



IMF Working Paper

ARCHIVES
ROOM IS11-400 0441

Loan Review, Provisioning, and Macroeconomic Linkages

*Luis Cortavarria, Claudia Dziobek,
Akihiro Kanaya, Inwon Song*

INTERNATIONAL MONETARY FUND

IMF Working Paper

Monetary and Exchange Affairs Department

Loan Review, Provisioning, and Macroeconomic Linkages

Prepared by Luis Cortavarria, Claudia Dziobek, Akihiro Kanaya, Inwon Song¹

Authorized for distribution by David Hoelscher and David Marston

December 2000

Abstract

The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

Loan review is a process routinely used by banks to assess the current value of loan portfolios. Provisioning is a technique to translate loan review results into the balance sheet. It allows for ongoing valuation of loans. Both are core elements of credit risk management and important to prudential oversight. As illustrated in this paper, valuation feeds into indicators of overall bank soundness and key macroprudential indicators. Country practices and recent moves to more forward-looking models are surveyed. Macroeconomic linkages are highlighted, including tax treatment of provisions, variables of the monetary survey, and procyclical aspects of loan valuation systems.

JEL Classification Numbers: E5, G2, H25, K2, O16

Keywords: Nonperforming loans, cyclical bank behavior, capital ratios

Author's E-Mail Address: cdziobek@imf.org, isong@imf.org

¹ Luís Cortavarria is Superintendent of Banks and Insurance, Peru, and Akihiro Kanaya is Manager of the Financial and Payment System Office of the Bank of Japan. The authors would like to thank Messrs. Dalton, Hayward, Hoelscher, Marston and Sundararajan, and other colleagues from the Monetary and Exchange Affairs Department for helpful discussions of earlier drafts. Comments from the Basel Committee on Banking Supervision are also gratefully acknowledged. Ms. Budreckaite provided excellent research assistance.

Contents	Page
I. Introduction	4
II. Loan Review and Classification.....	6
A. A Useful Classification System.....	7
Past due and forward-looking criteria.....	8
B. Classification of Off-Balance Sheet Items.....	8
C. Classification of Restructured Loans.....	10
D. The Notion of "Nonperforming Loans".....	11
Actual levels of nonperforming assets in selected countries.....	12
E. Treatment of Collateral.....	13
III. Loan-Loss Provisioning.....	14
A. General and Specific Provisions.....	14
B. Levels of Required Provisions in Selected Countries.....	14
Phasing-in provisions.....	15
IV. Income and Expense Recognition.....	17
A. Accrual versus Cash.....	17
B. Tax Deductibility of Loan-Loss Provisioning.....	18
V. Linkages with Capital Adequacy	19
General provisions and capital.....	20
Specific provisions and capital.....	20
VI. Macroeconomic Aspects	21
A. Enhanced Data on "Credit to the Economy".....	22
B. Procyclical Aspects of Provisioning and Empirical Evidence	23
Empirical evidence of procyclical effects of ex post provisioning.....	23
Emphasis on more forward-looking loan valuation to counteract bank myopia	25
VII. Forward-Looking Provisioning and Accounting Principles.....	26
VIII. Summary and Conclusions	27
References	29

Text Tables

1. Past-Due Criteria in Selected Loan Classification Systems, 2000.....	9
2. Classification of Restructured Loans in Selected Countries	11
3. Nonperforming Loan Definitions in Selected Asian Countries, 1999	12
4. Levels of Required Provisions in Selected Countries, 2000	16
5. When is a Nonperforming Loan Placed on Cash Accounting?	18
6. How Specific and General Provisions May Impact a Bank's Capital Ratio	21
7. Ex ante versus ex post Criteria for Loan Loss Recognition (and Provisions).....	26

Boxes

1. Public Disclosure of Loan Provisioning.....	19
2. Tax Deductibility of Provisions and Capital	22

Appendix

Loan Valuation in Twelve G-10 Countries	28
---	----

I. INTRODUCTION

Recent banking crises have highlighted the importance of **macroprudential indicators**, as a basis to assess financial stability. Of particular concern are indicators such as nonperforming or restructured loans, measures of bank capitalization, profitability, and the quality of collateral. This paper explores the underpinnings of these concepts.

Well-managed banks invest considerable resources in the review of loan performance. Provisions are a way to adjust the balance sheet consistent with the results of loan review. Both are elements of a credit management framework for banks and also constitute important tools for prudential oversight. Using country examples, this paper describes how bank supervisors use credit management systems to assess bank soundness.

Loan valuation is a complex set of techniques and tools. In a highly stylized fashion, the various elements of credit risk management can be described as a chain of events, starting with **loan review and classification**, entailing, in some cases, the placement of a loan on a **nonaccrual** (cash) basis. Criteria for classification range from *ex post* (payments overdue) to more *forward-looking elements*, involving, where appropriate, empirical data for loan default probabilities. **Collateral** also plays a role for loan value; its valuation adds a further layer of complexity and source of estimation errors, sometimes with systemic consequences. Classification may require further action in the form of establishing appropriate **provisions**. Adequate levels of provisions can be set by the authorities or by banks, ideally at levels approximating loss experience. In this regard, important incentives stem from a supportive **tax treatment** of provisions. Provisions in turn reduce **income** and therefore a bank's **capital** disclosing important information about the banks' condition to the public.

Loan valuation produces important information on the value of the stock of outstanding credit. Since bank loans are in most cases not traded, they have no market price. In some countries there are secondary market of loans, particularly mortgage loans, but depth and liquidity of those market varies and may be thin. Sometimes, market prices can be synthesized from the quotes in the credit derivative market. Its depth and liquidity may be also an issue. For the majority of banks, loan valuation is the main vehicle for tracking the value of a loan portfolio. Thus, valuation can be considered a substitute for market pricing of loans.

Loan valuation has direct implications for macroeconomic analysis, in particular estimates of **aggregate credit**. Timely valuation adjustments are a precondition for accurate data. Under conditions of macroeconomic instability, or during times of banking sector distress, loan valuation becomes more difficult and lags in loan review can produce significant distortions.

Other aggregate effects arise, for instance when credit risk management systems are biased to *ex post* loss recognition. Recent banking crises in many countries have triggered a debate about whether current practices of provisioning are biased to produce **procyclical bank behavior with macroeconomic effects**, and whether more **anticipatory approaches**

to provisions should be developed to neutralize such effects. Empirical evidence reviewed in this paper does not support a clear link between provisioning and business cycles. Nevertheless, from the perspective of financial soundness, a case can be made for more forward-looking valuation approaches.

The terms used in this paper are defined as follows. Loan review is an ongoing monitoring process, which relies on classification of loans into various categories of performance as an analytical tool. Classification is also often used by bank supervisors as a benchmark in assessing a bank's soundness. The results of a loan review may translate into adjustments of loan values through allowances or provisions. For example, if loan review reveals a loss of value, the loss would be recognized as an expense to the bank by establishing a provision. This, in turn, is mirrored in the bank's capital ratio which, as illustrated in this paper, most likely falls as provisions increase. Loan review and provisioning are key ingredients of capital ratio calculation. Of course, when losses identified in loan review do not translate into provisions, there would be no measurable impact on capital. Banks may publish information about the ratio of nonperforming loans but this does not necessarily imply that appropriate provisions have been established.²

Well-designed and consistently applied procedures on loan review and provisioning are important from a prudential regulatory perspective and for all market participants for comparability of balance sheets. Weak rules reduce the meaningfulness of bank balance sheet data, including that of capital ratios. Regulators in most G-10 countries place great emphasis on judgmental factors and grant banks considerable latitude in using internal models for loan valuation. By contrast, many emerging countries apply more formal systems with relatively more emphasis on objective factors. While there is no international best practice system of loan classification and provisioning, cross-country comparisons show that many countries, including the larger emerging countries have converged to somewhat similar loan classification systems and have somewhat similar guidelines for adequate levels of provisioning. This paper illustrates such systems.

This paper discusses the elements of loan valuation and its linkages to banking soundness and macroeconomic trends. It includes country surveys. Section II discusses loan review and classification, Section III focuses on provisioning. Sections IV and V highlight linkages with profitability and capital ratios respectively. Sections VI and VII discuss macroeconomic aspects and the policy debate about anticipatory provisioning. Summary and Conclusions are included in Section VIII. In each section country examples and illustrations are given, and Appendix I summarizes a survey of G-10 country practices.

² This paper is focused on loans but in many respects apply to bank assets, more generally "loans" and "assets" are sometimes used interchangeably. The authors recognize that the economic terminology is not always fully in line with accounting terms. For example, "provision," and "allowance for loan losses" are used synonymously. Also, the term "nonperforming loan" is used interchangeably with "impaired loan", the accounting term.

II. LOAN REVIEW AND CLASSIFICATION

In most countries, banks value their loans at historic cost (the face value of the loan as noted in the loan contract) and make periodic adjustments to the value based on loan valuation. Loan valuation of a portfolio of loans can be done by classifying loans into different categories which reflect different default risk profiles. However, there is neither a uniform loan classification technique, nor a standard procedure to assess loan risk on a worldwide basis. In some countries banks determine their own systems of classification. In other countries, the bank regulatory agency sets detailed rules on loan classification. While loan review can provide a good estimate of a bank's loan portfolio, this does not necessarily imply cross-country comparability of such figures. The following principles and guidelines can be considered desirable but actual implementation varies widely.

Broad categorization of loans for review

A sound loan classification system should have the following features:

- **Individual large loans** should be analyzed separately. Key criteria are (a) the overall financial condition and resources of the borrower measured by the current and stabilized cash flow (repayment capacity); (b) the credit history of the borrower; (c) the borrower's character; (d) the purpose of the credit; and, as appropriate, (e) the types of secondary sources of repayment available, such as a guarantor support and/or collateral.
- **Pools of similar types of loans with small denomination**, for which a loan-by-loan analysis is too costly, could be analyzed collectively using statistical methods (housing and consumer loans). The same criteria as for large loans apply.
- Other groupings of loans may be appropriate (real estate, agricultural, commercial).

Subjectivity and objectivity

A loan classification process inevitably includes an element of judgment by credit analyst officers, and internal or external auditors. Subjective factors comprise personal experience and knowledge of the credit reviewer; macroeconomic or sectoral forecasts; value of collateral; market sentiment; and the borrower's character.

In many developing countries the credit staff at banks and bank supervisors may not have sufficient background to form sound judgment. Similarly, in highly unstable economies it is difficult to establish a good basis for judgment. Moreover, under such conditions banks may be reluctant to use their own judgment to adversely classify a loan and establish provisions on the basis of subjective judgment. Under such conditions, supervisory authorities often find it useful to rely primarily on more standardized factors that can be applied routinely in the classification process. The application of rules-based criteria by the supervisory authorities (as well as by banks) can be a useful second best.

A. A Useful Classification System

To assess loan quality, credit analysts segregate the banks' loan portfolio into risk categories according to certain specifications.³ The U.S. guidelines are a good example of a relatively simple and transparent grid. The system includes five categories: standard, special mention, substandard, doubtful, and loss.⁴

- **Standard assets:** Loans in this category are performing and have sound fundamentals. (Fundamentals include the borrower's overall financial condition, resources and cash flow, credit history, and character. They also include the purpose of the loan, and types of secondary sources of repayment).
- **Specially mentioned loans:** Loans in this category are performing but have potential weaknesses which, if not corrected, may weaken the loan and the bank's asset quality. Examples are: credit that the lending officer is unable to properly supervise; an inadequate loan agreement; uncertainty of the condition of collateral, or other deviations from prudent lending practices.
- **Substandard loans:** Loans in this category have well-defined weaknesses, where the current sound worth and paying capacity of the borrower is not assured. Orderly repayment of debt is in jeopardy.
- **Doubtful loans:** Doubtful loans exhibit all the characteristics of substandard loans, with the added characteristics that collection in full is highly questionable and improbable. Classification of "loss" is deferred because of specific pending factors which may strengthen the asset. Such factors include merger, acquisition, or liquidation procedures, capital injection, perfecting liens on additional collateral, and refinancing plans.
- **Loss loans:** are considered uncollectible and of such little value that their continuance as bankable assets is not warranted. This classification does not mean that the asset has absolutely no recovery or salvage value, but rather that it is not practical or desirable to defer full provision or writing off this basically worthless loan. Partial recovery may be effected in the future.

³ Some countries allow *split classification* of a loan when there is more certainty regarding the collectibility of a portion of a loan than the remaining balance. However, credit risk classification is usually done by borrower, not by loan.

⁴ U.S. Federal Reserve System, 2000, Commercial Bank Examination Manual, Section 2060.1; www.bog.frb.fed.us/boarddocs/supmanual.

While the U.S. Examination Manual uses multiple criteria to determine an appropriate classification, banks and regulators in many countries often use delinquency as the main benchmark, measured as the number of days or months loan payments are past due.

Past due and forward-looking criteria

As shown in Table 1, many countries refer to the above-mentioned classification system. Often, regulators set guidelines in terms of past due payments. Special mention tends to be for past-due loans up to three months (e.g., Argentina, Czech Republic, Kuwait, Philippines, Rwanda, and Slovak Republic). Some countries do not use this category at all or may have other categories not detailed in this table. Substandard loans tend to be those with overdue payments of up to six months (Argentina, BCEAO, Colombia, Kuwait, Malaysia, Rwanda, and Slovak Republic), while doubtful loans are clustered around 6–12 months overdue (Argentina, Colombia, Czech Republic, Kuwait, Peru, Rwanda, and Slovak Republic). Loss tends to refer to past due beyond one year.

Relying solely on past due introduces a strong bias to recognize losses at a late rather than an early stage. Past due is sometimes used as a proxy when other information is not sufficiently objective, or as a reference to other laws and regulations (commercial or accounting laws). Many countries recognize that loan classification should go beyond this ex post indicator and take into account more forward-looking criteria, particularly repayment capacity and cash flow of the borrower (Basel, 1999a). For that reason, the U.S. guidelines outlined above, stress various factors in addition to past due information. In January 2000, Korea introduced forward-looking criteria to reflect borrowers' capacity to repay. Previously, loan classification guidance was mainly based on delinquency and the presence of collateral, rather than repayment capacity of the borrower. A more in-depth discussion of forward-looking criteria can be found in Section VI below.

B. Classification of Off-Balance Sheet Items

Off-balance sheet activities are commitments or obligations by a bank to provide funds or loans under certain conditions. Typical off-balance-sheet items are loan commitments, commercial letters of credit, stand-by letters of credit, and guarantees. Off-balance-sheet transactions involve credit risks. Credit risk of loan commitments arises from the possibility that the creditworthiness of the customer will deteriorate between the time the commitment is made and the loan takedown occurs. The 1988 Basel Capital Accord (and its current draft revision) incorporates them as additional risk for banks requiring capital.

Table 1. Past-Due Criteria in Selected Loan Classification Systems, 2000 ^{1/}
(in months)

Country	Special mention	Substandard	Doubtful	Loss
Argentina	Up to 3	3-6	6-12	Over 12
Bangladesh	Up to 12	12-36	37-60	61
BCEAO ^{2/}	n.a.	Up to 6	Over 6	n.a.
Chile (Consumer)	Up to 2	2	4	5
Colombia				
Consumer	Up to 2	2-3	3-6	6-12
Other	Up to 4	4-6	6-12	Over 12
Czech Republic	Up to 3	3	6	12
India	n.a.	Up to 18	Over 18	n.a.
Korea ^{3/}				
Secured portion	Up to 3	3	n.a.	n.a.
Unsecured portion	n.a.		3	3
Kuwait	Up to 3	3-6	6-12	Over 12
Malaysia	n.a.	3-6	6-9	Over 9
Mexico (credit card)	1	2	3-6	Over 7
Peru				
Consumer	Up to 1	1-2	2-4	Over 4
Mortgage	Up to 3	3-4	4-12	Over 12
Philippines	Up to 3	Over 3	Over 6 ^{4/}	Over 6 ^{5/}
Poland	Up to 1	1 or qualitative	3	6; borrower in bankruptcy
Rwanda	Up to 3	3-6	6-12	Over 12
Russia	Up to 5 days	Up to 1	1-6	Over 6
Saudi Arabia	Up to 1	1	3-6	n.a.
Slovak Republic	1-3	3-6	6-12	Over 12

Source: IMF and Moody's Investor Services

1/ Other criteria, such as repayment capacity may also apply to loan classification (as shown, e.g., in the case of Poland). Several of the countries listed additionally use "pass" and "special mention" as categories above substandard. G-10 countries use complex systems, a mix of formal rules and management discretion. See Appendix I. In general, banks are expected to use internal models subject to prudential oversight and in accordance with applicable accounting principles and rules. Principles such as "true and fair presentation, consistency, and prudence" are used in all G-10 countries. n.a. means "not applicable."

2/ Central Bank of West African States. Members are Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, and Senegal.

3/ The secured portion can be classified as substandard. Unsecured portion may be classified either doubtful or loss depending the possibility of collection.

4/ A past due unsecured loan can be classified as "doubtful" if it was classified as "substandard" in the previous examination, and the principal has not been reduced at least 20 percent during the previous 12 months.

5/ Six months overdue for an unsecured loan, or six months for a secured loan not in the process of collection and interest unpaid for six months, and loans classified as "doubtful" on which no payment has been done for the last twelve months. Past due loans that are well secured may be classified as substandard-secured.

Considering that off-balance sheet activities hold credit risk, they should be treated the same as loans for classification. When evaluating off-balance-sheet items for the purpose of valuation, careful consideration should be given as to whether the bank is irrevocably committed to advance additional funds under the credit agreement. Good practice requires that if there is a well-defined weakness that jeopardizes repayment of a commitment, the amount of the commitment be classified accordingly. It should be separated into two components: the direct amount (the amount that has been already advanced) and the indirect amount (the amount that must be advanced in the future).

In some derivatives, for example, swaps, where the credit risk is limited to the replacement cost, the maximum loss is only the cost of replacing the contract. In those cases, banks can classify the credit equivalent of off-balance sheet items by using the Basel conversion factors.

C. Classification of Restructured Loans

Restructured (troubled) loans are loans which have been modified at favorable terms and conditions for the borrower due to deterioration of the borrower's financial condition or ability to repay. Restructuring (sometimes also referred to as "workout") may include modification of terms, for example, a reduction in the interest from that originally agreed or a reduction in the principal amount. It may also involve the transfer from the borrower to the bank of real estate, receivables from third party, other assets (as additional collateral), or an equity interest in the borrower in full or partial satisfaction of the loan.⁵

In addition to the prospects and viability of the restructured debtor, the bank's workout capability is an important factor in determining whether a restructured loan agreement is viable. The ultimate loss to the bank may be higher than the losses incurred if the bank had taken early action to seize and liquidate collateral. Credit analysts of banks that classify restructured loans should ensure that restructuring is based on sound underwriting standards such as effective workout plans and internal controls.

Table 2 surveys some country practices. A restructured loan might generally be classified as substandard (as done for example in Czech Republic) or in the same category as prior to restructuring (as done in the Philippines). If justified, a classification as special mention or pass might be considered (Thailand).⁶ Then, after a reasonable period of

⁵ A loan extended or renewed at a stated interest rate equal to the current interest rate for new debt with similar risk is not a restructured troubled loan.

⁶ For example, when a new credible debtor replaces the original borrower. If additional loans are extended to borrowers with restructured loans outstanding, new loans may be subject to the same loan classification category as the restructured loans consistent with the idea that credit risk classification should be done by borrower and not by loan.

demonstrated payment performance (e.g., six months), banks would upgrade a restructured loan. However, if the restructured loan again runs into difficulties, it would also be appropriate to classify a formally restructured loan according to the classification grades.

Table 2. Classification of Restructured Loans in Selected Countries

Czech Republic	Classified as "substandard."
Indonesia	A restructured loan is classified based on the borrower's ability to pay under the new terms, but substandard at best. After <i>three payments</i> under the restructured terms, the loan can be reclassified into upper categories.
Italy ^{1/}	Only the portion subject to restructuring is classified. After twelve months, banks must verify whether restructured loans should be classified as "bad debt" or "substandard."
Korea	A restructured loan is classified as "special mention," "substandard," "doubtful," or "loss" based on forward-looking criteria recently adopted (June 2000).
Malaysia	A restructured loan stays at the same classification as before. After the borrower has serviced the loan for <i>six months</i> , the loan can be reclassified as performing.
Philippines	A restructured loan generally stays at the same classification as before. ^{2/} After the borrower has serviced the loan for <i>three consecutive months</i> , the loan can be reclassified as performing. ^{3/}
Singapore	Restructured loan remains nonperforming and when the borrower has serviced the loan for <i>six months</i> , the loan may be reclassified as performing.
Thailand	Under certain conditions (approval by the Corporate Debt Restructuring Advisory Committee, CDRAC or a Court) a restructured loan can be classified immediately as performing. ^{4/}

Source: IMF, 1999 and staff estimates.

1/ European Monetary Institute (1996).

2/ Loans not classified at time of restructuring become "special mention". Loans with capitalized interest and loans restructured a second time are classified substandard or below.

3/ Six months are required for loans not fully secured by real estate and where loan value is up to 60 percent of appraised value of real estate.

4/ CDRAC was formed by the Bank of Thailand and representatives from debtor and creditor groups to facilitate debt restructuring. See IMF (1999) p. 42.

D. The Notion of "Nonperforming Loans"

The notion of nonperforming loans or assets is often used as a proxy for asset quality of a particular bank or banking system. Although there is no uniform definition of nonperforming assets, in many countries, including most G-10 countries, assets are considered to be nonperforming when (a) principal or interest is due and unpaid for 90 days or more; or (b) interest payment equal to 90-day interest or more have been capitalized, refinanced, or rolled over. As shown in Table 3 below, for countries that are using standard classification systems, nonperforming is often (but not always) defined as loans in the three lowest categories (substandard, doubtful, loss). Nevertheless, as illustrated above in Table 1, the definitions of loan classification vary across countries.

For cross-country data comparability, a common definition of nonperforming loans would be useful (IIF, 1999). Data comparison of nonperforming loans should also consider the level of specific provisions, currently in place to cover losses. In some countries, the legal system makes it difficult for banks to write off nonperforming loans even when banks have established sufficient provisions.⁷ In such cases, a figure of nonperforming loans may be misleading. Adjusting nonperforming loan figures for specific provisions would provide a better basis of analysis and especially for cross-country comparisons.

Table 3. Nonperforming Loan Definitions in Selected Asian Countries, 1999

India	Assets overdue six months
Indonesia	<i>Substandard, doubtful, loss</i> (over three months overdue).
Korea (2000)	Loans overdue over three months plus nonaccrual loans
Malaysia	Substandard (optional), <i>doubtful, loss</i> . Principal or interest overdue by three or by six months (at banks' discretion).
Philippines	<i>Substandard, doubtful, loss</i> Loans payable in monthly installments more than three months overdue and loans repayable on other terms if one month overdue.
Singapore	<i>Substandard</i> and below (over three months).
Thailand	<i>Substandard, doubtful, loss</i> (over three months).

Source: IMF staff

Actual levels of nonperforming assets in selected countries

The proportion of nonperforming loans during banking crises in emerging market countries has generally been much greater than in the industrial world (Alexander and others, 1997). Peak levels of nonperforming loans (in percent of total loans) in the banking sector were about 49 percent in Indonesia, 48 percent in Thailand, 19 percent in Malaysia, and 8 percent in Korea. At the peak of the crisis-year, nonperforming loans in Nordic countries reached about 10 percent of total loans; in the United States, during the savings and loans crisis, it was around 4 percent; and estimates for Japan were at 8 percent (using national definitions), (Barth and Nolle, 1997, and BIS, 1998).

⁷ For example, in some countries tax legislation prevents banks from writing-off bad loans without a court decision on bankruptcy. Write-offs may be impeded by time-consuming bankruptcy procedures as well as by inefficient judicial systems.

During normal times, nonperforming loans relative to total assets for a sample of large banks in industrial countries are even lower, that is Canada 1.92 percent; Denmark 0.19 percent; France 0.26 percent; Italy 1.91 percent; Spain 1.78 percent; U.K. 4.62 percent; (Barth and Nolle, 1997, based on 1993 data).

E. Treatment of Collateral

Collateral constitutes a claim by the lending bank on the debtors' assets in case of default or insolvency. Collateral often but not always plays a role in lending decisions and provisioning. Excessive reliance on collateral can be counterproductive particularly if it substitutes for adequate credit analysis (FDIC, 1997, p. 58; Herring and Wachter, 1999). Bank supervisors sometimes argue that bankers tend to manage uncollateralized loans with more care and more successfully than those secured by collateral.

The most common collateral for commercial or housing loans is real estate. Because property prices may change over time, many supervisors issue guidelines on the ratio of loan value to collateral. For example, several supervisory authorities limit mortgage loans to around 70 percent of valuation (Hungary, Indonesia, Slovak Republic, and Thailand).

The value of collateral is normally not sufficient for determining whether a loan is impaired. Weaknesses in the legal systems and other obstacles make it difficult to ensure rights in foreclosing and disposing of collateral. This should be taken into account in the valuation of collateral. Collateral should be taken into account in establishing provisions. In calculating provisions, a conservative value of the collateral could be deducted from the loan amount. When other sources of repayment become inadequate over time, the importance of the collateral value in the analysis increases.⁸

A primary focus of a credit quality review is the original source of repayment, and the borrower's ability and intent to fulfill the obligation without reliance on the liquidation of collateral that was taken by the bank to improve the quality of the credit. The lending institution must have sufficient information concerning the condition, location, liquidity, and marketability of collateral to demonstrate the collateral's capacity to allow full repayment of the obligation. Collateral should be conservatively valued by reliable, independent experts, and, in general, little or no value should be ascribed to items such as plant and machinery, because the resale value is often subject to rapid changes.

⁸ This would be different for failed banks during banking crises in Latin America and Asia, where a large amount of connected lending was not collateralized.

III. LOAN-LOSS PROVISIONING

Loan-loss provisioning is the vehicle for adjusting the value of loans, so as to reflect loan review and classification.⁹ For example, when review shows that a loan value has become "doubtful," a provision needs to be established to reflect the loss of loan value. In some respect, provisioning is similar to the concept of depreciation of the property and equipment for nonbanks (Dziobek, 1996). The cost of provisions constitutes a normal business expense and reduces bank profit. From a prudential perspective, an important distinction is made between specific and general provisions. This is discussed in the following. This section also provides some country examples.

A. General and Specific Provisions

The Basel Capital Accord and subsequent amendments differentiate between general and specific provisions. The main difference is that general provisions are for possible or latent losses not yet identified, whereas specific provisions reflect identified losses. In some countries, banks are required to hold general provisions as a certain percentage of total loans or assets. Such a requirement may be based on a global analysis of past loss experience rather than on (specific) identified losses.

Specific provisions are based on loan classification as described earlier. These reflect losses already identified. The level of such provisions typically varies with the degree of loan value deterioration as illustrated below. The definitions and rules concerning general and specific provisions vary across countries, but the conceptual difference between provision for latent losses versus provision for already discovered losses can be considered best practice. The conceptual distinction matters for the bank's calculation of capital. Specific provisions should never be considered bank capital, while general provisions can, to some extent, be considered bank capital (see Section V below).

B. Levels of Required Provisions in Selected Countries

General or specific provisions should mirror the probability of loss or the actual reduction in value, given the loan review. However, to arrive at such exact measures, significant information and experience is necessary, which is not available to many banks or in most countries. Levels of losses can also change over time, depending on the overall

⁹ For accounting purposes, it is important to differentiate clearly between the expense associated with provisioning (an income statement item that represents the write off or charge off to recognize an impairment loss), and the resulting balance sheet item (a stock concept, referred to as an "allowance account" in recent international accounting standards). In this paper, the term "level of provisioning" is used to refer to the balance sheet item, and provision for the income item.

economic condition, the evolution of a credit culture, contract law, and court systems' efficiency.

In most G-10 countries the level of provisions is at the bank's discretion, while adequacy of banks' allowance for bad debts is subject to assessment by external auditors and the banking authority. As shown in Table 4 below, in many countries bank supervisors establish required levels of provisions. Standardized levels seem to gravitate toward 20 percent, 50 percent, and 100 percent of loans for substandard, doubtful, and loss categories, respectively. In some countries banks are also required to hold a general provision, which may be considered as a proxy for more forward-looking approaches to provisioning. The summary in Table 4 does not necessarily reflect the full detail of existing rules. Aspects such as value of collateral (Section II.E above), or differentiation of required provision by type of loans are in place in many countries. Nevertheless, Table 4 provides a broad idea of the levels currently in force in a range of countries. G-10 countries do not publish comparable data.

Phasing-in provisions

The question sometimes arises whether new (tighter) provision requirement should be phased in over time in order to give banks a chance to plan for this additional expense. However, it can also be argued that provisioning rules should be fully applied without a phase-in period in order to show the actual level of capital, as a way to increase transparency. Less than full application of provisioning rules may weaken the transparency of capital ratios. This implies instant application of (tighter) rules even if capital ratios fall drastically. This might be accompanied by a policy of phasing-in capital requirements over time.

A number of countries, including Japan, opted for the immediate application of provisioning requirements without a phase in. By contrast, in several Asian countries, the authorities devised systems to phase in more stringent provisioning requirements. For example, in the Philippines, a general provision was phased in starting from 1 percent in October 1998 to 1.5 percent six months later, and to the full level of 2 percent another six months later, by October 1999. Similarly, in Thailand, provisions were phased in over two-and-a-half years (July 1998 until end-2000). In countries where phase-in periods were established, the authorities placed great emphasis on setting an explicit time schedule of introducing the more stringent loan classification and provisioning requirements (as well as capital adequacy requirements).

Table 4. Levels of Required Provisions in Selected Countries, 2000 ^{1/}
(in percent)

Country	Pass ^{2/}	Special Mention ^{3/}	Substandard	Doubtful	Loss
Argentina	1	5	25	50	100
BCEAO ^{4/}	n.a.	n.a.	50	100	n.a.
Chile	0	1	20	60	90
Colombia	0	1	20	50	100
Czech Republic	2	5	20	50	100
India	0.25	n.a.	10	20-100	100
Indonesia	1	5	15	50	100
Korea ^{5/}	0.5	2	20	50	100
Kuwait	2	Management decision	20	50	100
Malaysia ^{6/ 7/}	1.5	n.a.	20	50	100
Mexico	0.5	10	45	65-85	100
Peru	1	3	30	60	100
Philippines ^{7/}	2	5	25	50	100
Poland	0	5	20	50	100
Russia	1	n.a.	20	50	100
Rwanda	n.a.	n.a.	20	50	100
Slovak Republic	0	5	20	50	100
Thailand	1	2	20	50	100

Source: IMF (1999) p. 45; Moody's Banking System Outlook, BIS (1998).

^{1/} For commercial loans, most G-10 countries do not have such general guidelines. Banks are expected to develop suitable and appropriate levels of provisioning based on loss experience and accounting practices.

^{2/} Considered general provision in: Czech Republic, India, Indonesia, Korea, Kuwait, Malaysia, Philippines, Singapore, and Thailand.

^{3/} Considered general provision in Korea and Thailand.

^{4/} Central Bank of West African States. Members are Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, and Senegal.

^{5/} That portion of a loan classified doubtful or loss that is fully secured will normally be classified substandard to the extent of the market value of collateral.

^{6/} Computed against total outstanding loans, including interest, and net of interest in suspect and specific provisions.

^{7/} Provision computed against uncollateralized portion, in case of doubtful and loss.

IV. INCOME AND EXPENSE RECOGNITION

Loan classification can directly affect a bank's income statement. For example, the classification of a given loan may lead to a switch from accrual-based to cash-based income recognition. As illustrated in this section, this may reduce income and, hence, profits and capital. Provisions constitute a business expense and thus enter directly into a bank's income statement. Improper loan valuation often leads to an overstatement of income. Similarly, insufficient provisions translate into underestimation of business costs. Both lead to overstatements of a bank's profits, its capitalization, and may entail higher-than-reasonable tax payments. These issues are explained in the remainder of this section.

A. Accrual versus Cash

Loan contracts generally involve ongoing payments of interest and principal until repayment or renegotiation. It is customary for banks to recognize income on an **accrual basis**, which means expected payments are booked as income. **Cash accounting**, on the other hand is frequently used for nonperforming loans, where income is entered only when it is actually received. When a loan is switched from accrual to cash accounting, this might therefore be considered a signal of loan deterioration.

A switch to cash accounting may reflect a deterioration of the loan value but it does not, by itself, change the legal contract underlying a loan. Interest and principal, and possibly penalty fees, continue to accrue for the borrower while the bank begins to make adjustments for potential losses.¹⁰ In other words, a move to cash accounting for impaired loans appropriately reduces a bank's income flow (as well as tax and dividend obligations) but allows the bank to take action to collect on it.

Where uncollected interest on nonperforming assets is taken into income, the bank's true profits will be overstated and, thus, ultimately its capital and reserves. A bank might pay taxes on income that it has not actually received and is not likely to receive in the future. This leads to the payment of taxes and dividends on income unlikely to be earned. Inappropriate income recognition policies can rapidly distort banks' financial statements, especially when nominal interest rates are high.

To preclude overstatement of income and to ensure timely recognition of nonperforming assets, policies should define nonperforming assets and require the suspension of interest or cessation of accrual on such assets. For this reason, nonperforming assets should be placed on a nonaccrual status so that income is recorded only when it has actually been received in cash. Income adjusted in this way is the proper measure of profit for both prudential and taxation purposes.

¹⁰ When a loan is placed on cash accounting, interest capitalization should also be ceased. However, accrual of interest, penalty fees, etc., should be maintained in a separate account.

The criteria for determining whether interest should cease to be recognized on nonperforming loans vary across countries. In some countries (for example, Canada and the United States), interest is not normally recognized when the payment of interest and principal is 90 days or more overdue. Some countries (the Netherlands) leave it at the discretion of banks and accrued interest is reviewed as part of the determination of provisions. Table 5 below provides some examples. In France, the switch to cash accounting is made as soon as a loan is impaired.¹¹ Alternatively, if accrual continues, an allowance covering the entire amount must be established, which is equivalent to cash accounting. For tax reasons, French Banks most often choose the second option.

Table 5. When is a Nonperforming Loan Placed on Cash Accounting?
Some Country Examples

Country	Debt payments overdue ^{1/} (number of days)
Argentina	90
Brazil	60
Canada	90
Chile	1
France	≤ 90
Korea	30
Singapore	90

^{1/} Other criteria may also apply.

Source: Goldman Sachs (2000), Basel (1998)

B. Tax Deductibility of Loan-Loss Provisioning

Provisions are regular business expenses and their tax treatment is an important policy issue. Well-designed systems for tax recognition of loan loss provisions provide a strong incentive for banks to adequately provision and to do so in a timely fashion. Such a system should permit banks to deduct loan-loss provisions from taxable income as a normal operating expense in the similar manner with the depreciation, depletion, or amortization of other assets, provided that banks apply consistently and strictly the system of loan-loss provisioning based on the reasonable way of estimating loss probabilities (Dziobek, 1996). General provisions are often not tax deductible.

In some countries tax authorities allow tax deductibility only when the bank has declared a "write-off" or the borrower has declared bankruptcy. This restrictive practice

¹¹ Impairment in France is given when at least one of three conditions exists: ninety days past-due, probable or certain risk of default of borrower, litigation loan.

suggests that provisions are not recognized as tax deductible on a timely basis (because bankruptcy is generally the final stage of an ongoing process of deterioration that should be recognized by loan valuation systems). Such restrictive tax systems also weaken banks' incentives to provision adequately even when prudential rules require provisioning.

Of course, in well-functioning financial markets, the role of external audit evaluation is an important one as well in determining provisioning expenses. In this context, if bank management fails to properly recognize loan impairment because of tax-based rules, it would be incumbent on the bank supervisor or the external auditor to suggest that there be an accounting adjustment to ensure proper valuation of assets. Similarly, in highly efficient markets, disclosure of accounting policies would push banks to publish the true value of assets. Box 1 summarizes some principles on disclosure of provisioning.

Box 1. Public Disclosure of Loan Provisioning

As market forces are growing in prominence worldwide, the traditional emphasis on official oversight and safety nets has shifted toward increased reliance on market discipline.

A bank should disclose to the public information about the composition of the loan portfolio based on a meaningful categorization of borrowers (for example, commercial loans, consumer loans, and related parties), nonperforming loans, and past due loans by major categories of borrowers, and restructured loans.

Information should also be provided on all significant accounting policies for the loans, nonperforming loans, and loan classification system; past due loans, related provisions, income recognition on nonperforming loans, written-off loans, and accounting for recoveries. Disclosed information on loan-loss provisions, if presented in a constant and reliable format, constitutes an important indicator by which market participants can judge the condition of a bank.

Information should be provided on a consolidated basis.

Sources: Basel (1999a), pp. 31-37.

V. LINKAGES WITH CAPITAL ADEQUACY

Loan valuation and capital adequacy are closely linked. This section provides a simplified mechanical description of the linkages between loan valuation, provisioning, and capital adequacy. It highlights the point that capital ratios are only meaningful when its components are well defined.

In a highly simplified form, a capital ratio is measured by comparing eligible capital to eligible assets. Following the Basel Capital Accord, capital is divided into Tier 1 and Tier 2 components (Tier 3 market-risk component is not considered in these examples). Tier 1 is paid-in capital, or shares and retained earnings. Tier 2 includes various debt elements and to some extent general provisions. Total assets may be risk weighted, although simple "leverage" ratios (without differential risk-weights) are also meaningful and are often used.

Capital is of crucial importance to banks because prudential corrective action is often based on capital performance. For instance, a bank's capital falling below the minimum required level usually entails corrective action by supervisors. The following discussion of accounting practices provides some further details on how provisions may affect capital ratios.

General provisions and capital

Using the Basel definition, general provisions are a cushion for unforeseen losses. In this sense, general provisions have some similarity with capital. Nevertheless, general provisions do mirror potential (as yet unspecified) losses and are therefore not fully included as capital. The Basle Capital Accord allows bank to include general provisions in Tier-2 capital, up to 1.25 percent of (risk) assets. Country practices vary and some countries do not allow banks to count general provisions toward regulatory capital.

Concerning the denominator of a capital ratio, it is common practice in G-10 countries not to change the value of assets when general provisions are established. The rationale is that a general provision does not refer to an identified loss.

Specific provisions and capital

Following a common accounting method, used in virtually all G-10 countries, specific provisions reduce income and are not included in capital. This practice is based on the logic that capital adequacy ratios should be a mirror of banks' ability to absorb *unexpected losses*. Specific provisions are established for an *expected loss* and, hence, should be excluded from capital.

Most G-10 countries require that banks deduct specific provisions from loans, which reduces the value of total assets and, hence, the value of capital, which is a residual (assets minus liabilities). Applying this method, specific provisions reduce the numerator as well as the denominator of the capital ratio. The following simplified examples in Table 6 illustrate how general and specific provisions may affect a bank's capital ratio (capital divided by assets). The result depends on the nature and level of provision. As explained above, specific provisions are usually deducted from assets and general provisions are not, leaving the value of assets unchanged. Similarly, the inclusion in capital depends on the nature of provisions. The examples below are for a hypothetical bank with initial assets of 100, liabilities of 90, and capital (calculated as assets minus liabilities) of 10. A simple capital ratio for this bank equals 10. The first two examples assume a general provision of 2, leaving total assets unchanged at 100. In one case the provision is fully included in the capital, and in the other case not fully included in the capital (in observation of the Basel limit of 1.25 percent of

capital). In the first example, the capital ratio remains unchanged at 10, and in the second example the ratio falls to 9.25.¹²

The impact of specific provisions on capital ratios is illustrated in Examples 3 and 4, in Table 6. The capital-to-asset ratio falls (because the numerator is always smaller than the denominator). The same logic applies to write offs of nonperforming loans. Example 3 illustrates a case where specific provisions are not deducted from loans, an accounting practice commonly found in non G-10 countries.

Table 6. How Specific and General Provisions May Impact a Bank's Capital Ratio ^{1/}

Initial Capital Ratio is assumed to be 10 Percent	
Example 1	General provision of 2 deducted from income and fully included as (Tier 2) capital. Capital ratio: $(100-90-2+2)/(100) = 10.0$ percent
Example 2	General provision of 2 deducted from income and partially included as (Tier 2) capital (applying Basel limit of 1.25 percent of assets). Capital ratio: $(100-90-2+1.25)/(100) = 9.25$ percent
Example 3	Specific provision of 2, deducted from income and from loans (not included as capital). Capital ratio: $(98-90)/(100-2) = 8.16$ percent
Example 4	Specific provision of 2, deducted from income (not included as capital). Capital ratio: $(100-90-2)/(100) = 8.00$ percent

^{1/} Initial capital ratio is 10 percent. In each example, initial assets are 100, liabilities are 90 and the provision is 2, and a simple capital-to-asset ratio is calculated. Thus, before provisions, the ratio is $(100-90)/100 = 10$ percent. (Capital is calculated as a residual (assets minus liabilities)).

In analyzing the impact of provisions on capital, the role of taxes must also be considered. Box 2 illustrates that tax deductibility can increase the capital ratio. This case may be applicable in emerging countries that require banks to maintain a minimum level of general provisions, often as part of a more forward-looking approach to provisioning. Under such circumstances, the tax deductibility of general provisions can increase capital to asset ratios, providing a strong incentive to banks to comply.

VI. MACROECONOMIC ASPECTS

Loan valuation and provisioning can have direct or indirect macroeconomic linkages. On the fiscal side, the tax treatment of loan loss provisions is an important factor, which was already touched upon in Section V above.

¹² It should be noted, however, that the value of total assets remains unchanged. Since total assets are often looked upon as an indicator of bank size and market share, this is a noteworthy aspect of general provisions.

On the monetary side, loan classification and provisioning is incorporated in aggregate measures of credit to the economy. Nonperforming loans are also increasingly viewed as a macroprudential indicator reflecting banking soundness. In the wake of systemic banking crises in many emerging countries, restructured loans are used as indicators of success in crisis management. The need for uniform terms was discussed above.

More broadly, the possible procyclical macroeconomic effects of classification and provisioning systems have been the subjects of recent debate. It is argued, for example, that provisioning practices with a focus on *ex post* factors may have played a role in amplifying financial crises, and regulators in many countries are encouraging banks to use more forward-looking loan valuation. The remainder of this section examines the monetary and procyclical aspects are discussed in more depth.

Box 2. Tax Deductibility of Provisions and Capital

In the aftermath of the Asian crisis, a number of countries have opted for mandatory general provisions as a percentage of total loans. The following example illustrates the importance of its tax treatment.^{1/}

Assumptions:

1. Income (before general provision) and before tax is 2.
 2. Tax rate is 50 percent.
 3. General provision is tax deductible.
- Value of assets remains unchanged.

Case 1: before general provision.

Income increases capital (retained earnings) by 1 percentage point after tax payment.
Capital ratio: $(100-90+1)/(100)= 11 \text{ percent.}$

Case 2: making general provision of "1".

General provision of 1 deducted from income and included as (Tier 2) capital (below Basel limit of 1.25 percent of assets). "Income after general provision and tax" increases capital (retained earnings) by 0.5 point.

Capital ratio: $(100-90+0.5+1)/(100)= 11.5 \text{ percent.}$

By making general provision, banks can increase the capital ratio, because they can reduce the tax payment by the amount of (general provision * tax rate). Therefore, banks have a strong incentive to make general provision up to 1.25 percent of assets.

^{1/} This example assumes congruence of tax and prudential accounting, not usually found in practice.

A. Enhanced Data on "Credit to the Economy"

Figures on domestic credit to nonbanks, a core component of monetary analysis is often reported on a gross basis, including provisions. This practice differs from many industrial countries which collect aggregate credit data on a net basis, subtracting specific provisions. Gross-credit figures can produce distorting results, especially in times of rapid deterioration of asset quality. Under such conditions, banks may incur significant losses and establish provisions which are not reflected in aggregate credit growth. This can distort macroeconomic relationships involving credit variables. Similarly, with high levels of

nonperforming loans, liquidity management by banks and central banks becomes more difficult. This should be considered in interpreting monetary data. Frécaut and Sidgwick (1998) provide some empirical evidence for these mechanisms. The ongoing work on macroprudential indicators in the IMF addresses the issues in more depth.

In this regard, additional information on loan classification and provisions would be important to obtain a fuller picture of the quality of credit growth. This allows for an adjustment of credit for provisions (subtracting provisions from the figure of credit to the economy), and an analysis of credit growth on a net basis (Frécaut and Sidgwick, 1998). Of course a one-time adjustment should not necessarily be interpreted as a contraction as it may simply show that the actual level of outstanding credit (adjusted for loan loss provisions) is lower than previously thought.

B. Procyclical Aspects of Provisioning and Empirical Evidence

Classification and provisioning methods which emphasize *ex post* criteria (such as interest past due) could have a procyclical economic impact, an issue that has been raised in the context of the financial stability forum (Basel 2000). Procyclical effects could be transmitted through several different channels.

For example, during an expansion, default rates typically fall, and banks relying mainly in *ex post* criteria respond by reducing the level of provisions, showing higher profits, and distributing more dividends. During the next contraction, when default rates rise, banks are suddenly faced with the need for higher provisions, reducing capital, lowering the banks' financial strength, and reducing their ability to lend, thus contributing to a protracted downturn. An amplified effect could result when bank-lending behavior changes over the course of the business cycle. For example, during a protracted expansion, the quality of new loans may decline because banks become too optimistic about borrowers' repayment capacity. In this case, *ex post* focused loan review and provisioning systems may fail to register the decline in asset quality while the expansion is ongoing. During the following contraction, banks may then experience an over proportional rise in nonperforming loans.

A different channel might also be at work. Regulators sometimes react to systemic bank unsoundness by taking immediate measures to tighten provisioning regulations. This can have procyclical effects similar to the ones described above. While in theory these appear to be pervasive mechanisms, the empirical evidence is less convincing. Bank behavior seems to have macroeconomic effects but not necessarily procyclical ones.

Empirical evidence of procyclical effects of *ex post* provisioning

The following selective review of the literature illustrates that it is difficult to establish empirically that bank behavior has procyclical macroeconomic effects and even more difficult to prove that deficient provisioning plays an important role. Thus, truly "anticyclical" provisioning rules are virtually impossible to design. There is, however, evidence for cyclicity of bank behavior and *ex post* provisioning practices providing

incentives for banks to engage in such behavior. Some country studies show that loan standards becomes laxer during expansions and *ex post* provisioning systems would typically fail to detect deteriorating asset quality on a timely basis. More forward-looking analyses would be able to capture changes in lending behavior and changes in asset quality at an early date and would, therefore, be a useful tool for preventive approaches to risk management. This conclusion supports the view held by the Basel Committee (1999a).

In a study of procyclicality of risk-based capital ratios, the Basel Committee (1999) examined potential procyclical effects of capital requirements. It was noted that in times of recession banks are likely to incur higher levels of loan losses and, consequently, higher levels of loan loss provisions (reducing capital) than when the economy is strong. Retained earnings from bank profits, which add to Tier 1 capital, also tend to rise in boom periods and fall during recessions. However, cause and effect remain indeterminate.

The literature on cyclical bank behavior and credit crunch provides some empirical evidence of cycles of bank behavior. An example is a large panel data analysis covering over two million bank loans by 580 U.S. banks from 1977-1993 (Asea and Blomberg, 1998). This study shows an impact on aggregate economic activity, but not necessarily a procyclical one. A German-U.S. comparison of bank lending behavior suggests that German banks show less variability in lending patterns than U.S. banks. (Grossl-Geschwendtner, 1993).

The credit crunch literature postulates that a shortage of bank capital leads to downward shifts in the supply of credit and finds considerable evidence for procyclical bank behavior. Given the close linkages between capital and provisioning, the credit crunch hypothesis would appear to be consistent with *ex post* provisioning systems.

Some studies find credit crunches in the United States during the 1990-1991 recession and in Japan in the recession after 1991. In the United States, a sharp credit slowdown was recognized before and during 1990-91 recession. A complicating factor, however, in almost all studies is the regulatory response during banking distress (tightening regulations), which may itself have produced a procyclical effect during the downturn. However, from a policy perspective, this may be intended in order to bring credit expansion to a more sustainable path.

For example, in the United States, banking regulations were tightened during the early 1990s.¹³ Bernanke and Lown (1991) find a positive correlation between loan growth from the second quarter of 1990 through the first quarter of 1991 with capital ratios at the beginning of the periods. Peek and Rosengren (1995) find that banks in New England that

¹³ The BIS risk-based capital standards began to phase in at the end of 1990 and were fully implemented in 1992. Also, in 1991, the Financial Deposit Insurance Corporation Improvement Act of 1991 codified Prompt Corrective Action, especially the mandatory closure of institutions when their capital ratios fall below 2 percent.

were the target of formal regulatory actions substantially reduced their lending following such actions.

In Japan, starting in 1989, banks were faced with high levels of nonperforming loans in the aftermath of the stock market crash and subsequent decline of property prices after 1992. Though banks charged off nonperforming loans aggressively during the 1990s, the amount of nonperforming loans stayed at a high level. During the same period, Japan experienced the longest recession in the modern era. Several major financial institutions went into bankruptcy in 1997. The securities market scrutinized the conditions of financial institutions more severely and the depositors, both institutional and retail, became conscious about risks. Supervisory authorities introduced stricter regulations in loan classification, including self-assessment schemes and the rules on restructured loans, and loan provisioning. Prompt corrective action was announced in 1997 and formally introduced in 1998. Bayoumi and Morsink (2000) find support for the credit crunch hypothesis in Japan. Although the evidence is mixed whether there was a capital crunch in Korea, or Indonesia after the Asian financial crisis started in July 1997 (IMF 1999a, and b), banks in those countries found difficulties in complying with capital adequacy requirements under stricter loan classification and loan-loss provisioning rules.

In retrospect, it appears that in countries with systemic financial crisis, banks tended to under-provide against potential loss in their assets and, hence, overvalue their assets. In hindsight, loan values (and capital) were vastly overstated. This calls for more emphasis on accuracy in loan valuation and provisioning; including the use of more forward-looking methods. However, another lesson may be contained in the timing and phase in of more stringent rules. Overly ambitious timetables may unduly impede the economic recovery and slow down the return of the banking sector to solvency and soundness.

Emphasis on more forward-looking loan valuation to counteract bank myopia

There appears to be a broad move to incorporate more forward-looking (*ex ante*) factors in provisioning techniques to mirror more accurately the current economic value of a loan. Table 7 lists some examples of criteria for *ex post* versus forward-looking classification.

More forward-looking approaches to provisioning could help raise the overall level of bank soundness and hence its ability to withstand economic shocks or cyclical trends. For example, Korea has opted explicitly for this option. Supervisors and banks in many countries note the practical difficulties in implementing more forward-looking systems. Requiring general provisions for all loans, in addition to application of straight loan valuation and specific provisions, is a simple way of introducing forward-looking element which may be effective. Several countries use this instrument (see Table 4). In industrial countries, general provisions are not usually a prudential requirement, although they are widely used voluntarily by banks to better cushion unforeseen shocks. A large Australian bank has adopted for what is called "Dynamic Provisioning," a model that focuses on anticipatory and forward-looking criteria in establishing provisions. After some years of experience, the

bank's management concludes that this model is a good one, evoking discipline and consistency in risk measurement and raising bank competitiveness. (Westpac 1999, p. 23.) The forward-looking approach to provisioning raises some accounting and shareholder concerns that are discussed below. In France, the Commission Bancaire has developed a proposal for dynamic provisioning in the context of the ongoing reform of the Basel Capital Accord (Commission, 2000).

Table 7. Ex ante versus ex post Criteria for Loan Loss Recognition

Ex post criteria (examples)	Ex ante criteria (examples)
<ul style="list-style-type: none"> • Interest and/or principal past due. • When the loss has been confirmed as a legal event. 	<ul style="list-style-type: none"> • A loss is probable based on statistical analysis (including arrears, aging of balances, past loss experience, current economic conditions). • Credit quality has deteriorated because the lender no longer has reasonable assurance of collection in accordance with the terms of the contract. • Loss is probable based on credit rating information. • Losses attributable to seasonal factors (annual fluctuations around an expected mean of losses over an economic cycle). • Inherent risk.

VII. FORWARD-LOOKING PROVISIONING AND ACCOUNTING PRINCIPLES

Consistency of forward-looking (ex ante) approaches to provisioning from a prudential and accounting perspective is an important issue that remains part of the public debate. From an accounting perspective, such practices raise a question about the nature of such provisions, and whether they can be clearly differentiated from "income smoothing" practices, which might give banks undue discretion in hiding or showing profits. The relevant standard is International Accounting Standard (IAS) 39 on Financial Instruments. According to this standard, impairment is deemed to have occurred when carrying value of an asset exceeds estimated recoverable amount. Objective evidence of impairment (or uncollectability) generally tends to be based on observation of events that have occurred, rather than those which might occur. Paragraph 110 notes, however, that impairment might also consider whether a historical pattern of collections indicates that the entire face value of a portfolio of accounts receivable will not be collected. Impairment may be measured and recognized individually for financial assets that are individually significant, but it may also be measured and recognized on a portfolio basis for a group of similar financial assets.

IAS 39, therefore, does leave some room for ex ante provisioning; for example, in the form of general loan loss allowances for a class or portfolio of assets. Accounting policies

would need to be based on very sound criteria that are applied consistently from one accounting period to another to avoid the possibility of manipulation. The important issue from an accounting and transparency perspective is that such amounts can be clearly identified in the bank's capital.

VIII. SUMMARY AND CONCLUSIONS

Loan review and provisioning are important elements of bank-risk management systems. They are also used for bank supervision. In most G-10 countries, banks are expected to use internal systems of loan valuation although supervisors and auditors may also use various grids and systems to verify adequacy and application. Supervisors in many emerging countries rely on standard systems of loan classification and set standard provisioning levels. Systems should have a forward-looking focus, considering such factors as borrower repayment capacity and economic conditions, as well as *ex post* factors such as interest past due. Due recognition should be given to off-balance sheet items. Collateral values should be considered but not overrated. A tax system that supports timely recognition of loan losses further supports a forward-looking system of loan valuation.

From a macroeconomic perspective, several observations are made. In many non G-10 countries aggregate measures of credit fail to take into account nonperforming loans and provisions. Given the actual levels of nonperforming loans, especially during financial distress, this can lead to considerable errors in policy analysis. Additional aggregate information on provisions and nonperforming loans would allow a fuller analysis of credit flows, particularly in countries with macroeconomic instability or systemic banking distress. Furthermore, the notion of nonperforming loans, an often-cited indicator of systemic bank soundness, does not have a uniform definition. Consequently, it should be used cautiously for cross-country comparisons.

Finally, a focus in many countries on *ex post* factors in analyzing loan quality and in taxation of bank profits can jeopardize systemic soundness, particularly during economic contraction. Best practices already stress forward-looking approaches to loan classification and provisioning. However, because of the operational difficulties of implementation, some countries use mandatory general provisions as a way to incorporate more anticipatory loan valuation. An interesting debate on the viability of forward-looking approaches to risk management, incorporating macroeconomic information, is ongoing.

Loan Valuation in Twelve G-10 Countries

1. When is impairment recognized?		
• When a loss is probable	4 countries	France, Italy, Sweden, U.S.
• When there has been a deterioration in the credit quality of the loan to the extent that the lender no longer has reasonable assurance of collection in accordance with the terms of the contract	5 countries	Canada, Italy, Japan, Switzerland, U.S.
• One of the above and management discretion	5 countries	Belgium, Germany, Luxemburg, Netherlands, U.K.
2. How is loan loss recognized in the financial statements?		
• Reducing the carrying amount of the loan and recognizing a charge in the statement of income	12 countries	
• Setting up a liability and charge to income (one country permits both)	1 country	Switzerland
3. How is each loan loss allowance presented in the balance sheet?		
• Loan loss allowance as deductions from assets	12 countries	
• Loan loss allowances as liabilities (one country permits both)	1 country	Switzerland
4. What conditions require cessation of accrual of interest?		
• Lender no longer has reasonable assurance of timely repayment	7 countries	Belgium, Canada, France, Japan, Luxemburg, Sweden, U.S.
• Payment is contractually a certain period in arrears (unless collateral is sufficient)	5 countries	Canada, France, Japan, Switzerland, U.S.
• Lender has strong assurance that the full amount will not be paid	2 countries	Germany, Luxemburg
• Management discretion/other	5 countries	Germany, Italy, Luxemburg, Netherlands, U.K.
5. Does the regulator have a system for classifying loans?		
No	3 countries	Netherlands, Switzerland, U.K.
Yes conform with accounting	2 countries	Belgium, Sweden
Yes	8 countries	Canada, France, Germany, Italy, Japan, Luxemburg, Sweden, U.S.
<i>Categories used:</i>		
Satisfactory/Pass		Canada, U.S.
Loans involving no apparent risk		Germany
Special mention		Canada, U.S.
Loans involving increased latent risk		Germany
Past due, secured		Japan, Sweden
Loans with reduced interest		Sweden
Sub-standard		Canada, Italy, Japan, U.S.
Doubtful		Canada, France, Japan, Luxembourg, Sweden, U.S.
Bad debts		Italy
Value-adjusted loans		Germany
Irrecoverable		Canada, Japan, Luxembourg, U.S.
Restructured Loans		Italy, Japan
Loans being Restructured		Italy

Source: Basel Committee, 1998 Task Force on Accounting Issues

References

- Alexander, William E., Jeffrey M. Davis, Liam P. Ebrill, and Carl-Johan Lindgren, 1997, *Systemic Bank Restructuring and Macroeconomic Policy* (Washington: International Monetary Fund).
- Asea, Patrick K., Blomberg, Brock, 1998, "Lending Cycles", *Journal of Econometrics*, (March-April).
- Bank for International Settlements, 1998, *Bank Restructuring in the Emerging Market* (Basel: Bank for International Settlements).
- Barth, James, Noelle E. Daniel, and Tara N. Rice, 1997, "Commercial Banking Structure, Regulation and Performance: An International Comparison", Working Paper 97-6 (Washington: Office of the Comptroller of the Currency).
- Basel Committee on Banking Supervision, 2000, *Financial Stability and the Basel Capital Accord*, (FSF Meeting) (Basel: Bank for International Settlements).
- , 1999, *Capital Requirements and Bank Behavior: The Impact of the Basel Accord* (Basel: Bank of International Settlements).
- , 1999a, *Sound Practices for Loan Accounting and Disclosure*, (July) (Basel: Bank for International Settlements).
- , 1998, *Ongoing work in the Basel Committee's Accounting Task Force* (unpublished).
- Bayoumi, Tamim, and James Morsink, 2000, "A Peek Inside the Black Box: The Monetary Transmission Mechanism in Japan," IMF Staff Paper (forthcoming) (Washington: International Monetary Fund).
- Beattie, Vivien A, Peter D. Casson, Richard S. Dale, George W. McKenzie, Charles M.S. Sutcliffe, and Michael J. Turner, 1995, *Banks and Bad Debts: Accounting for Loan Losses in International Banking*, (John Wiley & Sons).
- Bernanke, Ben S., and Cara S. Lown, 1991, "The Credit Crunch", *Brooking Papers on Economic Activity* 2, pp. 205-248.
- Chan-Lau, Jorge A., and Zhaohui Chen, 1998, "Financial Crisis and Credit Crunch as a Result of Inefficient Financial Intermediation: with Reference to the Asian Financial Crisis," IMF Working Paper WP/98/127 (Washington: International Monetary Fund).
- Commission Bancaire, 2000, "From Expected Loss to Dynamic Provisioning" (Paris: Commission Bancaire).

Dziobek, Claudia, 1996, "Regulatory and Tax Treatment of Loan Loss Provisions," IMF Paper on Policy Analysis and Assessment, 96/6 (Washington: International Monetary Fund).

———, Olivier Frécaut, and María Nieto, "Non-G-10 Countries and the Basle Capital Rules: How Tough a Challenge is it to Join The Basle Club?" IMF Paper on Policy Analysis and Assessment, 95/5 (Washington: International Monetary Fund).

Escolano, Julio, 1997, "Tax Treatment of Loan Losses of Banks," in *Banking Soundness and Monetary Policy: Issues and Experiences in the Global Economy*, ed. by Enoch and Green, pp. 148–182, (Washington: International Monetary Fund).

European Monetary Institute, 1996, Annual Report (Frankfurt).

Federal Deposit Insurance Corporation (FDIC), 1997, *History of the Eighties—Lessons for the Future*, Vol. II (Washington: FDIC).

Frécaut, Olivier, and Eric Sidgwick, 1998, "Systemic Banking Distress: The Need for an Enhanced Monetary Survey," IMF Paper on Policy Analysis and Assessment, 98/9 (Washington: International Monetary Fund).

Folkerts-Landau, David, and Carl-Johan Lindgren, 1998, *Toward a Framework for Financial Stability*, World Economic and Financial Surveys (Washington: International Monetary Fund).

Goldman Sachs, 2000, *Latin American Financial Services Monthly* (May 10) (New York: Goldman Sachs Global Equities Research).

Grossl-Gschwendtner, Ingrid, 1993, "Regulation of the Financial System and the Stability of the Banking Sector: A Comparison between the United States and Germany", *Konjunkturpolitik*, Vol. 39, No. 5, pp. 286–314.

Herring, Richard J., and Susan Wachter, 1999, "Real Estate Booms and Banking Busts: An International Perspective," Working Paper 99–27 (Pennsylvania: University of Pennsylvania: Wharton School Financial Institutions Center).

Institute of International Finance (IIF), 1999, *Report of the Working Group on Loan Quality*, (July) (Washington: Institute of International Finance, Inc.).

International Monetary Fund, 1999, *Financial Sector Crisis and Restructuring—Lessons from Asia*, Occasional Paper 188, by Carl-Johan Lindgren, Tomás J.T. Baliño, Charles Enoch, Anne-Marie Gulde, Marc Quintyn, and Leslie Teo (Washington: International Monetary Fund)

———, 1999a, *IMF-Supported Programs in Indonesia, Korea, and Thailand: A Preliminary Assessment*, Occasional Paper 178, by Timothy Lane, Atish R. Ghosh, Javier

Hamann, Steven Phillips, Marianne Schulze-Ghattas, and Tsidi Tsikata,
(Washington: International Monetary Fund).

Kanaya, Akihiro, and Woo, David, 2000, "The Japanese Banking Crisis of 1990s: Sources and Lessons," IMF Working Paper 00/7 (Washington: International Monetary Fund).

Moody's Banking System Outlook, (New York, various issues).

Peek, Joe, and Eric S. Rosengren, 1992, "The Capital Crunch in New England", *New England Economic Review*, pp. 21-31 (Massachusetts: Federal Reserve Bank of Boston).

Song, Inwon, 1998, "Korean Banks' Responses to the Strengthening of Capital Adequacy Requirements", Pacific Basin Working Paper Series No. PB 98-01 (California: Federal Reserve Bank of San Francisco).

U.S. Federal Reserve System, 2000, *Commercial Bank Examination Manual*, Section 2060.1 (March), www.bog.frb.fed.us/boarddocs/supmanual.

Westpac Bank, 1997, Annual Financial Review (Sydney: Westpac Bank).

White, Lawrence J., 1991, *The S&L Debacle, Policy Lessons for Bank and Thrift Regulation*, (New York: Oxford University Press).