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# **Bank Restructuring and Rehabilitation at the Micro Level: A Theoretical Approach and Lessons from the Past**

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**Rolando N. Bayot**

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<sup>4</sup>In countries where the regulatory framework is more liberal, securing loans with collaterals will nonetheless be needed although sometimes second to even third mortgages are permitted. Moreover, long-term grace periods are even extended to borrowers at initially concessionary rates.

<sup>5</sup>The SPV structure provides significant income flow-through benefits to investors. Besides the fact that some investors will directly acquire these assets from the SPV or in joint venture with the SPV, manage, and thereafter develop these assets, other investors will directly benefit from income derived in acquiring or investing in investment unit instruments (IUIs). This makes the SPV structure unique and distinctive from the traditional corporate set-up in the sense that there will be new challenges for the management of the SPV company to innovate and develop a mindset and focus that will exactly be tailored to the specific nature and characteristic of an SPV set-up.

<sup>6</sup>When capital expenditures are held constant, and assuming that the inflow is increasing, the balance between cash inflow and outflow would improve the ending cash balances. Note that in the period of stabilization, the bank does not need to increase its hoard of operating assets. It simply has to maintain the same so that liquid resources can be freed up to create more loans.

## Bank Restructuring and Rehabilitation at the Micro Level:

*A Theoretical Approach and Lessons from the Past*

Rolando N. Bayot

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### Introduction

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**A**n economy experiences business and economic cycles. During episodes of high economic activity, notably when growth is achieved or sustained over a relatively short period of time, banks and financial institutions have tended to be rather careless, especially where loan creation was concerned. During periods of low economic activity, investment spending will fall. Some institutions would go to the extent of even writing off their investments, and hope that the economic slump will be short-lived. Some institutions will invariably go bankrupt. But, there are banks that are just simply “too big to fail”. Should they collapse, this could lead to what economists refer to as a “systemic crisis”.

*There are banks that are just simply “too big to fail” ... should they collapse, this could lead to a “systemic crisis”.*

Government intervention, given this condition, is not only necessary but compelling. A government needs to act fast to prevent a systemic crisis from happening. Since these institutions are “too big to fail,” a government needs to pump into them immediate liquidity support. Government intervention, however, has an undesirable side to it. When government intervenes, especially to provide liquidity support, this means direct transfer of taxpayers’ money to private institutions. This paper discusses the theoretical constructs that can be used in understanding the dynamics of bank restructuring and rehabilitation. It focuses on four main issues: (i) moral hazard problems that can arise when banks are “too big to fail”; (ii) efficacy of loan loss provisions to preclude bank failure; (iii) what to do with non-performing loans; and (iv) the theoretical model to explain bank restructuring and/or rehabilitation. As a theoretical discourse, the paper is intended primarily to stimulate intellectual discussion on the proposed theoretical approaches. It is recognized that the applicability of the models will need to be tested against actual data in order to calculate the effect of bank restructuring and rehabilitation. The mathematical models and graphs presented in this paper are original ideas of the author.

*A government needs to act fast to prevent a “systemic crisis” from happening.*

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## ENDNOTES

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<sup>1</sup> The literature defines “**systemic risk**” as the risk of collapse of an entire financial system or entire market, as opposed to risk associated with any one individual entity, group or component of a system. It can be defined as financial *system* instability, potentially catastrophic, caused or exacerbated by idiosyncratic events or conditions in financial intermediaries”. It also refers to the risks imposed by *interlinkages* and *interdependencies* in a system or market, where the failure of a single entity or cluster of entities can cause a cascading failure, which could potentially bankrupt or bring down the entire system or market.

<sup>2</sup> It needs to be stressed that financial bail-outs have a way of generating huge moral hazard problems. It somehow encourages banks and FIs to create more risky loans anyway, they can always easily run to government to access financial support and assistance should huge defaults occur. Risky loans generate huge returns if and when the investment turns out well. If the loans eventually sour-up, the taxpayers will nonetheless bear the burden of keeping the banks open. This explains banks’ positive outlook towards this type of risk (Summers, 2007).

<sup>3</sup> Depositors, investors and other counterparties always refer to the Income Statement and the Balance Sheet to determine the financial weakness or strength of a financial institution. Banks must show profits lest these stakeholders immediately lose confidence on the bank. The value of total assets must always be far greater than total liabilities – a solvency measure. These are what may be referred to as “quick-look” basis for investment decision making.

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## Moral Hazard Problems Arising from Government's Liquidity Support

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*When small banks experience solvency problems, most Central Banks close them down... on the other hand, when big banks become financially distressed, Central Banks immediately provide liquidity support to avert a "contagion effect" on healthy banks.*

**T**he extension of liquidity support is a necessary consequence to prevent the onset of a "systemic crisis." In general, government "bails out" distressed financial institutions. Historically, however, when small banks experience solvency problems, the immediate solution of most Central Banks was to close them down. For the regulators, it would be more efficient to close a small bank rather than rehabilitate the same since: (i) the insured deposits that need to be reimbursed would be small relative to the total aggregate reserves of the deposit insurance system; and (ii) closing down a small bank will certainly not lead to a "systemic crisis"<sup>1</sup>.

On the other hand, when a big or huge bank becomes financially distressed or insolvent, the attitude or outlook of Central Banks altogether positively transforms. If the bank is not immediately provided liquidity support, chances are a "contagion effect" could set in and infect other healthy banks.

Assume here a scenario where regulation is relaxed during good economic times. Assume, moreover, that banks have a substantial hoard of cash. Therefore, a mood of general “exuberance” will appear. As seen from past experiences, banks tend to ease up considerably on their credit or lending policies and become generally less averse to risks<sup>2</sup>. Managers of banks maximize their utility by creating more loans as this is projected to improve future cash flow and, subsequently, income. They also reward themselves considerably, and that reward is primarily based on the volume of loans that is created.

A moral hazard problem sets in. Loans are created regardless of the quality of borrowers. In short, sub-prime lending ensues. Since rewards are derived from creating more loans, short cuts in credit processing will be made, and worse, previous stringent credit policies will be bended to accommodate more borrowers. Since the screening of applicants is relaxed to maximize loan creation, the probability of attracting sub-prime borrowers becomes all the more imminent. This is exactly what happened in global financial crisis that started in the United States in the last semester of 2007.

*A moral hazard problem sets in when banks generate loans regardless of the quality of borrowers.*

*Regulators must never loosen their grip during periods of exuberance...if an economic crisis occurs, they can also be partly blamed for having neglected their duty of ensuring the stability of the financial sector, and protecting the interests of all stakeholders, big or small.*

Finally, regulators must never loosen their grip in enforcing their legal mandate, especially during periods of exuberance. The lessons of the past have clearly shown that a period of exuberance is a very limited one. Economic slowdown will certainly follow. The excesses in the period of exuberance must be immediately moderated and tempered before huge costs are incurred. If an economic crisis occurs, regulators can also be partly blamed for having neglected their duty of ensuring the stability of the financial sector, and protecting the interests of all stakeholders, big or small.

Small banks are generally disadvantaged under many economic or financial circumstances. Regulators hold that when a small bank becomes insolvent, it is far too costly to restructure or rehabilitate them. Besides, their closure will not lead to a “systemic crisis”. Only the big banks are entitled to financial and liquidity support, and assistance from the government, because, otherwise, a “systemic crisis” is likely to occur.

The discussions in this paper focused on the necessity to study how an ailing bank, whether big or small, should be recapitalized even before they become insolvent. As a bank reaches the vicinity of insolvency, the cost of restructuring or rehabilitation becomes more costly, particularly to the taxpayers.

This paper has argued that regulators must seriously perform their supervisory powers, and prescribe the appropriate measures long before the financial problems get in the way of maintaining stability. That is the essence of what is referred to as “prompt corrective actions.” Lessons from the past show that regulators only act when problems have already exploded. The resolution process would have become so messy and complicated by then.

*An ailing bank, whether big or small, should be recapitalized even before they become insolvent.*

*The financial crisis of 2007 was spawned by uncontrolled exuberance in lending and aggravated by very weak regulation and supervision.*

That crisis was spawned by uncontrolled “exuberance” and aggravated by the very weak regulation and supervision regime, as well as the tendency of many in the banking sector to take advantage of that regulatory weakness to generate quick and huge profits. When the crisis eventually exploded, the US government had to set aside billions to recapitalize these banks either *via* direct capital infusion or *via* the acquisition of their so-called “toxic assets.” The aim was to initially restore immediate liquidity, and thereafter, solvency.

Since these banks were “too big to fail,” a program to recapitalize them was immediately put in place by the government. Here, the moral hazard problem arises. Stockholders had very little to worry about since by sheer force of circumstance, government will bail them out. The government however takes a risk that the bail out funds will be used efficiently to restore stability in the financial system. If this does not happen, it is the tax payers that will ultimately bail out the government.

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## CONCLUSION

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*The financial stability of banks is fragile; they are pre-disposed to downturns especially when economic activity slows down.*

**T**he financial stability of banks is said to be always fragile. Whenever a shock hits the economy, the first to bear the full force of the impact is the banking sector. History has shown this.

Banks are so predisposed to downturns, especially when economic activity slows down. Banks, like all other firms, experience internal governance and operational problems (since managers and shareholders have sometimes diverse and conflicting financial objectives), which can serve as hurdles towards achieving constant growth. These institutions have to also constantly face external shocks that undermine their stability even when fundamentally sound management measures and practices have been adopted. Whether or not a bank is properly and efficiently managed, an external shock can shake its very foundations. If a bank is small, it is easily closed, but if the bank is “too big to fail”, taxpayers will bear the burden of keeping them open.

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## Loan Loss Provisioning

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**I**t is established knowledge that as part of the regulatory structure and/or framework, banks are required by law to provide Loan Loss Provisions (LLP). The Central Bank is tasked to see to it that banks adhere to this legal requirement.

*Loan loss provisioning is a legal requirement for banks to provide safeguards against bad loans...*

The essence of Loan Loss Provisioning is simple: Not all of the loans created by a bank and lent to borrowers can be recovered and/or collected – there will be defaults over time – some even permanent. Therefore, the bank has to set aside an expense as an allowance for bad loans. Sometimes, these provisions are also referred to as “valuation allowance” or “valuation reserve” for bad debts.

When loans are created, these are booked as part of the assets of the bank, and reflected on the asset side of the balance sheet. But what appears, however, in the balance sheet is not the actual value of these assets but rather their face value. The explanation is simple: A fraction of this portfolio will predictably go bad, hence, they must be eventually written off from the balance sheet.

The LLP is entered in the income statement as an expense to smooth up bank earnings. If these allowances are properly or adequately provided, this will countervail a one-time charge off in a single period, should a huge proportion of bad assets be eventually written off the balance sheet.

Are banks accurately providing allowances for bad debts? Research has shown that banks do not always provide the correct provisioning. The following reasons have been advanced:

1. Managers and stockholders of banks are said to be profit maximizers, especially the former. One best way of maximizing profit is *via* under-provisioning. Since LLP is an expense, booking less of the same will result in higher profits. Since these profits will eventually cascade to retained earnings, higher dividends to stockholders can, theretofore, be paid.

*... but research has shown that not all banks provide allowances for bad debts.*

*... improving management practices and accounting systems, and improving credit assessment and approval techniques.*

to streamline operations; improved management practices and accounting systems; and improved credit assessment and approval techniques.

If all these measures are put in place, the desired improvements may be achieved as shown by Figure 5. Thus, long-term stability will be achieved.

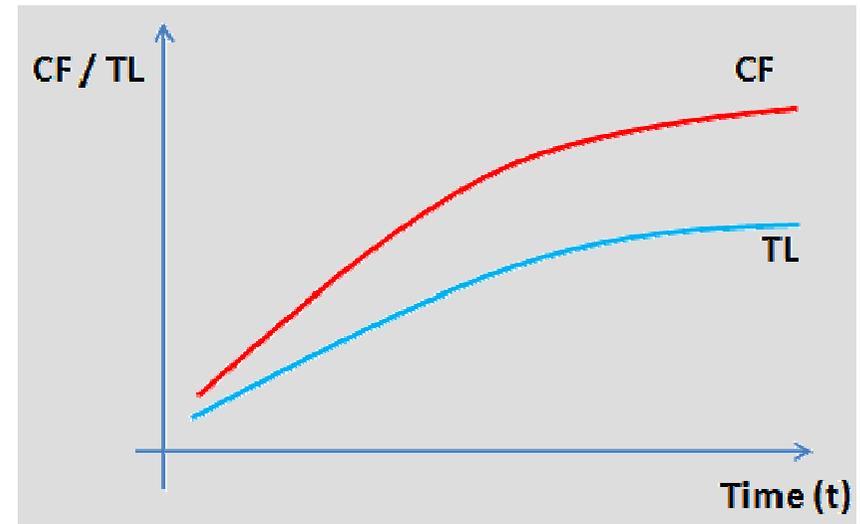


Figure 5. Achieving Financial Stability

Source: The author

minimize costs, for the operational restructuring phase to become successful.

In the literature, this process is referred to as operational restructuring. This form of restructuring would require managers to focus on ways to minimize costs instead of simply maximizing the creation of loans. Loan creation must now be effectively prioritized. Credit policies will have to be tightened to ensure proper targeting of borrowers.

In the interim, the bank should forego investing in unnecessary capital expenditures. As a matter of fact, branches that have not performed well should be closed. Furthermore, it may be necessary to lay off redundant employees. The intended effect of this on the income statement is further reduced expenses and increased net income, and, as far as the cash flow statement of the bank is concerned, ensured transmission to the balance sheet, with whatever liquid resources that can be generated, to augment its Cash Position. Improved cash position will mean more resources can be channelled to expand the bank's lending activities<sup>6</sup>.

Other components of operational structuring measures are the following: design and development of a business strategy intended

*Restoring solvency is not the final object of the bank; it needs to sustain improved conditions by taking on measures to efficiently streamline operations by maximizing revenues and minimizing costs...*

*Under-provisioning implies that capital has to absorb both expected and unexpected losses... which could impact ultimately on the real economy.*

2. Since even doubtful assets can still be booked in the balance sheet, the bank stands to gain twice from under-provisioning: (i) as mentioned earlier, lesser expense bookings in the income statement, hence, higher profits; and (ii) retention of the book or face value of these doubtful assets in the balance sheet, thus, serving as evidence to all stakeholders of the continued viability of the bank<sup>3</sup>.

What exactly is the direct effect of under-provisioning?

According to Cavallo and Majnoni (2001), inadequate assessment of expected credit losses leads to under-provisioning and implies that capital has to absorb both expected and unexpected losses, aggravating the negative impact of minimum capital requirements during periods of recession. They also opined that the general recognition that bank capital should provide a buffer to unexpected losses is, in fact, based on the implicit assumption that expected losses have already been absorbed by adequate loan loss provisions. When, provisions are inadequate, expected losses will impact on the banks' capital. Due to this anomaly, capital shortages become more likely to occur and their impact on the real economy tends to be magnified. As a result, for economies where sound provisioning norms are not embedded in

sound bank practices - as is the case for most emerging economies - the lack of a coherent and internationally accepted regulation of loan loss provisions reduces the usefulness of minimum capital regulation. Some scholars and researchers, foremost among them Cavallo and Majnoni, even suggested and argued that cyclical shortages of bank capital may not only be due to the risk-based regulation of bank capital but, most prominently, to the lack of risk-based regulation of the banks' loan loss provisioning practices.

Figure 4 below shows the transition from a problematic situation to a much more favourable income position.

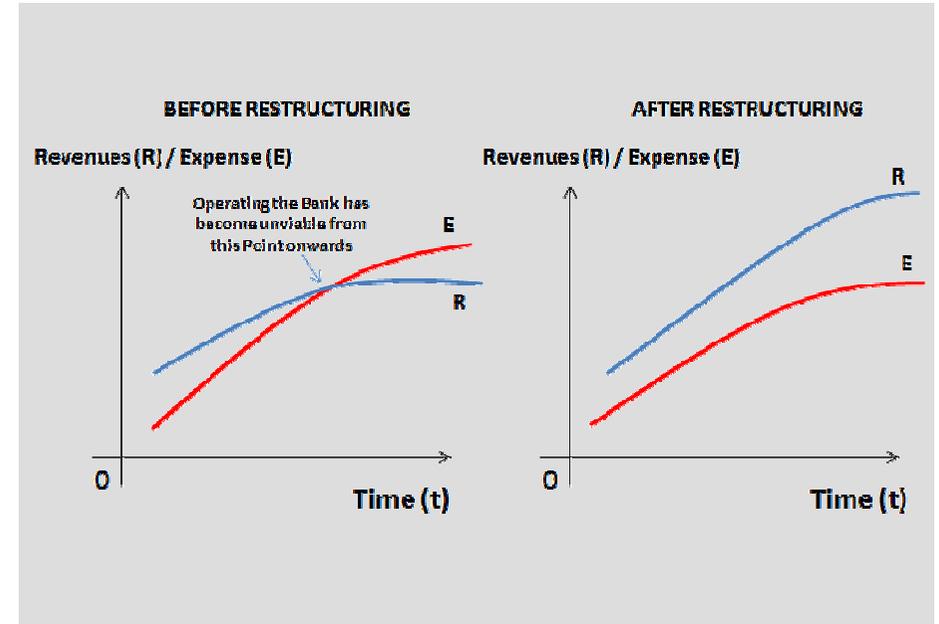


Figure 4. Revenues vs. Expenses Before and After Restructuring

Source: The author

Restoring solvency is not the final object of the bank. It needs to sustain improved conditions by taking on measures needed to efficiently streamline operations to further increase revenues and reduce expenses. The bank, though, cannot afford to maintain expenses at a constant level. The thrust should be simultaneous: maximize revenues and

higher level of net income at the income statement side.

In the IS, the loan loss provisions will be reversed from an expense to an accounting income. Moreover losses that were incurred out of selling the NPAs at a discount will be staggered – as a form of accounting relief. This will improve net income, and when transmitted to the balance sheet, particularly, to retained earnings of the item SE, SE will improve, countervailing the slight drop in TR resulting from the discounted sale of NPAs.

These interventions will certainly improve the income position of the bank.

Assume the following:

- a. As a result of fresh capital infused from the “White Knight” and the BSP, the bank can now continue to create additional loans. This will generate also additional interest income for the bank.
- b. As a result of the extension of accounting relief measures, the bank will be able to stagger its losses and reverse LLPs. These will improve the net income of the bank.

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## Non-Performing Loans

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*Central Banks should never relax its guard during periods of exuberance; this is one of the biggest mistakes that could be committed by bank regulators and supervisors.*

**R**elaxing regulation, especially during periods of exuberance, was one of the biggest mistakes committed by regulators/supervisors. Past experiences has shown that a period of exuberance, particularly the unrestrained kind, will not last long. A peak would be reached. Thereafter, a period of economic slowdown will inevitably follow. Scholars, therefore, insist that Central Banks should never relax its guard because excesses are bound to be committed, specifically, when banks are awash with money.

Dziobek and Pazarbasioglu (1998) of the International Monetary Fund (IMF) declared that prompt corrective action is a key ingredient of successful banking supervision and reform. The countries making substantial progress all took action within a year of the emergence of their banking problems. This immediate response will only be effective if the regulator continues to perform its avowed mandate regardless of the economic regime.

The inability of the regulator to spot ominous signals can lead to serious problems.

The solutions will be more costly. This will sometimes require the implementation of very unpopular and painful restructuring measures. Experience has shown consistently that during a crisis, regulators are often caught flat-footed.

The increase in housing demand during economic activity peaks open lending opportunities for banks. Assuming that banks are awash with cash, they will scramble to seek out borrowers, sometimes regardless of their capacity to pay. In countries where the regulatory framework is more regimented, borrowers will be required to cover their loans with physical collaterals such as real estate and other forms of securities. In the event of default and foreclosure is inevitable, the banks are, at least, insulated from debilitating losses since somehow they can turn to the collaterals for future liquidity. They can also, subsequently, even book these assets in their balance sheets<sup>4</sup>.

*Solutions... sometimes require the implementation of very unpopular and painful restructuring measures.*

*...the effect of these relief measures will impact positively on the bank's income statement... which is then transmitted into its balance sheet.*

increase in the total value of SE. Hence, retained earnings will improve as a direct result of higher levels of net income borne out by the said accounting relief.

If the Central Bank buys the so-called “toxic assets” and/or NPAs of the bank, this will dramatically boost the bank’s cash position, and, subsequently, the TR. If not, the same can be sold or transferred to Special Purpose Vehicle (SPV) companies which will manage and, thereafter, sell these assets to the public after their economic values shall have been sufficiently restored.

Assume NPAs and “toxic assets” belong to the portfolio  $X_4$ . If these are sold, the revenues will add up to Cash or  $X_2$  but will reduce  $X_4$ .

$$(3) \text{ TR} = X_1 + (X_2 + X_{2\text{Cash from BSP}} + X_{2\text{Cash from Sale of NPAs}}) + X_3 + X_{\text{Bonds as Income Support}} + X_4 + \dots + X_n$$

However, the bank will not be able to generate the full book value from the sale of NPAs since the same will have to be sold at some discount. Therefore, the decrease in  $X_4$  will be greater than the increase in  $X_2$  Cash from sale of NPAs. Compensating, TR will fall but this is expected to be countervailed by a

infusion of fresh capital at concessionary rates; or conveying to the bank, government bonds, the income derived from coupons, for instance, which are made to accrue to the bank as a form of income support. These bonds should not be sold by the bank to the other parties. However, the bank is allowed to book these bonds as part of its total assets, hence, a mechanism that will effectively countervail the huge drop in total resources. The BSP can also provide regulatory accounting relief, e.g., allowing the bank to stagger its losses over a period of time. The Central Bank, as in the United States experience, can even go to the extent of directly buying the so-called “toxic assets” of the bank to partly improve its liquidity position.

(2)  $TR = X_1 + X_2 + X_3 + X_4 + \dots + X_n$  Initial Stage;

$$TR = X_1 + (X_2 + X_{2\text{Cash from BSP}}) + X_3 + X_{\text{Bonds as Income Support}} + X_4 + \dots + X_n$$

The effect of the accounting relief will directly positively impact on the bank’s income statement and will improve its profit position. The positive effects are then transmitted to the balance sheet, particularly, on retained earnings. The intended effect of these interventions is improved Total Resources. When TR increases, this has to be matched by a proportional

*The BSP can provide relief through, among others, special loan accommodations, allowing the bank to book government bonds as part of its assets, and allowing banks to stagger its loans over a period of time...*

*The experience of the Asian financial crisis of 1997 has shown that non-performing assets could not be easily disposed... even at deep discounts, there were no takers.*

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## The Migration of Non-Performing Loans (NPLs) to Non-Performing Assets (The Philippine Case)

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**T**he Philippines was hit by the crippling Asian financial crisis in 1997. As a result of that crisis, the banking sector was plagued by massive defaults. The portfolio of non-performing loans (NPLs) rose dramatically and eventually these migrated to the portfolio of non-performing assets (NPAs) – booked in the banks’ balance sheets as Real and Other Properties Owned or Acquired (ROPOA or simply ROPA).

That crisis, however, was grossly underestimated, particularly, its lingering effects on the general economy. The assets could not be easily disposed. Moreover, if at all there were interested buyers, the assets can only be sold at such huge and deep discounts. The assets had to shed off substantial economic value so that they can be disposed.

But this was not the last of the problem. Even at deep discounts, there were no takers. Banks were, therefore, forced to maintain these assets in their inventory and continue incurring huge administrative costs for their safekeeping, hoping that, eventually, these could be sold off to the public.

The *Bangko Sentral ng Pilipinas* (BSP) estimates in 2002 indicate that of the total NPAs amounting to around PhP 600 billion, only 16 percent were successfully disposed (Figure 1).

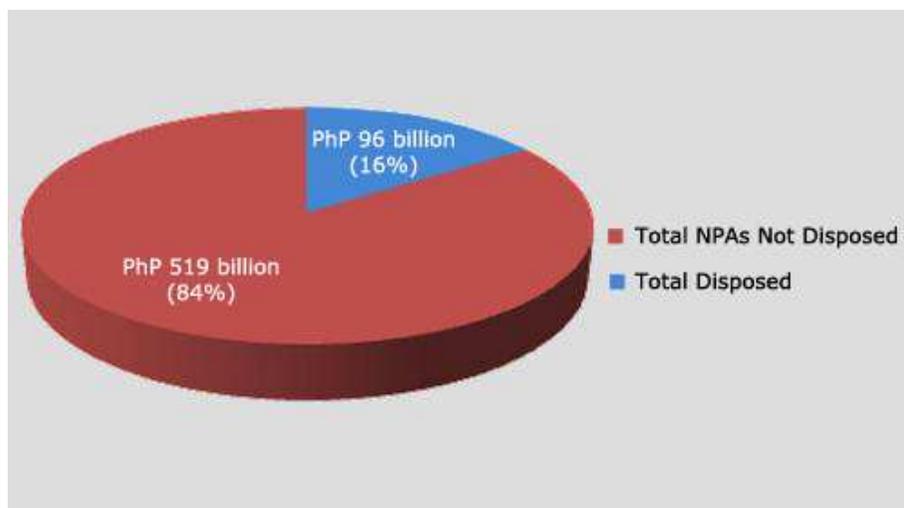


Figure 1. Share of Total Assets Disposed as a Percentage of Total Assets, Philippines, 2002

Source: BSP Supervised Banks Statistics, 2005

The graph above shows that the period of bankruptcy is simply extended a bit. In short, cash flows will continue to fall since no new loans are created — this is assuming that fresh capital infused will be used to service immediate obligations, such as deposit withdrawals and a call of payments of other creditors.

The bank has to adopt more drastic measures since the problem is not easily solved by mere fresh capital infusion. Of course, the first and foremost objective is to restore immediate solvency. This is the essence of financial restructuring — improving the bank's balance sheet. The infusion of fresh capital by the existing owners or a “White Knight” for that matter is the first step to be undertaken.

$$(1) SE = Y_1 + Y_2 + Y_3 \text{ initial stage;}$$

$$SE = (Y_{1+} Y_{\text{Fresh Equity}}) + Y_2 + Y_3$$

What other steps should be undertaken?

Usually, the entry of a “White Knight” or new outside investors is suggested by the BSP, and the understanding is that once the new investors come in, the BSP will also provide counterpart liquidity support, in the form of special loan accommodations, such as direct

*... and the understanding is that once a “White Knight” comes in, the BSP will also provide counterpart liquidity support.*

For one, the BSP will require the bank to put up additional capital to immediately restore solvency. If the present stockholders are not capable of putting up the resources, then the BSP will suggest that the bank attracts a so-called “White Knight” to provide the additional capital. In effect, the entry of the “White Knight” will cause the dilution of the shareholdings of the present shareholders or altogether the “White Knight” acquires all the existing or majority of the outstanding stocks. This will vest controlling interest on the “White Knight” over the bank.

*The Bangko Sentral ng Pilipinas (BSP) usually encourages the entry of a “White Knight” to provide additional capital to an insolvent bank...*

Will this solve the problem? Figure 3 below will illustrate the immediate effect.

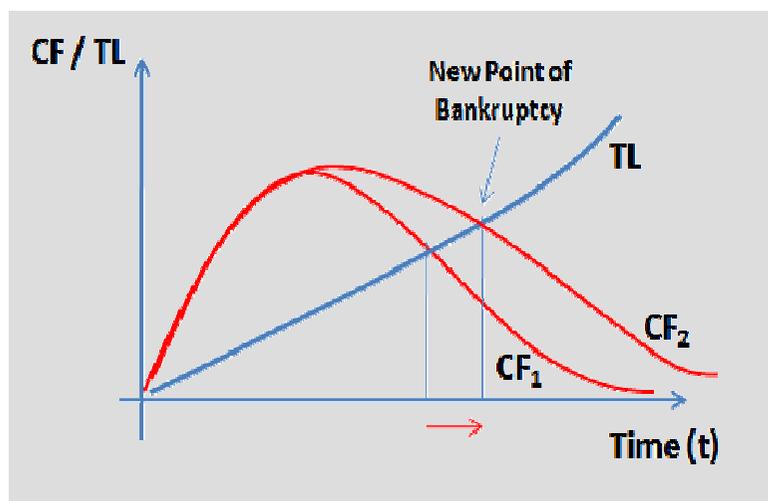


Figure 3. The New Point of Bankruptcy

Source: The author

Bayot (2007) made the following observations:

1. NPAs that cannot be immediately sold or disposed will result in the banks' undercapitalization, and will worsen its liquidity problem.
2. If the liquidity position of the banks were to become imperilled as a result of their inability to sell these assets, fewer loans will be created and will result in the tightening of future cash flows. Hence a credit crunch will certainly ensue.
3. Worse, a new accounting system, the International Accounting Standards (IAS) has been implemented, which would now require banks to also provide allowances or provisions for losses for NPAs, based on the probability of selling and on the age of the assets. This will have a huge negative effect on the income position of the banks. As a result, the value of the assets have to undergo constant yearly impairment. If the same are not immediately sold, the time will come when the assets will take on zero value, with serious implications on the balance sheet.
4. Furthermore, the Mart-to-Market criteria of valuation which was later adopted, forced banks to value the assets and book the same in their balance sheets given their present fair market value which was already impaired.

*The imposition of the International Accounting Standards (IAS) required banks to also provide allowances for losses in their non-performing assets — this had a huge negative impact on the income position of banks.*

It was a “time bomb” waiting to explode – until the Special Purpose Vehicle (SPV) Law was enacted in 2002.

The SPV Law was passed by the Philippine Congress in 2002 and in response to the worsening financial situation of banks brought about by the piling up of NPAs in their inventories. The SPV Act of 2002 is considered a timely and landmark piece of legislation. It was promulgated at the time when the viability of banks and financial institutions (FIs), including the entire financial system, seemed threatened and imperilled by systemic financial disturbances brought about previously by the Asian financial crisis.

*The Special Purpose Vehicle Law of 2002 was a timely and landmark piece of legislation... it was enacted to help banks and financial institutions unload their huge inventories of non-performing assets.*

The SPV Act of 2002 was enacted to help banks and FIs unload their huge inventories of NPAs, which were accumulated in such a short period of time. Briefly, the SPV Act<sup>5</sup> allows the direct transfer of these assets to an SPV company, which would sell these assets to investors. In effect, the SPV company was tasked with restoring economic value to non-performing assets.

However, it appeared that only few banks and FIs took advantage of the privileges and incentives provided and/or extended by this Law. Only around 53 banks availed of the benefits of the SPV Law. The universal/commercial banks (U/KBs) have the most

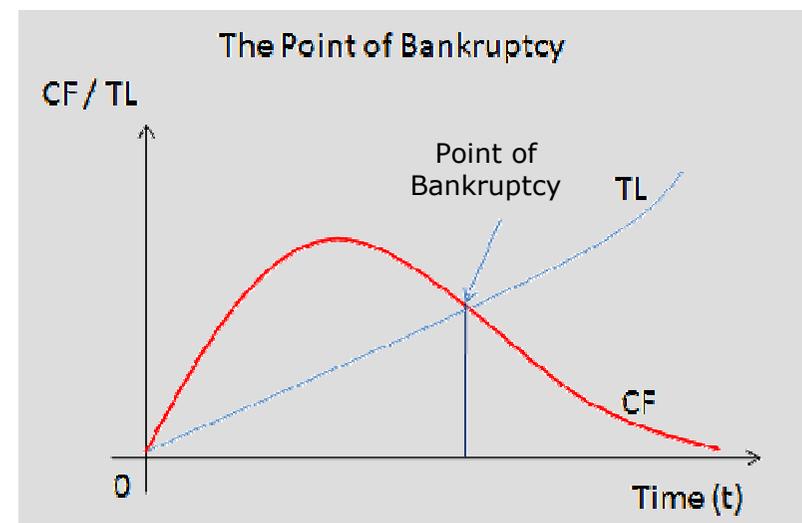


Figure 2. Point of Bankruptcy

Source: The author

Since, obviously, the cash flows could no longer service maturing liabilities, the bank will have to close shop at the point of bankruptcy.

The hardest part of restructuring or rehabilitation is illustrated in the Philippine experience:

Assuming that the bank is relatively “too big to fail” such that its collapse and closure may trigger a systemic crisis, what immediate solution/s can be proposed to keep it open?

Assume:

$$X_1 = CF_1 + CF_2 + CF_3 + CF_4 \dots + CF_n$$

Only:  $CF_1 + CF_2 + CF_3$  will yield positive cash flows;  
 $CF_4 \dots + CF_n = 0$ , meaning no more cash flows would be forthcoming in the future since these are NPLs waiting to be migrated to the portfolio of non-performing assets.

Alternatively, given:

$$E(X_1) = P_j \sum_{j=1}^n X_{ij}, \quad E(X_1) \text{ can be expanded to read:}$$

$$E(X_1) = P_1 X_{11} + P_2 X_{12} + P_3 X_{13} + P_4 X_{14} + \dots + P_n X_{1n}$$

$$\text{where: } P_1 X_{11} + P_2 X_{12} + P_3 X_{13} = AL, \text{ and;} \\ P_4 X_{14} + \dots + P_n X_{1n} = NPL$$

All ALs hopefully will generate cash flows, therefore:

$$E(X_1) = P_j \sum_{j=1}^n X_{ij} = \sum_{i=1}^n CF_n$$

Since the cash flows of the bank has considerably constricted as a result of defaults, the condition of the bank can now be graphically illustrated as shown below in Figure 2.

number of participants registered at around 61 percent. The thrift banks (TBs) on the other hand, had very poor participation at only 18 percent (Table 1).

Bayot (2007) opined that despite the incentives and benefits provided for by the SPV Law, only about PhP 97 billion of total book value amounting to around PhP 520 billion was recovered by banks and FIs as of year 2005. Recovery rate figured at only around 18 percent (Table 2).

Table 1. *Value of ROPOAs and NPLs Recovered, 2005*

| Item  | Total NPAs<br>(in Billion Pesos) | Transferred to SPV<br>(in Billion Pesos) | % to Total<br>NPL/ROPOA |
|-------|----------------------------------|--|-------------------------|
| NPLs  | 316,531                          | 88,020                                   | 0.2781                  |
| ROPOA | 203,455                          | 8,649                                    | 0.0425                  |
| TOTAL | 519,986                          | 96,669                                   | 0.1859                  |

Source: BSP Supervised Banks Statistics, 2005

Table 2. *Financial Institutions that Availed of SPV Law Incentives, 2005*

| Financial Institutions (FIs) | Number Per Industry | Total No. Of FIs | % of FIs Availed of SPV Law | NPAs Sold (in PhP Billions) |
|------------------------------|---------------------|------------------|-----------------------------|-----------------------------|
| U/KBs                        | 25                  | 41               | 61%                         | 92.349                      |
| TBs                          | 15                  | 64               | 18%                         | 4.001                       |
| RBs                          | 8                   | 754              | 1%                          | 0.142                       |
| NBFIs                        | 5                   |                  |                             | 0.177                       |
| TOTAL                        | 53                  | 859              | 80                          | 96.669                      |

Source: BSP Supervised Banks Statistics, 2005

Table 3 shows that the inventory of NPAs and NPLs decreased over the period 30 June 2002 to 30 June 2005. What needs to be explained is the decrease of NPAs and NPLs of U/KBs of around PhP207 billion. Compare this with the total amount so far recovered of PhP97 billion. The difference of PhP 110 billion can be noted and should have been explained by BSP.

Table 3. *Movement of NPAs, NPLs of Banks, 30-June 02 to 30 June 05*

| NPAs  | 30-Jun-02<br>(in Billion Pesos) | 30-Jun-05<br>(in Billion Pesos) | % Increase<br>(Decrease) |
|-------|---------------------------------|---------------------------------|--------------------------|
| U/KBs | 456.76                          | 363.51                          | (20.42)                  |
| TBs   | 49.04                           | 47.80                           | (2.98)                   |
| RBs   | 14.20                           | 16.34                           | 15.07                    |
| TOTAL | 520.00                          | 427.65                          | (8.33)                   |

| NPLs  | 30-Jun-02<br>(in Billion Pesos) | 30-Jun-05<br>(in Billion Pesos) | % Increase<br>(Decrease) |
|-------|---------------------------------|---------------------------------|--------------------------|
| U/KBs | 288.97                          | 174.87                          | (39.49)                  |
| TBs   | 20.50                           | 16.35                           | (20.24)                  |
| RBs   | 7.07                            | 8.01                            | 13.30                    |
| TOTAL | 316.54                          | 199.23                          | (46.43)                  |

Source: BSP Supervised Banks Statistics, 2005

Re-tracing back again, it was said that:

$$E(X_1) = P_j \sum_{j=1}^n X_{ij}$$

$$\text{where: } \sum_{j=1}^n P_j = 1, \text{ and;}$$

$EX_1$  = Expected Value of  $X_1$ , since it will be important to approximate how much will be recovered and/or collected from the entire portfolio.

The sub-components of  $X_1$  consist of some accounts that have permanently defaulted but have not yet been migrated to the portfolio of Non-Performing Assets (NPAs). Some accounts have remained active; some accounts are occasionally being serviced by borrowers. If so, there is, once more, a need to re-write  $X_1$  to reflect its final simplest form:

$$X_1 = AL + NPLs$$

where: AL = active or current loans;  
NPLs = non-performing loans.

The probability of collecting from NPLs = 0, and

The probability of collecting from AL declines as the accounts age.

The bottom line is generating new deposits would not increase the bank's future cash flow since these newly mobilized deposits can be used to cover deposit withdrawals, operational expenditures, and other maturing liabilities. It is altogether possible, therefore, that none will be left to create new loans. Technically, this practice merely tends to prolong, for a very short period of time, the eventual closure of the bank.

The ideal situation is:

Deposit Mobilization (DM) should create New Loans (NL), hence, increase future cash flows for the bank.

The necessary condition is therefore:

$$NL = CF_1 + CF_2 + CF_3 + \dots + CF_n$$

where: CFs are future cash flows.

If DM is simply used to service maturing obligations of banks and its operational expenses,

$$CF_1 + CF_2 + CF_3 + \dots + CF_n = 0, \text{ therefore;}$$

The Central Bank might, as well, close the bank.

*SPV companies have realized that many of the assets cannot easily be sold because many of them are heavily encumbered.*

Overall, some flaws were apparent in the design of the SPV Law which may have discouraged many banks and FIs to avail themselves of its supposedly many benefits and incentives. SPV companies have expressed concern that despite the fact that they were able to acquire NPAs from banks and FIs at deep discounts, they have realized that many of the assets cannot be easily sold because many of them are heavily encumbered. While waiting for court clearances to be issued, discounts were slowly being eaten up by costs in managing and administering these assets.

Exactly, how would the benefits from SPV Law positively affect the balance sheets of banks?

If the assets were sold at deep discounts relative to their book values, then necessarily, losses would have to be incurred, and this would clearly manifest in the banks' income statements. Therefore, instead of booking these losses on a one-time basis and on the period when the transfer was effected, the Law allowed the banks to stagger the booking of these losses for a period of 10 years. In effect, it spread out the losses. Profits would not fall dramatically. Hence, when reckoned with retained earnings at the balance sheet side, incurring huge deficits is effectively precluded. Note that a huge deficit

will necessarily eat up equity, and will render the bank subsequently undercapitalized.

Even when total assets would decline as a result of the de-recognition of these NPAs after the transfer, this will not greatly impact on equity since retained earnings could even rise as moderate profits are generated in the interim. This is brought about precisely by the staggered booking of losses resulting from the sale and/or transfer of these assets to SPV companies. When the assets are de-recognized in the balance sheet side, the loan loss provisions in the income statement side are reversed. Even if the LLP were inadequately booked just the same, the booking reversal would have a positive effect on projected net income.

Landier and Ueda (2009) argued that if the total resources are no longer sufficient to cover total liabilities, even if the payment of some liabilities can be deferred, the optimal response of government is to let the bank go bankrupt. By this time, the bank has very few options left and the solutions may not be readily available. Nevertheless, it was argued that government should make the bankruptcy less destructive.

However, Bennett (2001) wrote that an insolvent bank is more likely to continue to operate in developing economies or economies in transition: one half of local banking regulators in this group have allowed insolvent banks to operate, whereas three (3) of the 14 deposit insurers in advanced economies have done so.

*If a bank has become insolvent, old depositors are technically paid by new depositors but this practice is not sustainable since there is no assurance that the bank can attract new depositors.*

When banks experience this situation, their knee-jerk reaction is to frantically generate and/or mobilize more deposits and even offer above-market deposit rates, assuming that they are not closed by the Central Bank. If the bank remains solvent, it will be able to pay old depositors. If it has become insolvent, old depositors are technically paid by new depositors, but this practice is obviously not sustainable since there is no assurance that new depositors can readily be attracted.

On the solvency issue, the necessary condition is as follows:

$TR > TL$ , so that the bank can continue to service its obligations, and still create new loans.

If  $TR$  falls to  $TR_{Adj}$ , two (2) possibilities can occur:

- a.  $TR_{Adj} = TL$ , no new loans can be created and all existing resources will be simply be earmarked to service maturing obligations and operational expenses; or
- b.  $TR_{Adj} < TL$ , the bank will go bankrupt.

If the bank is adequately capitalized, a drop in total resources will simply be matched by a drop in retained earnings. The bank may even incur a deficit. But if the same is not that substantial, the bank will continue to operate. As previously said, if the drop in resources will be more than substantial, capital will be eaten up. The bank will become insolvent. The Central Bank will supposedly have a clear reason to close the same.

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## The Theoretical Model of Bank Re-Structuring and/or Rehabilitation:

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*A theoretical model of bank restructuring and rehabilitation can be formulated based on certain assumptions about a bank's valuation of its assets, the adequacy of loan loss provisions, and its projection of financial viability.*

**T**his part of the paper specifies a theoretical model for explaining bank restructuring and rehabilitation. The assumptions and theoretical explanations of the model are the following:

1. A subject bank is over-assessing the value of its total assets but is not booking the correct and appropriate loan-loss provisions.
2. As far as its total assets and/or resources are concerned, particularly the item “loans and discounts” in their balance sheet, a substantial percentage of the same are doubtful, meaning, many of these will eventually become bad loans. This notwithstanding, the bank is not providing, accurate loan loss provisions to insulate capital from falling sharply should these assets be finally written off the books.
3. Finally, assuming that the bank's financial statements do not reflect the true financial state and condition of the bank, they would, in general, always tend to show a strong and viable financial picture despite inherent and structural weaknesses.

The bank's Total Resources (TR) can be written as:

(1)  $TR = X_1 + X_2 + X_3 + X_4 + \dots + X_n$  are or simply;

$$TR = \sum_{i=1}^n X_i$$

where:  $X_i$ s = are components of TR such as Loans and Discounts; Cash; Investment in Bonds; and other Debt Instruments; Other Resources, etc.

$X_1$  = that component of TR that particularly represents loans and discounts.

In reality  $X_1$  has sub-components representing a distribution of accounts with varying degrees of collectability.  $X_1$  is therefore transformed into:

(2)  $X_1 = X_{11} + X_{12} + X_{13} + X_{14} + \dots + X_{1n}$  or simply;

$$X_1 = \sum_{j=1}^n X_{ij}$$

Assume in the meantime that all other  $X_i$ s remain constant.

If  $TR = TL + (Y_1 + Y_2 + Y_3)$ , then;

If:  $TR_{\text{Decrease Not Substantial}} = TL + (Y_1 + Y_2 + 0)$

If:  $TR_{\text{Decrease Substantial}} = TL + (0 + Y_2 + 0)$   
 $TL + Y_2$

If:  $TR_{\text{Decrease More than Substantial}} = TL + (0 + 0 + 0)$   
 $TL$

The drop in TR will immediately have a huge impact on the income statement (IS) of the bank. Because of the write-off, the same will be reflected in the IS as automatic expense especially if the LLPs were not correctly booked, hence, considerably deteriorating net income. Since the net income is transmitted to the balance sheet particularly at the SE side, a huge loss will necessarily reduce, at the first instance, retained earnings. If the loss is substantial, and after wiping out retained earnings, this will directly eat up capital.

*The ramifications of these are as follows:*

- a. The bank becomes seriously undercapitalized and this could eventually lead to bankruptcy.
- b. Even the preferred shares could no longer be serviced – not even the principal.

Assume in the meantime that TL remains constant. Recall that  $TR > TR_{adj}$ , therefore:

$$(7) TR_{adj} < TL + SE.$$

If so, to restore equality of the identity specifying thereto that  $TR = TL + SE$ , a necessary condition, and since we have assumed that TL remains constant, therefore, SE must be reduced proportionally to the decline in the value of TR, which is from TR to  $TR_{adj}$ . This will result to:

$$(8) TR_{adj} = TL + SE_{adj}. \text{ The equality is restored.}$$

The following scenarios should, therefore, be expected or predicted to happen:

- If the drop in the value of TR is **not that substantial**, the sub-component  $Y_3$  will be reduced;
- If the drop in the value of TR is **substantial**, the sub-components  $Y_1$  and  $Y_2$  will be reduced in the order for  $Y_1$  to be affected first, then  $Y_2$ .

Loan Loss Provisions are booked to precisely factor in the variability of collecting  $X_i$ . As previously mentioned, however, in Assumption 2, banks do not usually accurately and correctly book LLPs. Banks would always want to reflect higher levels of net income by minimizing LLPs which are booked as expense in the income statement.

Even if, say, LLPs are correctly booked, if the account/s permanently default, most probably the LLPs will not be adequate to fully compensate the full loss that would be incurred by the bank .

Under the scenario of permanent default,

$$LLP < D$$

*where:* D = the total Book Value of the account that will have to be written off as a result of permanent default.

LLPs may therefore become inadequate, as mentioned, to countervail the losses of the bank in case of permanent default.

Recall that  $X_1$  assumes the form:  $X_1 = \sum_{j=1}^n X_{ij}$ ,

however, we would need to further redefine the same to factor in the probability that

some accounts will no longer be able to provide the bank future cash flows. Some will be fully recovered and/or collected; some partially, but the rest would have to be considered as bad debts.  $X_1$  is transformed into the base case expression of:

$$(3) EX_1 = P_1X_{11} + P_2X_{12} + P_3X_{13} + P_4X_{14} + \dots + P_nX_{1n} \text{ or simply;}$$

$$EX_1 = P_j \sum_{j=1}^n X_{ij}$$

$$\text{where: } \sum_{j=1}^n P_j = 1, \text{ and;}$$

$EX_1$  = Expected Value of  $X_1$ , since it will be important to approximate how much will be recovered and/or collected from the entire portfolio.

Recall:

$TR = X_1 + X_2 + X_3 + X_4 + \dots + X_n$  but since  $X_1$  needs to be adjusted since some accounts may no longer be recovered due to permanent defaults, it follows, therefore, that this identity should now be transformed to:

$$(4) TR_{adj} = E(X_1) + X_2 + X_3 + \dots + X_n$$

Because of this adjustment it follows therefore that:

$$TR > TR_{adj}$$

where: TR was the original value of Total Resources. Expanding:

$$(5) \{TR = E(X_1) + X_2 + X_3 + \dots + X_n\} > \{TR_{adj} = E(X_1) + X_2 + X_3 + \dots + X_n\}$$

How will this now affect the balance sheet of the bank?

$$(6) TR = TL + SE$$

where: TR = Total Resources  
TL = Total Liabilities  
SE = Stockholders' Equity

SE is sub-divided into the following components:

$$SE = Y_1 + Y_2 + Y_3$$

where:  $Y_1$  = Equity of Stockholders  
 $Y_2$  = Preferred Shares, *if any*;  
 $Y_3$  = Retained Earnings