Is the Special Purpose Vehicles Act Responsible for the Decline in NPL Ratios?

Stephanie L. Chan  
De La Salle University  
stephanielchan@yahoo.com

Andrew Adrian Y. Pua  
andrewypua@gmail.com

This study aimed to determine if the SPV Act was actually responsible for the marked decline in NPL ratios this past four years. Using aggregated data for the entire Philippine Banking System, segregated according to type of bank, results suggest that the SPV Act was not responsible for the decline in the NPL ratios but may be attributed to a downward trend in the loan to asset ratio where values are getting closer to the interval for which NPL ratios are at a minimum, economic sluggishness as measured by deviations from the long run trend of macroeconomic variables, and seasonal patterns in macroeconomic variables coinciding with fluctuations in NPL ratios.

Keywords: Nonperforming loans, financial ratios, banking, banking law

Declining nonperforming loan (NPL) ratios across types of banks have consistently made headlines in the business pages of newspapers across the country. From a high of 14% in 2002 (Pasadilla, 2005), it went down to around 5.33% for universal and commercial banks as of May 2007. This is good news for the banking industry – a sign that it is finally recovering from the devastating Asian financial crisis that hit the Philippines in 1997.

The continuous decline in NPL ratio is attributed to many factors. Some cite the overall upturn of the economy, while others credit the signing of the Special Purpose Vehicle (SPV) law of 2003 for the decline in NPL ratios. Other factors include the recent Bangko Sentral ng Pilipinas (BSP) order for banks to implement Basel II, which would require banks to increase their reserves for high-risk assets such as NPLs, leaving them with less liquidity for their operations.

This study aims to answer several questions. First, it verifies whether a structural change occurred as a result of the passing of the SPV law in early 2003. Another is to identify the bank-specific and macroeconomic determinants of nonperforming loan ratios. Finally, using a set of robustness checks, determine if the SPV Act was actually responsible for the marked decline in NPL ratios this past four years.

Nonperforming loans are formally defined by BSP as

“…past due loan accounts whose principal and/or interest is unpaid for thirty (30) days
or more after due date (applicable to loans payable in lump sum and loans payable in quarterly, semi-annual or annual installments), including the outstanding balance of loans payable in monthly installments when three (3) or more installments are in arrears, the outstanding balance of loans payable daily, weekly or semi-monthly installments when the total amount of arrearages reaches ten percent (10%) of the total loan receivable balance, restructured loans which do not meet the requirements to be treated as performing loans under existing rules and regulations, and all items in litigation. [It] exclude[s] loans classified as Loss in the latest BSP examination which are fully covered by allowance for probable losses and applicable to a bank with no unbooked valuation reserves and other capital adjustments required by the BSP (Circular No. 351).”

NPLs are serious banking problems that erupted during the 1997 crisis. Suddenly, large corporate loans were irrecoverable, despite being heavily secured by real estate. It did not help that the real estate bubble burst concurrently. An interview with a former bank account officer revealed that the banking practice changed overnight. Prior to the crisis, there were no separate Remedial Accounts divisions in banks to manage loans that have defaulted. However, when the loans simultaneously defaulted, banks found themselves dealing with NPLs left and right. Banks had to incur additional costs: legal, maintenance, and human resources, to say the least.

In an attempt to alleviate the burgeoning NPL problem, the Philippine government signed into effect the Special Purpose Vehicle Law in January 2003. An SPV is a privately-owned asset management company set up to purchase the bad assets of banks. After acquisition of bad asset portfolios (usually at a very high discount rate), SPVs take charge of “juicing” the bad assets to recover the purchase price, and profit from them. Upon acquisition of the said assets, there is a transfer of rights from the bank to the SPV. As such, SPVs can offer more flexible terms than banks to the debtors, enabling them to pursue exit strategies such as discounted payout, dacion en pago, auction sales, and restructuring with lower interest rates, among others. Banks are not able to resort to such measures, as preferential treatment for one client will open a Pandora’s box of similar demands from other clients.

The SPV law grants certain fiscal and tax incentives to both banks and asset management companies. As a result, it encourages banks to sell their bad assets to SPVs and continue with their role of financial intermediation, leaving SPVs to pursue the debtors. As of 14 December 2006, there were 44 SPV companies registered with the Securities and Exchange Commission (SEC). The SPV law expired in April 2005, but was subsequently amended in March 2006. As such, banks have until March 2008 to avail of incentives in unloading their bad assets.

Among the NPL-saddled Asian countries, only India and Taiwan, along with the Philippines, chose to deal with the problem through the private sector. According to a government press release dated January 10, 2003 (http://www.gov.ph/news/default.asp?=2435), one of the reasons why this was done was because the government could not afford to bail out the banks. Another is that the banking industry is largely owned by the private sector and that the magnitude of non-performing assets is relatively smaller than those of the other countries, hence banks are expected to resolve the issue with little government assistance. In contrast, the governments of Korea, Malaysia, Indonesia, and China set up state-owned asset management companies.

**REVIEW OF LITERATURE**

NPL levels and other related ratios are often used as measures for a bank’s credit risk. Mishkin (2004) defines credit risk as the risk arising from the possibility that the borrower will default. Credit risk is inevitable as banks’ main source of income is lending. However, credit risk is not uniform across the types of banks. In the case of Malaysia, Ahmad (2002) examined NPL ratios across the
different types of banks to assess which type has been most vulnerable to credit risk. He found that finance companies received the highest increase in NPL ratio, followed by commercial banks and merchant banks. Malaysia’s NPL ratios were volatile as a result of Bank Negara Malaysia’s evolving definition of NPL. Prior to 1986, loans were classified as NPL if there is no movement in the account for 12 months. In 1986, the period was tightened to six months, and in 1998, as a response to the crisis, the period was further tightened to three months. However, the policy was relaxed nine months later, settling the period at six months.

Credit risk is affected by the credit policies of banks. Banks have credit policies in place, but the different banks have varying degrees of strictness. Also, aside from internal credit policies, different kinds of banks are subject to different Central Bank regulations. Credit risk is an industry-wide phenomenon, but Ahmad (2002) argued that the degree of risk varied across types of banks, as different types of bank serve different types of clients. He cited bank regulation changes and the unfavorable economic environment as reasons for the rise of NPL ratios.

Mishkin (2004) has a discussion on adverse selection and moral hazard among banks and borrowers. For risk management purposes, banks must have an effective screening mechanism against bad borrowers. They must collect information on the borrowers then check it against policies. The use of judgment is an unavoidable part of accepting loans. However, bank account officers have an incentive to expand their portfolio, as they are required to achieve a minimum target level each month. As a result, banks create their own agency problems by implementing such policies.

A variety of bank-specific factors also affect NPL accumulation. Li (2003) examines the case of Taiwanese banks. He shows that total loans and total assets affect NPL ratio negatively, on the basis of the learning-by-doing theory. According to him, the more loans that a bank has, the more experience it accumulates in handling loans, and thus will be able to control NPLs more efficiently. Likewise, the more assets a bank has, the greater its resources are to improve the quality of loans. He also includes the squares of total loans and total assets to show that the learning-by-doing effect diminishes over time. The quality of the loan portfolio of financial institutions is dependent on the financial health and profitability of the entities that they lend to. This suggests that an index comprised of various industry figures might have strong explanatory power over NPL levels if included in a regression model.

Ghosh (2005) takes it one step further by introducing corporate leverage as a determinant of NPL. He believes that there is a link between the quality of bank assets and corporate leverage. However, high corporate leverage makes firms susceptible to macroeconomic changes which create NPLs. Risky corporate loans cause banks to raise interest rates, discouraging firms from borrowing. Also, banks’ ability to extend leverage is hampered by NPLs. He used four simultaneous equations to model the relationships described above with NPL ratio, capital ratio, corporate leverage and real cost of capital as variables. He concluded that NPL levels do rise with an increase in corporate leverage (measured by debt-equity ratio), but with a lag.

Other regions in the world also experienced massive banking crises. In Sub-Saharan Africa, for example, NPL ratios reached a high of 32% in 1993. Fofack (2005) used a set of microeconomic and macroeconomic variables as determinants of NPLs. Using data on Sub-Saharan African banks, he showed that firm-specific factors such as the capital adequacy ratio and interbank loans affect NPLs, as they indicate moral hazard on the part of the banks. Certain macro variables such as real GDP per capita, broad money, real interest rate and real effective exchange rate were significant, implying that the Sub-Saharan African banking sector is highly sensitive to outside shocks.

Pasadilla (2005) provides a commentary on the degree of success that the SPV law will achieve in the light of the current insolvency structure of the Philippines. She argues that the SPV law is a band-aid solution to the NPL problem, as banks merely
The banks benefit as a result of having their financial statements cleaned up, the SPVs are left to deal with the acquired bad asset portfolios. Their ability to resolve the NPL problem hinges on the flexibility that the government grants them. As the fiscal and tax incentives granted to the SPVs are time-bound, they will tend to pursue the get-rich quick methods of recovery, leaving out options such as business rehabilitation for promising but debt-ridden companies.

The literature has not taken into account developments in macroeconomic theory especially the extraction cyclical components from economic time series. Extracting cyclical components is better than using levels or first differences of macroeconomic time series so that we can isolate the effect of the business cycle on NPL ratios. Further, the Philippine case gives us an opportunity to determine if a private sector approach to solving the NPL problem may be beneficial.

THE DATA AND EMPIRICAL MODEL

This study uses quarterly data from 1999 until the first quarter of 2006. The bank-specific data were downloaded from the Bangko Sentral ng Pilipinas (BSP) website, while the macroeconomic variables were downloaded from the online database of International Financial Statistics (IFS). All in all, three types of banks are to be analyzed over 29 consecutive quarters, totaling 87 observations. Drawing from the works of Fofack (2005), Li (2003), and Pasadilla (2005), a regression model of the specification below will be estimated in this study.

\[ NPL_{it} = \alpha + \beta X_{it} + \gamma M_t + \delta B_i + \phi SPV_t + \varepsilon_{it} \]  

where \( NPL_{it} \) is the non-performing loan ratio, defined as non-performing loans excluding interbank loans, divided by the total loan portfolio; \( X_{it} \) represents the set of bank-specific variables as follows:

1. **Loan to asset ratio**: Defined as the ratio of total loan portfolio (excluding interbank loans) to total assets of the bank. Li (2003) asserts that the more loans a bank has, the more experience it accumulates in handling loans, and thus should be a negative factor in the increase of NPLs.

2. **Loan to asset ratio squared**: Square of the loan to asset ratio. The expected sign should be the reverse of the above, as it serves as an indicator of the learning rate of the banking industry.

3. **Return on assets**: Measured by the BSP as annualized net income after tax, divided by average assets. The return on assets represents the overall effectiveness of management in generating profits with its available resources. The more effective a bank is, the less NPLs it should have.

4. **Equity ratio**: Total equity divided by total assets. According to Fofack (2005), the equity ratio is a measure of the fragility of banks. A good equity ratio is an indicator of soundness of banks. Equity is supposed to be a cushion to absorb shock in various periods.

\( M_t \) represents the cyclical components of macroeconomic variables, namely, broad money, real GDP, 91-day treasury bill rate, the peso-dollar exchange rate extracted using the Baxter-King (1999) filter and the Hodrick-Prescott (1997) filter. \( B_i \) represents the set of bank-type dummy variables, which is expected to partially determine the degree of credit risk exposure of banks. There are three types of banks as discussed earlier, namely, the universal and commercial banks, thrift banks, and rural banks. Finally, \( SPV_t \) is the dummy variable that splits the data into two time-periods: before and after the passing of the SPV law. The literature on the determinants of NPL ratio generally uses information for all banks using databases such as Bankscope. However, due to limitations, this study uses aggregated data for the entire Philippine
Banking System, segregated according to type of bank. Ideally, one should use bank-level panel data to measure the impact of the SPV Act. However, data coming from Philippine banks are lacking especially if one wants to use a quarterly frequency. A follow-up study explores the use of bank-level panel data on an annual frequency. Hence, the results of this study will characterize the banking system as a whole.

DESCRIPTIVE STATISTICS

After the enactment of the SPV law, there was a decrease in the mean level of NPL from the two periods. There was also a decline in the loan to asset ratio and equity ratio, and an increase in the return on assets.

Table 1 depicts the NPL ratios of the banking system. Universal and commercial banks have the most volatile NPL ratio, reaching as high as 20% (excluding interbank loans) in the third quarter of 2002. Thrift banks mirrored the movement of universal and commercial banks from 2002 onwards, while rural banks experienced a steady decline from 1999 until the first quarter of 2006. This suggests that universal and commercial banks experience higher credit risk than the two other types of banks. However, there is a clear pattern that after 2003 (the year when the SPV Act took effect) NPL ratios had a continually decreasing pattern.

Table 1 shows the NPL ratios for the banking system while Figure 2 shows the ratio of total loans to total assets. Rural banks had the highest average ratio across the 29-quarter period at 64.07%. Thrift banks were at 56% while universal and commercial banks were at 46%. This is consistent with the fact that universal and commercial banks are licensed to perform functions other than deposits and loans. On the other hand, thrift and rural banks have less room to diversify.

Figure 3 shows the capitalization of the banking system. Universal and commercial banks had an average equity ratio of 13.14% over the 29-quarter period. Thrift banks averaged 16.60% while rural banks averaged 15.94%. As of 2006, rural banks had the highest capitalization,

<table>
<thead>
<tr>
<th>Pre-SPV Period</th>
<th>NPL Ratio</th>
<th>Loan to Asset Ratio</th>
<th>Return on Assets</th>
<th>Equity Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>16.28%</td>
<td>57.60%</td>
<td>0.62%</td>
<td>16.14%</td>
</tr>
<tr>
<td>SD</td>
<td>2.78%</td>
<td>7.02%</td>
<td>0.63%</td>
<td>2.19%</td>
</tr>
<tr>
<td>Median</td>
<td>15.95%</td>
<td>56.61%</td>
<td>0.53%</td>
<td>16.22%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post-SPV Period</th>
<th>NPL Ratio</th>
<th>Loan to Asset Ratio</th>
<th>Return on Assets</th>
<th>Equity Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>12.79%</td>
<td>53.06%</td>
<td>0.91%</td>
<td>14.10%</td>
</tr>
<tr>
<td>SD</td>
<td>2.38%</td>
<td>8.41%</td>
<td>0.68%</td>
<td>1.52%</td>
</tr>
<tr>
<td>Median</td>
<td>12.34%</td>
<td>54.19%</td>
<td>1.11%</td>
<td>13.70%</td>
</tr>
</tbody>
</table>
Figure 1. NPL ratios of banking system.

Figure 2. Loan to asset ratios of banking system.
but prior to the third quarter of 2002, thrift banks had the highest capitalization among the three banks, reaching 20.51% in the third quarter of 2000.

**EMPIRICAL RESULTS**

Table 2 presents the econometric estimates of the model. The first column contains the independent variables of the model. We present the test statistics for the fixed effects specification. We also correct for heteroscedasticity using the likelihood ratio tests under the feasible GLS estimation technique. We also check for autocorrelation using Wooldridge’s test and correct for its presence accordingly. The table also presents estimates of the model using the cyclical components extracted through the Baxter-King and Hodrick-Prescott filters. The table also presents estimates for NPL ratios in levels and in first differences because NPL ratios are found to contain a unit root using the Dickey-Fuller GLS test.

**Results for Levels**

The results suggest that the SPV act reduced NPL ratios by around 0.9 to 2.4 percentage points. This effect is significant when HP-filtered macroeconomic variables are used. However, the HP-filter was unable to remove the marked seasonal pattern in Philippine macroeconomic variables. This may lead to misleading results because the seasonal patterns may have been driving the result and not the occurrence of the SPV Act. Using a robustness check, we used the first difference of the macroeconomic variables and we found that the results are similar to the estimates using the HP-filtered variables. The effect is not statistically significant when the BK-filtered

![Equity Ratios of Banking System](Image)

*Figure 3. Equity ratios of banking system.*
### Table 2

**Econometric Estimates of the Model**

| Variables          | BK Filter | HP Filter | BK Filter | HP Filter | BK Filter | HP Filter | BK Filter | HP Filter | BK Filter | HP Filter | BK Filter | HP Filter | BK Filter | HP Filter |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Loan to asset      | -2.958*** | -2.791*** | -0.853*   | 0.089     | 0.022     | 0.319*    | -2.924*** | -0.989**  | 0.167     | 0.384***  |
|                    | 0.45      | 0.44      | 0.452     | 0.289     | 0.286     | 0.184     | 0.507     | 0.506     | 0.251     | 0.155     |
| Loan to asset sq   | 0.026***  | 0.025***  | 0.011***  | -0.001    | 0         | -0.003    | 0.021***  | 0.010**   | -0.001    | -0.003**  |
|                    | 0.004     | 0.004     | 0.003     | 0.003     | 0.002     | 0.004     | 0.004     | 0.002     | 0.001     |
| Return on assets   | 0.833     | 0.221     | 0.572     | -1.201*** | -0.508**  | -1.084*** | -0.429    | -0.838**  | -0.492*** | -0.292**  |
|                    | 0.67      | 0.356     | 0.894     | 0.41      | 0.222     | 0.349     | 0.403     | 0.405     | 0.194     | 0.144     |
| Equity ratio       | -0.788*** | -0.511*** | -0.191    | -0.074    | -0.198**  | -0.019    | -0.508*** | -0.213    | -0.219**  | -0.217*** |
|                    | 0.216     | 0.135     | 0.201     | 0.133     | 0.082     | 0.077     | 0.196     | 0.216     | 0.088     | 0.07      |
| Real GDP           | 55.763**  | 43.268*   | -5.244    | 0.831     | 4.188     | -6.590*** | 27.427    | -4.549*** | 1.917     | -4.809*** |
| Broad money        | 68.584*** | 52.249*** | 3.509     | 11.313    | 15.403    | -0.228    | 41.017*** | 3.141     | 3.568     | 0.683     |
| T-bill rates       | 1.793     | 0.702     | -0.946    | 0.346     | 0.588     | 0.086     | 0.935     | 0.979     | 0.053     | 0.691     |
|                    | 1.57      | 1.391     | 1.573     | 1.016     | 0.847     | 0.602     | 1.55      | 0.837     | 0.692     | 0.456     |
| SPV                | -0.985    | -0.918    | -2.441*** | 0.693     | 0.627     | 0.308     | -0.639    | -1.708*** | 0.257     | 0.053     |
|                    | 0.778     | 0.782     | 0.938     | 0.471     | 0.477     | 0.361     | 0.536     | 0.548     | 0.375     | 0.229     |
| Fixed Effects (FE) | Yes       | No        | Yes       | Yes       | No        | Yes       | Corrected | Corrected | Corrected | Corrected |
| F statistic for FE | 1.39      | 7.4**     | 2.1       | 5.53***   |           |           |           |           |           |           |

*** Significant at the 1% level; ** Significant at the 5% level; * Significant at the 10% level.

Standard errors are below the coefficient estimates
macroeconomic variables are used. The effect is also practically small which suggests that although the SPV Act may have reduced NPLs, it is not the one responsible for the decline in NPLs as seen in Figure 1.

Most of the bank specific variables are consistent with prior expectations especially the relationship between loan to asset ratio and NPL ratio. The NPL ratio is convex in loan to asset ratio across all specifications. This suggests that there is a value for loan to asset ratio that will minimize the NPL ratio. We find that this value is in the interval 54.62% to 56.88% across specifications using the BK-filtered macroeconomic variables. The interval is 38.77% to 49.45% using the HP-filtered macroeconomic variables. However, the results using HP-filtered macroeconomic variables should be interpreted with caution because of its inability to purge the seasonal component from the cyclical components. Using these results and Figure 2, we find that rural banks are far to the right of the interval before and after the passage of the SPV Act. Thrift banks, on the other hand, are within the range of the interval after the passage of the SPV Act. The universal and commercial banks are consistently to the left of the interval before and after the passage of the SPV Act. These results suggest that rural banks are more likely to have NPLs than thrift banks. The universal and commercial banks, on the other hand, can choose to increase their loan to asset ratio to reduce their NPL ratios.

The equity ratio has a consistently negative effect on the NPL ratio across all specifications. The effect is statistically significant and is practically large, that is, a 10 percentage point increase will decrease NPL ratios by about 2.13 to 7.88 percentage points. The return on assets has an incorrect sign for the results which are not corrected for the presence of heteroscedasticity and autocorrelation. However, the results are now consistent with prior expectations after correcting for heteroscedasticity and autocorrelation. The effect is also of the same magnitude as that of the equity ratio, that is, a 10 percentage point increase will decrease NPL ratios by about 4.29 to 8.38 percentage points. For the macroeconomic variables, the T-bill rate is consistently positive across specifications but statistically insignificant and almost negligible. The BK-filtered macroeconomic variables have different results compared to the HP-filtered variables. The results suggest that the effect of the business cycle on NPL ratios is large and almost comparable to the effects of a ten percentage point increase in the equity ratio or return on assets, that is, a 10 percentage point positive deviation from the long run trend of real GDP increases NPL ratios around 2.74 to 5.57 percentage points. The cyclical component of broad money also exhibits the same pattern, that is, a 10 percentage point positive deviation from the long run trend of broad money increase NPL ratios around 4.1 to 6.85 percentage points. The cyclical component of foreign exchange, however, is negatively related to NPL ratios. The results suggest that a 10 percentage point positive deviation from the long trend of foreign exchange rates reduces NPL ratios by around 1.45 to 2.14 percentage points.

Results for First Differences

After taking into account the time series properties of the NPL ratios, we find that the changes in NPL ratios are larger and positive after the passage of the SPV Act. This may indicate moral hazard induced lending on the part of banks because the SPV Act may provide incentives to increase lending because there is always a way to “get rid” of bad loans through the creation of SPVs. Further, all the BK-filtered cyclical components of the macroeconomic variables have no statistically significant effect on the changes in NPL ratios. The HP-filtered cyclical components seem to have a statistically significant effect but this maybe due to the persistent seasonal component of Philippine economic time series. For the bank specific variables, return on assets and equity ratio are statistically significant and are consistently negatively related to changes in NPL ratios.
CONCLUSIONS

This study uses aggregated data for the entire Philippine Banking System, segregated according to type of bank. Hence, the results of this paper will characterize the banking system as a whole.

The passing of the SPV law reduced the incidence of nonperforming loans albeit a practically small effect. However, the reduction does not necessarily mean that the NPL problem was resolved. The SPV law merely provided incentives for banks to transfer NPLs to asset management companies. Asset management companies still have to deal with the acquired loan portfolios. It is clear though, that the banks have taken advantage of this opportunity to clean up their balance sheets. It appears also that with the passing of the law, several of the ratio of banks improved, implying that overall efficiency of the banks improved upon unloading their nonperforming assets, as resources are now freed up for use in more productive ventures. Also, it was clear that the NPL ratio is affected by bank-specific factors. The loan to asset ratio and return on assets were significant in explaining the NPL decline. It also means that there is an optimal loan to asset ratio for banks to minimize their NPLs. The cyclical components of macroeconomic variables turned out to be insignificant in explaining changes in NPL ratios. This means that external shocks leading to deviations from the long run trend do not have a permanent effect on the NPL ratio.

Overall, our results suggest that the SPV Act was not responsible for the decline in the NPL ratios but may be attributed to the following factors:

1. A downward trend in the loan to asset ratio where values are getting closer to the interval for which NPL ratios are at a minimum;
2. Economic sluggishness as measured by deviations from the long run trend of macroeconomic variables; and
3. Seasonal patterns in macroeconomic variables coinciding with fluctuations in NPL ratios.

Future research should explore a counterfactual analysis. What would have happened to NPL ratios had it been that the SPV Act was not passed? What would have happened to NPL ratios had it been that asset management companies were used to solve the NPL problem? These questions may be the subject of future research on the effects of policy intervention in financial markets.

REFERENCES