and do not further assess whether such a relation is bank-specific or country-specific.

[2] See Angklomkliew et al (2009) for further review on the current loan loss provisioning system in various Asian countries in order to respond the 1997/1998 crisis. Moreover, it is also shown that only a few countries have implemented a forward-looking provisioning system.

Specifically, such an effect disappears in small banks, while macroeconomic environments such as higher bank competition, higher economic development and better institutional quality can mitigate the negative effect of loan loss provisions on loan growth in all banks.

The rest of this paper is structured as follows. Section 2 reviews the existing literature on the use of loan loss provisions for bank credit risk management and its implications. Section 3 describes our data and methodology. Section 4 discusses empirical results and presents the robustness checks, while Section 5 concludes the paper.

2. Literature review and research focus

In order to overcome expected credit risk, banks mainly focus on the use of loan loss provisions as a prudential device. However, loan loss provisions can be procyclical with the business cycle as loans are likely to default during a cyclical downturn. This, in turn, increases banks' risk aversion that boosts loan loss provisions (Altman, 2005).

From an accounting perspective, there are two types of provisions for bank credit risk: specific and general provisions (Cortavaria et al., 2000). While specific provisions deal with identified impaired loans that increase loan loss reserves, general provisions are associated with a broad assessment of possible future losses on the entire bank portfolio. As banks must estimate general provisions, they might be influenced by subjective judgements related to managers' discretionary behaviour.

The literature documents that general provisions can be further partitioned into non-discretionary and discretionary components. On the one hand, non-discretionary provisions cover expected credit risks and are considered as a backward-looking component (Whalen, 1994; Beaver and Engel, 1996). On the other hand, the discretionary component is associated with the use of loan loss provisions for managerial objectives. Specifically, the discretionary component is linked to three discretionary actions consisting of capital management, income smoothing and signalling (Ahmed et al., 1999; Lobo and Yang, 2001).

Moreover, the Basel definition of capital has emphasized that part of general provisions counts as capital. When loan losses are excessive during a cyclical downturn, increases in loan loss provisions can be inadequate to cover expected loan losses. Such

loan losses can erode bank capital and may, in turn, adversely affect banks' incentive to grant new loans, exacerbating a cyclical downturn. This situation is often referred to as "capital crunch" and has been documented in the literature related to bank capital requirements (e.g. Bernanke and Lown, 1991; Peek and Rosengren, 1995).

Likewise, previous studies have documented that the current bank provisioning system is, indeed, procyclical. Laeven and Majnoni (2003) point out that the procyclicality of loan loss provisions can have a negative impact of loan growth, economic growth or earnings. In a cross-country setting, Cavallo and Majnoni (2002) and Laeven and Majnoni (2003) find a negative link between economic growth and loan loss provisions. Similarly, Bikker and Metzemakers (2005) also document similar evidence for OECD countries. In a single country setting, Arpa et al. (2001) document the procyclicality of bank loan loss provisions over economic growth in Austria, while Fernandez de Lis et al. (2001) and Pain (2003) document similar results for Spanish and UK banks, respectively. Only Craig et al. (2006) and Angklomkliew et al. (2009) focus on Asian banks and, again, report identical results.

In order to overcome the procyclicality of loan loss provisions, a sound provisioning system becomes essential in bank credit risk management and should be considered in any regulations on bank capital requirements (Cavallo and Majnoni, 2002; Banque de France, 2001). A sound provisioning system can avoid credit risk miscalculation in a cyclical downturn due to disaster myopia (Guttentag and Herring, 1984), herd behaviour (Rajan, 1994), or institutional memory hypothesis (Berger and Udell, 2003).

Fernandez de Lis et al. (2001) propose a dynamic or statistical provisioning system that may solve procyclicality issues. The statistical provisions are not addressed to substitute a specific provision but to complement the loan loss provisioning system. Specific and general provisions are built in line with the traditional procedure. Meanwhile, the statistical provisions are calculated from the difference between expected loan losses and specific provisions. The expected loan losses are computed using either a bank's internal model or a standardized approach established by bank regulators. As the statistical provisions are built to anticipate risks due to business cycle fluctuations, the

statistical provisions tend to increase during a cyclical upturn in order to anticipate a cyclical downturn in the future.

Although the statistical provisions also increase in a cyclical downturn, the funds obtained from "reserves" generated by the statistical provisions in the earlier period of economic boom can smooth bank profits and losses. This mechanism improves the measurement of bank profits and diminishes earnings volatility. The correlation between the non-discretionary component of loan loss provisions and loan fluctuations can be offset by the statistical provisions. Moreover, incorporating the statistical provisions into a bank provisioning system can mitigate banks' incentive to grant new loans when expected credit risks are underestimated, particularly during a cyclical upturn.

Borio et al. (2001), Mann and Michael (2002), and Jiménez and Saurina (2005) support Fernandez de Lis et al.'s (2001) contention that the procyclicality of bank loan provisions can be resolved, as long as banks can improve credit risk evaluation and profit management in their provisioning system. To investigate the importance of the dynamic provisioning system that takes into account the statistical provisions measurement, Bouvatier and Lepetit (2008) are the first to disentangle bank loan loss provisions into non-discretionary and discretionary provisions. They use European banks to analyze the implications on loan growth.. Non-discretionary provisions have a procyclical effect on loan growth in European banks. The adoption of the dynamic provisioning system incorporating the statistical provisions becomes necessary to offset shortcomings on non-discretionary provisions.

Nevertheless, each bank has different characteristics that may determine the effectiveness of the dynamic loan loss provisioning system. Similarly, each country also has different macroeconomic and institutional environments and, thus, the capacity of a country to adopt the dynamic provisioning system may vary. In spite of the importance of bank-specific and country-specific factors, there is no study that examines whether the implications on bank lending behaviour of the loan loss provisioning system are bank- or country-specific.

This present study extends the previous literature by focusing specifically on Asian countries and by examining whether the link between non-discretionary provisions and loan growth in banking is bank- or country-specific. We follow the method used by

Bouvatier and Lepetit (2008) in differentiating discretionary and non-discretionary provisions, but we consider bank- and country-specific factors when examining the effect of both provisioning components on loan growth in banking. The bank-specific factor examined in this study focuses on bank asset size, while country-specific factors include bank market structure, economic development and institutional quality.

Bank asset size is an important dimension in bank credit risk management because large banks are more prone to be "too big to fail" and to have moral hazard problems (Mishkin, 2006; Kane, 2000). During economic boom periods, large banks are less likely to increase loan loss provisions to anticipate unexpected credit risk because they believe that the government will rescue them in case of failure. Consequently, non-discretionary provisions that only increase in response to higher non-performing loans during a cyclical downturn, may, in turn, adversely affect lending activities in large banks.

With regard to macreconomic environments, financial crises that have been preceded by lending booms provide an important insight regarding the role of bank market structure. According to Ogura (2006), bank competition for borrowers may boost loans because competing banks tend to underprice their lending rate and thus, credit risks are underestimated. Therefore, the relation between loan loss provisions and loan growth of banks can be dependent on bank market structure. Moreover, Goddard et al. (2011) show that banks in developing countries, such as the Asian and Sub-Saharan African countries, have weaker profit persistence than banks in developed countries in Western Europe and North America. In this regard, the level of economic development can affect the procyclical effect of loan loss provisions on loan growth of banks through the earnings management channel. Banks in environments with higher levels of economic development could be less prone to procyclicality because they can smooth earnings volatility due to the dynamism of the economy. Finally, we consider the role played by institutional quality related to shareholders' protection. Higher institutional quality is more likely to mitigate the procyclical effect of bank loan loss provisions on bank loan growth during a cyclical downturn. Prior empirical literature also document that strong institutional development can empower investors to enforce and monitor their contracts,

which, in turn, positively affect economic development along with higher loan availability (Haselmann et al., 2010).

3. Data and methodology

3.1. Data source

From BankScope Fitch IBCA, we initially construct an unbalanced panel of annual bank-level data from 686 commercial banks in 12 countries in Asia covering the 1992- 2009 period. These countries include China, Hong Kong, India, Indonesia, Malaysia, Sri Lanka, South Korea, Taiwan, Thailand, Pakistan, Philippines, and Vietnam. Moreover, we incorporate country-specific data such as real gross domestic product, lending rate and inflation rate, retrieved from the International Financial Statistics. We further incorporate country-level data from the Financial Structure Database established by Beck and Demirguc-Kunt (2009), as well as country-level data on institutional quality that come from Kaufmann et al (2010).

3.2. Methodology

As stated earlier, the objective of this study is twofold. First, we examine the link between loan loss provisions and loan growth in banking by differentiating discretionary and non-discretionary provisions. Second, we examine whether bank-specific and country-specific factors affect the link. For such purposes, estimations are conducted in four stages.

In the first stage, we model the determinants of bank loan loss provisions. In order to closely examine bank-specific factors associated with asset size, we consider three models according to: (1) all banks, (2) large banks, and (3) small banks.[3]

In the second stage, we estimate discretionary provisions and non-discretionary provisions from the three models established in the first stage. Thus, we obtain three pairs of the loan loss provision components (discretionary and non-discretionary provisions). Each pair represents discretionary and non-discretionary provisions estimated within each

[3] We define large banks as banks with total assets greater than US$ 1 billion, while small banks are banks with total assets less than US$ 1 billion.

bank sample. Phrased differently, each bank sample has different values for discretionary and non-discretionary provisions.

In the third stage, we examine the effect of loan loss provisions, particularly non-discretionary ones, on bank loan growth. Again, we conduct analyses with respect to the three different bank samples. As a result, we can determine whether the effect of non-discretionary provisions on loan growth in large banks is similar to that in small banks.

In the fourth stage, we repeat the third stage, but we now incorporate country-specific variables and their interaction terms with non-discretionary provisions. Country-specific variables introduced in this stage are bank market structure, economic development and institutional quality.

3.2.1. The determinant of bank loan loss provisions

In the first stage, we establish the loan loss provisions equation in which the ratio of loan loss provisions to total loans (*LLP*) is used as the dependent variable. The loan loss provisions consist of two components; non-discretionary and discretionary.

To capture the non-discretionary component, we use several indicators. Following Ahmed et al. (1999) and Bouvatier and Lepetit (2008), we consider the ratio of non-performing loans to total loans (*NPL*). In addition, we incorporate the actual changes in the ratio of non-performing loans to total loans (*DNPL*). Specifically, *DNPL* is defined as follows: $DNPL_{i,t} = \left(NPL_{i,t+1} - NPL_{i,t}\right)$. Both of these measures are expected to positively affect bank loan loss provisions, since these provisions are used to cover expected credit risks. We also include the ratio of total loans to total assets (*LOAN*) as another non-discretionary component. The variable *LOAN* is expected to have a positive relation with the loan loss provisions, since loan portfolios are one of the sources of bank credit risk. As bank loss provisions can be procyclical with the business cycle, we also incorporate the growth rate of real per capita gross domestic product (*GDPG*). A negative coefficientindicates that *LLP* is procyclical, while a positive sign indicates that *LLP* is counter-cyclical with the business cycle.

With respect to the discretionary component of *LLP*, we employ three measures to capture capital management, income smoothing and signalling hypotheses. To capture the capital management hypothesis, we follow Bikker and Metzemakers (2005) using the

ratio of total equity to total assets. To assess the income-smoothing hypothesis, we follow Anandarajan et al. (2006) using the ratio of earning before taxes and loan loss provisions to total assets (*EBT*). Finally, to assess the signalling hypothesis, we use the one-year-ahead change in the ratio of earnings before taxes and loan loss provisions to total assets (*SIGN*), following Anandarajan et al. (2006) and Bouvatier and Lepetit (2008). Specifically, *SIGN* is defined as follows

$$SIGN_{i,t} = \left(ER_{i,t+1} - ER_{i,t}\right) / 0.5\left(TA_{i,t+1} + TA_{i,t}\right)$$

ER is earning before tax and loan loss provisions, while *TA* is total assets.

In order to account for different macroeconomic environments, we incorporate the real gross domestic product growth rate (*GDPG*) in the loan loss provisions equation. *GDPG* is the heart of the procyclicality of bank loan loss provisions. If bank loan loss provisions are procyclical, we should observe a negative relationship between *GDPG* and the loan loss provision measures. We also include the one year-lagged *LLP* as one of the explanatory variables in order to take into account the dynamic adjustment of *LLP*.

Based on the above discussion, the general model for the first stage regression for each bank *i* at time *t*, can be expressed as follows:

$$\begin{aligned} LLP_{i,t} = {} & \alpha_0 LLP_{i,t-1} + \alpha_1 DNPL_{i,t} + \alpha_2 NPL_{i,t} + \alpha_3 LOAN_{i,t} + \alpha_4 GDPG_t \\ & + \alpha_5 CAP_{i,t} + \alpha_6 EBT_{i,t} + \alpha_7 SIGN_{i,t} + \alpha_8 + \varepsilon_{i,t} \end{aligned} \quad (1)$$

All bank-level data for variables used in Equation (1) are retrieved from BankScope Fitch IBCA, while all macroeconomic data come from the International Financial Statistics (IFS) database established by the International Monetary Fund.

Again, it is important to note that we estimate Equation (1) with respect to three different bank samples (all banks, large banks, and small banks). Therefore, the regression equation constructed from Equation (1) differs across different bank samples.

3.2.2. Computing discretionary and non-discretionary provisions

In the second stage, we compute the estimated value of discretionary and non-discretionary provisions based on Equation (1). More specifically, discretionary provisions (*DISC*) are estimated using the following equation

$$DISC_{i,t} = \alpha_5 CAP_{i,t} + \alpha_6 EBT_{i,t} + \alpha_7 SIGN_{i,t} \quad (2)$$

In addition, the non-discretionary provisions (*NDISC*) equation is defined as

$$NDISC_{i,t} = \alpha_0 LLP_{i,t-1} + \alpha_1 DNPL_{i,t} + \alpha_2 NPL_{i,t} + \alpha_3 LOAN_{i,t} + \alpha_4 GDPG_t \quad (3)$$

As we estimate Equation (1) based on three different bank samples, we obtain values of *DISC* and *NDISC* for all banks, large banks and small banks.

3.2.3. The effect of loan loss provisions on loan growth of banks

In the third stage, we assess the effect of bank loan loss provisions for both non-discretionary and discretionary provisions on bank loan growth. Following Bouvatier and Lepetit (2008), bank loan growth (*DLOAN*) is defined as the actual change in the ratio of total loans to total assets. More precisely, bank loan growth is assessed by

$$DLOAN_{i,t} = \left(L_{i,t} - L_{i,t-1}\right) / 0.5\left(TA_{i,t} + TA_{i,t-1}\right)$$

L is defined as total loans. Next, we examine several explanatory variables that may affect *DLOAN*. First, we incorporate the non-discretionary component of loan loss provisions (*NDISC*). *NDISC* is a linear combination from *DNPL*, *NPL*, *LOAN*, and *GDPG* whose coefficients are estimated using Equation (1). Second, we include the discretionary component of loan loss provisions (*DISC*) as an explanatory variable in the bank loan growth equation. *DISC* is the linear combination from *CAP*, *EBT* and *SIGN* whose coefficients are also computed from Equation (1).

To control for bank-specific variables, we include the capital adequacy ratio (*CAP*) as used in Equation (1) and the growth rate of deposits (*DDEPO*). Following Lepetit et al. (2008), *DDEPO* is defined as follows:

$$DDEPO_{i,t} = \left(D_{i,t} - D_{i,t-1}\right) / 0.5\left(TA_{i,t} + TA_{i,t-1}\right)$$

D represents total deposits. Moreover, we incorporate several variables to control for the macroeconomic environment that may influence *DLOAN*, such as the growth rate of real per capita gross domestic product (*GDPG*), the lending rate (*LRATE*) and the inflation rate (*INF*). *LRATE* and *INF* data are retrieved from the IFS database. The one year-lagged *DLOAN* is also included as an explanatory variable because loan growth at time *t* can be influenced by loan growth in the earlier period. Accordingly, the general model for the second stage is as follows

$$DLOAN_{i,t} = \beta_0 DLOAN_{i,t-1} + \beta_1 NDISC_{i,t} + \beta_2 DISC_{i,t} + \beta_3 CAP_{i,t} + \beta_4 DDEPO_{i,t} + \beta_5 GDPG_t + \beta_6 LRATE_t + \beta_8 INF_t + \gamma_{i,t} \quad (4)$$

To this end, it is important to note that Equation (4) is also estimated with respect to three different bank samples. In terms of econometric methodology, we apply a dynamic panel data model using the two-step Generalized Method of Moments (GMM) estimator following Blundell and Bond (1998) with Windmeijer's (2005) finite sample correction. In this study, a dynamic panel data analysis is intuitively more accurate than a static panel data analysis with fixed/random effects because bank loan loss provisions and loan growth vary over time and their value at time *t* is more likely to be influenced by their value at time $t-1$.

The two-step GMM estimators are valid when they fulfill two conditions. First, there is no second-order serial correlation between residual terms of the first-differenced equation. Second, the over-identifying restrictions of instruments are valid. More specifically, the model is valid when the AR (2) test and the Hansen-J test are both insignificant. To account for robustness, we implement the orthogonal deviations transformation of instruments, which account for bank-level fixed effects, and the first difference transformation of instruments which do not. Both transformations are applied to estimate Equation (1) and (4) with respect to the three different bank samples.

It is crucial to highlight that Equation (1) and (4) above should be estimated consistently using the similar method with respect to three different bank samples. For example, within each bank sample, when we consider the orthogonal transformation of instruments in Equation (1), then Equation (4) should also be estimated by considering the orthogonal transformation of instruments. The similar approach is implemented when we consider the first difference transformation of instruments.

3.2.4. The role of country-specific environments

In order to examine whether the link between non-discretionary provisions and loan growth at banks is dependent on country-specific factors, we incorporate an interaction term into Equation (2) as follows:

$$DLOAN_{i,t} = \beta_0 DLOAN_{i,t-1} + \beta_1 NDISC_{i,t} + \beta_2 DISC_{i,t} + \beta_3 CAP_{i,t} + \beta_4 DDEPO_{i,t} + \beta_5 GDPG_t + \beta_6 LRATE_t + \beta_8 INF_t + \beta_9 CS_t + \beta_{10} CS_t * NDISC_{i,t} + \gamma_{i,t} \quad (5)$$

CS represents the three measures of country-specific factors. These include the ratio of total assets of the three largest banks over the total assets of the banking system (*CR3*) to account for bank market structure. These data come from Beck and Demirguc-Kunt (2009). We also consider the influence of economic development measured by the real per capita GDP (*GDPCAP*), which is retrieved from the IFS database. Finally, we incorporate the rule of law index (*RLAW*) to account for institutional quality. *RLAW* is retrieved from Kaufman et al (2010).

4. Empirical results

4.1. Descriptive statistics

Table 1 reports the descriptive statistics of all variables used in this study. All variables are also grouped based on bank sample categories. From the descriptive statistics, small banks exhibit higher non-performing loans (*NPL*) and higher actual change in non-performing loans (*DNPL*) than large banks and, thus, small banks hold higher loan loss provisions than large banks. Differentiating banks with respect to their asset size can highlight that banks use loan loss provisions for non-discretionary purposes. In terms of discretionary purpose, small banks hold higher *EQTA*, higher *SIGN*, but lower *EBT* than large banks. As small banks have higher *LLP* than large banks, this may again highlight that small banks use *LLP* for capital management and signalling purposes, but it is less likely for income smoothing purposes. These initial observations highlight differences between small banks and large banks. Differentiating large banks and small banks is thus necessary in this regard.

[Insert Table 1 here]

4.2. Regression results

4.2.1. The determinants of bank loan loss provisions

In the first stage, we estimate Equation (1) to obtain coefficients related to the non-discretionary and discretionary components of loan loss provisions. Table 2 reports our estimation outputs.

[Insert Table 2 here]

From Table 2, we show that *CAP* and *SIGN* are positively linked to *LLP*. This suggests that Asian banks use loan loss provisions for the capital management and signalling discretionary purposes. Meanwhile, *EBT* is negatively linked to *LLP*, suggesting that Asian banks do not use loan loss provisions for income smoothing purposes. These results are consistent across different bank samples regardless of whether we use the orthogonal transformation or the first difference transformation of instruments.

We also document that higher *NPL* results in higher *LLP* as expected. This indicates that Asian banks use *LLP* for non-discretionary purposes; they are required to increase provisions when impaired loans are observed. This result is similar across all three bank samples regardless of the transformation method of instruments used. However, *LOAN* does not influence bank loan loss provisioning decisions across the three different bank samples. Furthermore, *DNPL* only positively affects loan loss provisions in small banks. In this case, the use of loan loss provisions for non-discretionary purposes is more pronounced in small banks than large banks, because the coefficients of *NPL* and *DNPL* are only significant in the small bank sample. With regard to the business cycle, only small banks exhibit a positive relation between *GDPG* and *LLP*. This highlights that the *LLP* in small banks is counter-cyclical with the business cycle. The fact that *LLP* is counter-cyclical in small banks this suggests that small banks are more forward-looking than large banks and, therefore, we expect that non-discretionary provisions in small banks do not exacerbate lending activities. Next, we examine whether this argument is correct.

4.2.2. The impact of loan loss provisions on loan growth of banks

In this stage, we assess the effect of discretionary and non-discretionary provisions on loan growth of banks. Table 3 reports our estimation results.

[Insert Table 3 here]

Table 3 shows that in the all bank sample, there is a negative link between *NDISC* and *DLOAN* suggesting that non-discretionary provisions tend to reduce loan growth of banks. This is because during economic boom periods, weak specific provisions increase banks' incentives to expand credit activities. However, such behaviour does not allow banks to anticipate a cyclical downturn, so that banks tend to build loan loss provisions when impaired losses are identified. In turn, such banks reduce loan supply (Bouvatier and Lepetit, 2008). Although there is also a negative and significant relation between *DISC* and *DLOAN*, discretionary provisions are not part of regulatory objectives that aim to improve bank credit risk management through non-discretionary provisions.

Interestingly, there is no significant relation between *NDISC* and *DLOAN* in small banks regardless of whether we use either the orthogonal deviations or first-difference transformation of instruments. These findings are consistent with those obtained from Table 2. As *LLP* in small banks is counter-cyclical with the business cycle as shown in Table 2, higher *NDISC* in turn does not affect loan growth of small banks as shown in Table 3.

From these findings, we conclude that the adoption of the dynamic provisioning system to solve banks' procyclical behaviour is more crucial in large banks than in small banks. However, we do not discourage small banks from adopting the dynamic provisioning system, as it is well accepted that the this system can overcome the procyclical effect of loan loss provisions, which may, in turn, exacerbate loan fluctuations.

4.2.3. Does market structure, economic development and the rule of law matter?

In the final stage, we examine whether country-specific environments can mitigate the procyclical effect of loan loss provisions on loan growth of banks. Table 4,

Table 5 and Table 6 document our findings when we examine the influence of bank market structure (*CR3*), economic development (*GDPCAP*) and institutional development (*RLAW*), respectively.

From Table 4, it is shown that the relation between non-discretionary provisions (*NDISC*) and loan growth of banks (*DLOAN*) is dependent on bank market structure (*CR3*). Non-discretionary provisions of banks in highly concentrated markets (*CR3*NDISC*) generally do not exhibit a significant impact on bank loan growth (*DLOAN*). This result is robust to the use of orthogonal deviations and first-difference transformations of instruments, but only holds for the small bank sample.

[Insert Table 4 here]

However, the influence of *CR3* remains unclear for small banks due to the fact that the link between *NDISC* and *DLOAN* is insignificant in the small bank sample as shown in Table 3. For large banks, the link between *CR3*NDISC* and *DLOAN* is negative, suggesting that higher non-discretionary provisions of large banks reduces loan growth only in countries with less competitive banking markets. Accordingly, it is higher bank competition that may mitigate the negative effect of non-discretionary provisions on loan growth of large banks.

In Table 5, we show that there is no significant impact of the interaction term *NDISC*GDPCAP* on bank loan growth (*DLOAN*). This result is again consistent in all samples. Higher economic development permits banks to enhance their profit persistence (e.g., Goddard et al., 2011), which could be useful whenever banks are required to increase their loan loss provisions without necessarily reducing loan availability.

[Insert Table 5 here]

Finally, we incorporate the interaction term *NDISC*RLAW* in order to examine whether the impact on loan growth of non-discretionary provisions is dependent on the quality of the rule of law as a proxy of institutional development. In all three samples, the impact of *NDSIC* on *DLOAN* is dependent on the quality of the rule of law. The link between *NDISC* and *DLOAN* is no longer significant, as the quality of the rule of law is

improved. Better rule of law thus empowers investors to enforce and monitor their contracts, while banks in a better institutional environment are willing to increase loan availability because of the enhanced contracts and governance from the firms.

[Insert Table 6 here]

4.3. Robustness checks

We conduct some modifications in estimating all equations presented above in order to ensure robustness.[4] First, we remove the time dummies in estimating Equation (1), (4) and (5), but the results discussed above are consistent. Second, we modify the method in estimating Equation (1), (4) and (5) by applying the Ordinary Least Squares (OLS) methodology. Using this method, our results regarding the impact on bank loan growth (*DLOAN*) of *DISC*, *NDISC* and their interaction terms with country-specific factors remains unaltered.

5. Conclusions

Using a sample of 686 commercial banks from 12 Asian countries over the 1992-2009 period, this study aims to highlight the effect of loan loss provisions on lending behaviour of banks by investigating whether the effect is bank- or country-specific. In general, we show that Asian banks use loan loss provisions for both discretionary and non-discretionary purposes. In terms of discretionary purposes, Asian banks, regardless of whether they are small or large, use loan loss provisions for capital management and signalling purposes, but not for income smoothing. Asian banks also use loan loss provisions for non-discretionary purposes, and small banks exhibit a more forward-looking behaviour than large banks. Specifically, only loan loss provisions in small banks are counter-cyclical with the business cycle.

Although we document that non-discretionary provisions are generally associated with slower bank loan growth, only large banks exhibit a negative relationship between non-discretionary provisions and loan growth., This relation not significant in small banks, confirming the forward-looking behaviour of small banks. The dynamic

[4] The results of robustness checks are not presented in the paper, but are available on request.

provisioning system implementation is therefore more crucial in large banks than small banks. While our study suggests loan loss provisions in small banks are less responsive to the dynamism of the economy, we do not discourage small banks from implementing a dynamic provisioning system. It is clear that the specific provisions obtained by the dynamic provisioning system can mitigate procyclical effects of loan loss provisions on loan growth in banking, particularly during a cyclical downturn.

In addition, we examine whether the procyclical effect of non-discretionary provisions on loan growth of banks is country-specific. We find that country-specific environments, such as bank market structure, economic development and institutional quality affect the relation between non-discretionary provisions and loan growth of banks. More specifically, banks in countries with more competitive banking markets, higher per capita income and better rule of law do not exhibit a significant relation between non-discretionary provisions and loan growth of banks. Similarly, although we show that higher bank competition, higher per capita income and better institutional quality help mitigate the negative effect of non-discretionary provisions on loan growth of banks, it does not mean that the dynamic provisioning system implementation is unnecessary.

Overall, this study identifies conditions in which the dynamic provisioning system is urgently required to solve the procyclical behaviour of banks. This study is important in the sense that Asian banks do not have similar capacity in implementing the dynamic provisioning system. Similarly, the procyclical effect of loan loss provisions, notably the non-discretionary ones, varies from country to country. Each country may have different macroeconomic environments, which, in turn, may determine the effectiveness of the dynamic provisioning system.

Our findings suggest that bank regulators need to pay closer attention to the large banks with respect to the dynamic provisioning system implementation because non-discretionary provisions in large banks reduce loan growth. A more in depth investigation at the country level suggests that banks in countries with higher bank competition, higher per capita income and better rule of law seem less responsive to the dynamism of the economy because their non-discretionary provisions do not affect loan growth. Banks in these kinds of macroeconomic environments are the ones that do not urgently require the

dynamic provisioning system to overcome their procyclical behaviour, although its implementation is worth considering and remains encouraged.

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Table 1. Descriptive statistics. *LLP* is the ratio of loan loss provisions to total loans. *DNPL* is the actual changes of non-performing loans. *NPL* is the ratio of non-performing loans to total loans. *LOAN* is the ratio of total loans to total assets. *EQTA* is the ratio of total equity to total assets. *EBT* is the ratio of earning before taxes and loan loss provisions to total assets. *SIGN* is the one-year-ahead change in the ratio of earnings before taxes and loan loss provisions to total assets. *DDEPO* is the actual change in the ratio of total deposits to total assets. *DLOAN* is the actual change in the ratio of total loans to total assets. *LRATE* is the lending rate. *GDPG* is the growth rate of real gross domestic product per capita. *CR3* is the ratio of the three largest banks' total assets to the total assets of banking system. *GDPCAP* is the real gross domestic product per capita. *RLAW* is the rule of law index coming from Kaufman et al (2010).

	Variable	Mean	Std. Dev.	Min	Max
All banks	*LLP*	0.019337	0.051427	0.000014	0.948693
	DNPL	0.002483	0.055734	-0.864169	0.897727
	NPL	0.029218	0.066983	0.000000	0.897727
	LOAN	0.540530	0.180878	0.000014	0.995843
	EQTA	0.114508	0.117799	0.000228	0.998759
	EBT	0.009571	0.010324	-0.037170	0.040186
	SIGN	0.139823	0.931745	-6.899410	6.988115
	DDEPO	0.097620	0.194437	-1.138423	1.569936
	DLOAN	0.0670373	0.4585605	-1.968385	2
Large banks	*LLP*	0.0161988	0.0417287	0.0000136	0.9486932
	DNPL	0.0015089	0.0490697	-0.8641686	0.8612003
	NPL	0.026974	0.0585445	0.00001	0.8728127
	LOAN	0.5519733	0.1547116	0.0001318	0.9958427
	EQTA	0.0823526	0.0724849	0.0003872	0.9286116
	EBT	0.0084545	0.0096027	-0.03717	0.0395615
	SIGN	0.132755	0.8394387	-6.776203	6.988115
	DDEPO	0.0981645	0.1561292	-0.7715145	1.081804
	DLOAN	0.0738072	0.3993102	-1.968385	2
Small banks	*LLP*	0.0244974	0.0639474	0.0000204	0.8145833
	DNPL	0.0039840	0.0646635	-0.6578521	0.8977273
	NPL	0.0325267	0.0776665	0.0000367	0.8977273
	LOAN	0.5234013	0.2130354	0.0000135	0.9884074
	EQTA	0.1614855	0.1508696	0.0002281	0.9987589
	EBT	0.0113557	0.0111546	-0.0365840	0.0401856
	SIGN	0.1520755	1.0732450	-6.8994100	5.4530140
	DDEPO	0.0967666	0.2426346	-1.1384230	1.5699360
	DLOAN	0.0576136	0.5300531	-1.88572	1.920699
Macro variables	*LRATE*	0.113164	0.540753	0.050000	0.321800
	GDPG	0.055143	0.033925	-0.131270	0.141950
	INF	0.060674	0.059013	-0.039470	0.580200
	CR3	0.517968	0.168919	0.247780	1.000000
	GDPCAP	5876.785	8808.355	144.149	32000
	RLAW	0.129311	0.649938	-1.000616	1.575986

Table 2. The determinants of bank loan loss provisions. The definition of variables follows the one presented in Table 1. *LLP(-1)* is the one-year lagged value of the ratio of loan loss provisions to total loans. The estimations are conducted using the two-step Generalized Method of Moments estimators. The models are valid if the AR(2) test and Hansen-J test are both insignificant.

	All Banks		***Large Banks***		***Small Banks***	
	Orthogonal Deviation	*First Difference*	*Orthogonal Deviation*	*First Difference*	*Orthogonal Deviation*	*First Difference*
	LLP	*LLP*	*LLP*	*LLP*	*LLP*	*LLP*
Expl. Variables						
LLP(-1)	0.138***	0.137***	0.226***	0.1865***	0.119***	0.117***
	(0.0372)	(0.0429)	(0.0713)	(0.066)	(0.0424)	(0.0408)
DNPL	0.0451	0.0330	0.00786	0.0098	0.0682*	0.0473
	(0.0279)	(0.0220)	(0.0373)	(0.033)	(0.0394)	(0.0300)
NPL	0.0667***	0.0666***	0.0810***	0.0776***	0.0543**	0.0562**
	(0.0197)	(0.0230)	(0.0226)	(0.023)	(0.0233)	(0.0282)
LOAN	0.000986	0.000663	-0.00166	0.0015	0.00942	0.000242
	(0.00492)	(0.00549)	(0.00493)	(0.005)	(0.00767)	(0.00800)
GDPG	0.0312	0.0278	0.00171	0.0105	0.0758***	0.0843**
	(0.0196)	(0.0179)	(0.0245)	(0.023)	(0.0278)	(0.0346)
EQTA	0.114***	0.113***	0.126***	0.1114***	0.0731**	0.0790***
	(0.0321)	(0.0344)	(0.0460)	(0.042)	(0.0323)	(0.0250)
EBT	-0.526***	-0.501***	-0.336**	-0.4088**	-0.840***	-0.529***
	(0.170)	(0.178)	(0.165)	(0.177)	(0.206)	(0.200)
SIGN	0.00250**	0.00297**	0.00335**	0.0032**	0.00161	0.00290**
	(0.00105)	(0.00117)	(0.00153)	(0.002)	(0.00122)	(0.00140)
p-value for AR(2) test	0.284	0.100	0.387	0.368	0.272	0.100
p-value for Hansen-J test	0.973	0.993	0.980	0.992	0.897	0.915
Observations	3,202	3,202	2,196	2,196	1,006	1,006
Number of banks	571	571	318	318	253	253

Table 3. The effect of discretionary and non-discretionary provisions on loan growth of banks. The definition of variables follows the one presented in Table 1. *DLOAN(-1)* is the one-year lagged value of *DLOAN*. DISC and NDISC is discretionary and non-discretionary provisions, respectively, which are estimated with respect to the method of transformations of instruments used: *Orthogonal Deviations* or *First Difference*. The estimations are conducted using the two-step Generalized Method of Moments estimators. The models are valid if the AR(2) test and Hansen-J test are both insignificant.

	All Banks		***Large Banks***		***Small Banks***	
	Orthogonal Deviation	*First Difference*	*Orthogonal Deviation*	*First Difference*	*Orthogonal Deviation*	*First Difference*
	DLOAN	*DLOAN*	*DLOAN*	*DLOAN*	*DLOAN*	*DLOAN*
Expl. Variables						
DLOAN(-1)	0.02608***	0.03546***	0.0167*	0.0216**	0.0321**	0.0366***
	(0.009)	(0.008)	(0.00893)	(0.010)	(0.014)	(0.013)
DISC	-3.41867***	-3.44678***	-1.313**	-1.4251***	-3.4056***	-3.6942***
	(0.636)	(0.614)	(0.574)	(0.525)	(0.724)	(0.932)
NDISC	**-1.08944****	**-1.40460****	**-1.457*****	**-1.4231****	0.5243	-1.2048
	(0.452)	(0.552)	(0.435)	(0.549)	(0.530)	(0.735)
EQTA	0.39341***	0.38388***	0.385***	0.3967***	0.1553**	0.2058***
	(0.073)	(0.068)	(0.100)	(0.093)	(0.064)	(0.076)
DDEPO	0.49652***	0.47515***	0.500***	0.4854***	0.5018***	0.4802***
	(0.023)	(0.025)	(0.0299)	(0.033)	(0.033)	(0.037)
GDPG	0.37738***	0.40280***	0.197***	0.2786***	0.5407***	0.7263***
	(0.057)	(0.059)	(0.0552)	(0.059)	(0.143)	(0.147)
LRATE	-0.00170***	-0.00160***	-0.000522	-0.0008	-0.0039***	-0.0029***
	(0.001)	(0.001)	(0.000599)	(0.001)	(0.001)	(0.001)
INF	0.18356***	0.24645***	0.127***	0.1572***	0.2645***	0.3314***
	(0.046)	(0.046)	(0.0390)	(0.041)	(0.078)	(0.087)
p-value for AR(2) test	0.098	0.111	0.261	0.312	0.231	0.225
p-value for Hansen-J test	0.325	0.385	0.975	0.982	0.979	0.971
Observations	2,634	2,634	1,689	1,689	945	945
Number of banks	498	498	264	264	234	234

Table 4. The role of bank concentration on the link between non-discretionary provisions and loan growth of banks. The definition of variables follows the one presented in Table 1. *DLOAN(-1)* is the one-year lagged value of *DLOAN*. DISC and NDISC is discretionary and non-discretionary provisions, respectively, which are estimated with respect to the method of transformations of instruments used: *Orthogonal Deviations* or *First Difference*. The estimations are conducted using the two-step Generalized Method of Moments estimators. The models are valid if the AR(2) test and Hansen-J test are both insignificant.

	All Banks		***Large Banks***		***Small Banks***	
	Orthogonal Deviation	*First Difference*	*Orthogonal Deviation*	*First Difference*	*Orthogonal Deviation*	*First Difference*
	DLOAN	*DLOAN*	*DLOAN*	*DLOAN*	*DLOAN*	*DLOAN*
Expl. Variables						
DLOAN(-1)	0.02423**	0.03274***	0.0201**	0.0200*	0.0240	0.0338**
	(0.010)	(0.009)	(0.010)	(0.010)	(0.016)	(0.014)
DISC	-3.33802***	-3.50177***	-1.5235**	-1.7412***	-3.1842***	-3.5834***
	(0.621)	(0.607)	(0.604)	(0.551)	(0.640)	(0.863)
NDISC	**-2.89965****	**-1.8617***	-0.4352	2.6824	-1.2868	-3.4193
	(1.607)	(1.553)	(1.908)	(1.918)	(1.663)	(1.929)
EQTA	0.32321***	0.32320***	0.3159***	0.2997***	0.0652	0.0918
	(0.071)	(0.065)	(0.098)	(0.086)	(0.062)	(0.072)
DDEPO	0.48197***	0.46161***	0.4842***	0.4747***	0.4840***	0.4592***
	(0.024)	(0.026)	(0.031)	(0.034)	(0.034)	(0.038)
GDPG	0.30149***	0.29873***	0.1226**	0.1773***	0.5785***	0.7445***
	(0.062)	(0.064)	(0.055)	(0.056)	(0.144)	(0.153)
LRATE	-0.00242***	-0.00264***	-0.0012*	-0.0019**	-0.0047***	-0.0046***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INF	0.12965***	0.16954***	0.1031**	0.1190***	0.1933***	0.2416***
	(0.043)	(0.042)	(0.041)	(0.042)	(0.074)	(0.082)
CR3	0.05094***	0.05791***	0.0493***	0.0521**	0.0677**	0.09244***
	(0.01476)	(0.0158)	(0.000)	(0.000)	(0.000)	(0.000)
CR3*NDISC	2.90551	1.06233	**-1.3592***	**-6.4913****	2.2372	3.5928
	(2.757)	(2.717)	(3.649)	(3.799)	(2.620)	(3.011)
p-value for AR(2) test	0.096	0.109	0.201	0.193	0.217	0.214
p-value for Hansen-J test	0.992	0.997	0.912	0.897	0.956	0.966
Observations	2,496	2,496	1,610	1,610	886	886
Number of banks	494	494	261	261	233	233

Table 5. The role of economic development on the link between non-discretionary provisions and loan growth of banks. The definition of variables follows the one presented in Table 1. *DLOAN(-1)* is the one-year lagged value of *DLOAN*. DISC and NDISC is discretionary and non-discretionary provisions, respectively, which are estimated with respect to the method of transformations of instruments used: *Orthogonal Deviations* or *First Difference*. The estimations are conducted using the two-step Generalized Method of Moments estimators. The models are valid if the AR(2) test and Hansen-J test are both insignificant.

	All Banks		***Large Banks***		***Small Banks***	
	Orthogonal Deviation	*First Difference*	*Orthogonal Deviation*	*First Difference*	*Orthogonal Deviation*	*First Difference*
	DLOAN	*DLOAN*	*DLOAN*	*DLOAN*	*DLOAN*	*DLOAN*
Expl. Variables						
DLOAN(-1)	0.0241***	0.03521***	0.0162**	0.0193**	0.0316	0.0356***
	(0.00861)	(0.008)	(0.008)	(0.009)	(0.038)	(0.013)
DISC	-3.060***	-3.29679***	-1.3662**	-1.5080***	-3.2897***	-2.9680***
	(0.575)	(0.581)	(0.556)	(0.494)	(0.998)	(0.876)
NDISC	**-0.856***	**-1.13834***	**-1.5112*****	**-1.2990****	0.4329	-1.1494
	(0.490)	(0.582)	(0.523)	(0.608)	(0.626)	(0.749)
EQTA	0.394***	0.40039***	0.4054***	0.4018***	0.1960**	0.2172***
	(0.0717)	(0.067)	(0.106)	(0.096)	(0.095)	(0.076)
DDEPO	0.497***	0.47644***	0.4995***	0.4842***	0.5093***	0.4745***
	(0.0231)	(0.025)	(0.031)	(0.032)	(0.070)	(0.036)
GDPG	0.440***	0.44065***	0.2163***	0.2826***	0.6250**	0.8920***
	(0.0593)	(0.060)	(0.058)	(0.062)	(0.306)	(0.154)
LRATE	-0.00187***	-0.00178***	-0.0005	-0.0008	-0.0036	-0.0032***
	(0.000539)	(0.001)	(0.001)	(0.001)	(0.006)	(0.001)
INF	0.181***	0.24349***	0.1320***	0.1588***	0.2169	0.3200***
	(0.0445)	(0.045)	(0.041)	(0.041)	(0.586)	(0.086)
GDPCAP	-0.000122	-4.78e-07	-0.0000	-0.0000	-0.0000	-0.0000
	(9.99e-05)	(4.08e-07)	(0.000)	(0.000)	(0.000)	(0.000)
*GDPCAP*NDISC*	-4.75e-07	-8.80e-05	0.0000	0.0000	-0.0001	-0.0002
	(5.18e-07)	(8.09e-05)	(0.000)	(0.000)	(0.000)	(0.000)
p-value for AR(2) test	0.093	0.106	0.259	0.293	0.212	0.178
p-value for Hansen-J test	0.988	0.989	1.000	1.000	0.977	0.982
Observations	2,634	2,634	1,689	1,689	945	945
Number of banks	498	498	264	264	234	234

Table 6. The role of rule of law on the link between non-discretionary provisions and loan growth of banks. The definition of variables follows the one presented in Table 1. *DLOAN(-1)* is the one-year lagged value of *DLOAN*. DISC and NDISC is discretionary and non-discretionary provisions, respectively, which are estimated with respect to the method of transformations of instruments used: *Orthogonal Deviations* or *First Difference*. The estimations are conducted using the two-step Generalized Method of Moments estimators. The models are valid if the AR(2) test and Hansen-J test are both insignificant.

	All Banks		***Large Banks***		***Small Banks***	
	Orthogonal Deviation	*First Difference*	*Orthogonal Deviation*	*First Difference*	*Orthogonal Deviation*	*First Difference*
	DLOAN	*DLOAN*	*DLOAN*	*DLOAN*	*DLOAN*	*DLOAN*
Expl. Variables						
DLOAN(-1)	0.0268***	0.0369***	0.0199**	0.0228**	0.0345**	0.0460***
	(0.00894)	(0.00859)	(0.009)	(0.00985)	(0.0149)	(0.0145)
DISC	-3.279***	-3.374***	-1.5441***	-1.483***	-3.268***	-3.568***
	(0.620)	(0.605)	(0.584)	(0.525)	(0.646)	(0.868)
NDISC	**-1.231****	**-1.117***	**-1.1337*****	-0.703	1.234	-0.782
	(0.500)	(0.601)	(0.431)	(0.465)	(0.886)	(0.859)
EQTA	0.386***	0.379***	0.3822***	0.346***	0.179***	0.225***
	(0.0747)	(0.0678)	(0.096)	(0.0858)	(0.0626)	(0.0753)
DDEPO	0.495***	0.478***	0.4929***	0.485***	0.510***	0.489***
	(0.0231)	(0.0251)	(0.029)	(0.0321)	(0.0335)	(0.0362)
GDPG	0.393***	0.404***	0.2094***	0.277***	0.416**	0.679***
	(0.0588)	(0.0627)	(0.055)	(0.0591)	(0.161)	(0.156)
LRATE	-0.00163***	-0.00168***	-0.0005	-0.000971*	-0.00413***	-0.00318***
	(0.000543)	(0.000524)	(0.001)	(0.000576)	(0.00105)	(0.000914)
INF	0.175***	0.233***	0.1339***	0.174***	0.220***	0.279***
	(0.0480)	(0.0488)	(0.041)	(0.0461)	(0.0809)	(0.0865)
RLAW	-0.00586	-0.00675	-0.0007	0.00232	-0.0479**	-0.0312**
	(0.00614)	(0.00563)	(0.004)	(0.00500)	(0.0220)	(0.0143)
*RLAW*NDISC*	-0.125	0.407	-0.1806	0.243	2.340*	0.969
	(0.742)	(0.779)	(0.546)	(0.633)	(1.376)	(1.289)
p-value for AR(2) test	0.088	0.116	0.268	0.293	0.345	0.270
p-value for Hansen-J test	0.996	0.991	0.995	0.988	0.979	0.984
Observations	2,634	2,634	1,689	1,689	945	945
Number of banks	498	498	264	264	234	234