Working Paper

INTERNATIONAL MONETARY FUND

WP/02/122

IMF Working Paper

Collateral in Loan Classification and Provisioning

Inwon Song

INTERNATIONAL MONETARY FUND

 WP/ 02/122

IMF Working Paper

Monetary and Exchange Affairs Department

Collateral in Loan Classification and Provisioning

Prepared by Inwon Song[1]

Authorized for distribution by David Marston

July 2002

Abstract

Adequate loan classification practices are an essential part of a sound and effective credit risk-management process in a bank. Failure to identify deterioration in credit quality in a timely manner can aggravate and prolong the problem. Two key issues arise with regard to the use of collateral in the context of loan classification and provisioning. In particular, the questions arise whether collateral should be taken into account in classifying a collateralized loan, and whether it should be considered in calculating provisions. This paper surveys country practices in the role of collateral in loan classification and provisioning, and suggests good practices on these issues.

JEL Classification Numbers: G2, G18, K2

Keywords: Banking Supervision, Loan Classification, Provisioning, Financial Regulation

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

[1] The author would like to thank Messrs. David Marston, Jan Willem van der Vossen, and Ms. Barbara Baldwin for their detailed comments and suggestions. Comments from staff of the Monetary and Exchange Affairs Department, including Messrs. Michael Andrews, Fernando Delgado, Karl F. Habermeier, Peter Hayward, Matthew Jones, Cem Karacadag, Paul Kupiec, Vassili Prokopenko, and Kenneth Sullivan, and Ms. Claire McGuire are also gratefully acknowledged, as is Ms. Natalie Baumer for her editorial work.

Contents Page

I. Introduction

Adequate loan review and classification policies and practices are an essential part of a sound and effective credit risk management process in a bank.[2] Because loans are not typically traded, the market value of loans is approximated through the process of provisioning. The provisioning is equivalent to reducing a loan's original value to its estimated present value, taking into consideration the level of impairment of the loan. Failure to identify and recognize deterioration in credit quality in a timely manner can aggravate and prolong credit problems and increase the cost of dealing with them. Moreover, inadequate loan-classification schemes undermine the establishment of an appropriate level of provisions for problem loans, distorting banks' balance sheets and overstating their capital and capital adequacy ratios.

There are divergent views on the classification and provisioning of a collateralized loan. In particular, views differ on the extent to which collateral should be taken into account when classifying a loan. Another issue is whether in calculating provisions the collateral should be netted against the exposure amount or not. This paper surveys some country practices regarding the role of collateral in classification and provisioning and attempts to identify elements of good practices on these issues.

Classifying a credit means allocating estimated risks of nonpayment, based on the assessment of a borrower's repayment capacity to meet his total obligations under the loan contract.[3] Loan classification allows risks to be identified on a timely basis and permits appropriate loan-enforcement actions such as collection and/or provisioning to cover potential losses. Collateral plays an important role in lending in many countries. Often, proper risk analysis is not conducted when the bank believes the exposure is well collateralized.

Collateral can be used to solve multiple economic problems, but in the practical world with only little benefit to the banks. For example, in one extreme, collateral is used in place of

---

[2] Although, in a general sense, the terms "loans" and "credits" are sometimes used interchangeably, this paper focuses on loans. In addition, it uses the term "provisioning" to mean "making allowance for loan losses."

[3] There could exist two different types of loan classification. One is the "internal risk management" classification of each bank based on its own probability of default and other considerations. The other is the "regulatory" loan classification, usually established by the supervisory authorities as a set of objective parameters. In sophisticated banks, the internal classification does not necessarily match the regulatory classification because the regulatory criteria usually are somewhat basic for efficient risk management in a diversified bank. In the context of suggesting good practices, this paper tries to concentrate on the regulatory loan classification system.

acquiring knowledge about a counterparty with little monitoring costs other than valuing collateral. In typical government repurchase agreement transactions, the lender acquires the right to liquid assets that often overcollateralize loans because this is an inexpensive way of doing lending business. In another setting, a bank acquires a great deal of information about a borrower and may require a secure interest in collateral, not necessarily because the lender ultimately wants to secure a position in collateral, but because collateral rights increase the borrower's cost of defaulting and thereby reduce his incentive to default. If corporate bankruptcy has little personal cost of default to the corporate owner/manager, then requiring that the owner/manager provide some personal collateral can increase the personal costs of default and significantly improve the alignment of contract incentives. A more detailed discussions on the economics of collateral would be beyond the coverage of this paper.[4]

Excessive reliance on collateral poses risks for a bank. For example, collateral is often illiquid and costly to realize through foreclosure or other legal means.[5] Collateral becomes even more critical when a loan is impaired and other sources of repayment become inadequate. Collateral in residential mortgages is generally considered to be relatively low risk, as is recognized in Basel risk weightings,[6] but even then can nevertheless present considerable hazard to the lender, depending on real estate market developments and the effectiveness of the legal and judicial system.

Therefore, establishing rules for grading loans according to repayment capacity and appropriately valued collateral, as well as determining rules for establishing provisions against possible losses on loans with greater risk represent good banking practice. Moreover, it is broadly acknowledged that rules should be well known by all participants, bankers, and borrowers, and should be consistently applied.

Documentation on the collateral and its valuation should be part of the original loan proposal of the credit officer. Banks should also establish a program to have reliable and independent professionals periodically monitor and analyze the worth of collateral, for instance at the time of a periodic review of the loan portfolio. Supervisors should verify the presence of proper

---

[4] See for example, Bank for International Settlements, 2001, "Collateral in Wholesale Financial Markets: Recent Trends, Risk Management and Market Dynamics."

[5] The independence of collateral and ease of realization is very crucial. Collateral must be properly secured or pledged. Collateral is only liquid if the bank actually has control of it and the collateral cannot be pledged to another lender or used by the borrower himself.

[6] The Basel Capital Accord assigned a 50 percent risk weight to loans fully secured by mortgage on residential property, which is rented or is occupied by the borrower.

documentation during on-site inspections.[7] See Box 1 for an overview of some standard forms of collateral.

This paper discusses the use of collateral in the context of loan classification and provisioning, and provides a range of country examples. It is structured as follows. After the Introduction, Section II addresses good practices for treatment of collateral in loan classification. Section III discusses arguments for and against netting of collateral against the impaired loan in calculating loan-loss provisions. Section IV provides related issues concerning collateral valuation, and Section V presents some country cases on collateral in mortgage lending as a frequently used form of collateral. Finally, Section VI includes some conclusions.

II. Loan Classification and Collateral

In relation to the issue of how to classify a collateralized loan, the predominant view seems to be that loan classification should be based on an assessment of whether the borrower is able to service the debt, rather than on the value of the collateral backing the loan. Some countries take collateral into account in classifying a loan. This practice would appear reasonable for certain types of collateral where valuation is reliable and liquidity is secured as discussed below. Other countries divide the loan into two parts, classifying the part covered by collateral as more dependable than the part that is not. In some banking supervisor's view, classifying the collateralized portion more favorably encourages bankers to rely unreasonably on the existence of collateral in loan decisions and it thus does not reflect good practice to follow.

Some may argue that when classifying a loan, a conservative value of specific types of collateral should also be taken into account. If a loan is secured with liquid collateral such as bank deposits[8] or securities listed in a deep and liquid market, the classification could be relaxed. However, to qualify for such treatment, the lending institution must have sufficient information concerning the collateral's condition, location, liquidity, and marketability. Supervisors should verify this.

[7] In verifying the documentations, the registration of security should be confirmed for the security agreement to be enforceable.

[8] If a deposit has been made in another bank than the creditor bank, it would be subject to the credit risk of the bank holding the deposit.

Box 1. Various Forms of Security Related to Loans[9]

Security related to loans takes several forms:

(a) **Mortgages:** The most common collateral for commercial lending is a mortgage on real estate. A mortgage is the most obvious form of security for a loan to purchase real property or develop real estate. However, the collateralized property may end up being an unmarketable property or sales of real estate may be held up for a certain period of time by legal proceedings.[10] In practice, the collateral is often worth considerably less than its book value, especially in the case of real estate because of costs of collection, price volatility, and cumbersome legal procedures.

(b) **Pledged deposits, interest bearing notes, and securities:** These instruments are also permitted as collateral. In countries where securities are authorized as collateral, more rigorous and specific guidelines (often mark-to-market rules) are generally in place.

(c) **Guarantees:** In some countries, guarantees by the government or banks also play an important role as security. Such guarantees are usually irrevocable, unconditional, and should be signed by the appropriate authorities. In case of stand-by letters of credit or guarantees of a bank, their value is dependent on the terms and conditions of the guarantee and the creditworthiness of the issuing bank. Personal guarantees and pledges are always difficult to assess and often fail to provide effective protection for the lender.

(d) **Lien on machinery and other equipment:** This kind of collateral is not very practical in that it is usually designed for a specific purpose, making it more difficult to sell. The valuation of specialized machinery by the borrower may be substantially different from the lending bank because of limited marketability.

(e) **Pledge or lien on inventory:** A pledge on claims can be necessary when the bank has accepted inventory as security for the finance of the inventory. As the debtor conducts his business, the inventory will gradually be sold, and the goods will be replaced by claims on the purchaser of the inventory. Accounts receivable are self-liquidating securities, but the value of the receivable is also dependent on the creditworthiness of the purchaser of the inventory. The value of inventory may be at risk because the inventory is perishable, obsolete, and difficult to sell quickly and often damaged.[11] The value of receivables taken as collateral should of course be valued conservatively. In the case of project finance, where the revenue of the project financed by the bank is the prime source of repayment funds, the receivables should be pledged to the bank.

(f) **Letter of comfort:** It can be used by parent companies instead of formal guarantees with respect to their subsidiary borrowings. The bank accepting the letter of comfort only has the benefit of the moral and commercial stigma that would be attached to a parent that did not support its subsidiary. In most jurisdictions, comfort letters are not the equivalent of guarantees in terms of enforceability.

---

[9] See Princeton Rose (1996).

[10] When a building project that a bank has lent funds on goes bad often there are costs associated with either completing the project or paying off various liens that may have been filed on the project.

[11] Inventory taken as collateral for a borrower who may be in liquidation is often required to be sold at a heavy discount, as a part of the liquidation process.

A. Good Practices

In principle, collateral cannot be a substitute for a comprehensive assessment of a borrower or counterparty. At best, collateral should be regarded as a secondary source of repayment if the borrower defaults. In addition, banks should recognize that the value of collateral may well be impaired by any credit enforcement actions (e.g., foreclosure proceedings)[12] instituted by other institutions. As much as possible, banks should have the ability to establish clear legal title to collateral on default and the legal arrangements on collateral should limit making the same collateral available to multiple counterparties.

According to the Basel Committee on Banking Supervision, the loan classification system should typically take into account the borrower's current financial condition and paying capacity,[13] the current value and the ability of the collateral to be realized, and other factors that affect the prospects for collection of principal and interest as of the valuation date.[14] Factors relevant to the assessment of the debtor's ability to repay may include the current and future cash flows and value of and ability to realize any underlying collateral.[15] When classifying a troubled loan, and as other sources of repayment become inadequate over time, it is reasonable that a conservative value of the collateral is taken into account.[16] However, consideration of only one factor (e.g., the value of the collateral) is normally not sufficient for the determination of the impairment status of a loan.[17]

---

[12] See Basel Committee on Banking Supervision (2000), p. 10.

[13] In many countries, banks do not have ready access to reliable financial information on a borrower's financial condition. However, this should not be used as reasoning to support undue reliance on collateral, as is often the case.

[14] See Basel Committee on Banking Supervision (1999), pp. 15 and 21.

[15] Collateral valuation may range from a simple estimation of recoverable amount of collateral to other more supplicated econometric models for predicting future prices of underlying collateral.

[16] Even in cases where a conservative value of collateral is taken into account in loan classification, this should not serve as a recourse to accrue interest income on nonperforming loans. Stopping the accruing of interest income, regardless of collateral held on seriously delinquent loan is important.

[17] In the New Basel Capital Accord (Consultative Document) issued in January 2001, the Basel Committee on Banking Supervision introduced credit risk mitigation techniques in the standardized approach. Eligible collateral and minimum conditions of collateral and guarantees were discussed in the paper. The Basel Committee considers that contents of the credit risk mitigation techniques are subject to further discussions prior to finalization.

III. Provisioning and Collateral

Arguments can be raised for and against the netting of collateral value against the impaired loan in calculating the provisions. The extent of the netting of collateral could have a considerable impact on the amount of provisioning, which in turn impacts the net income of banks.[18] Therefore, how to treat collateral in loan classification and provisioning will eventually affect a bank's level of capital.

To fully analyze the potential impact of collateral on provisioning and capital would call for further rigorous theoretical and empirical analyses based on different assumptions about provisioning rules and the probability distribution of the various other exogenous variables. These empirical analyses would require extensive data for such variables as provisioning levels, collateral values, capital ratios, *inter alia*, for a number of countries. Due to lack of data, especially on collateral values and the use of collateral in banks' loan portfolios, the paper will not deal with the empirical analyses based on such data.

A. Arguments Against Netting

It may be argued that collateral value should not be deducted from impaired loan values in calculating provisions, due to difficulties with valuing, limited marketability and legal impediments to liquidating collateral. In many emerging or developing countries, collateral valuation may be unreliable and may be overestimated in a highly illiquid and shallow market and in the absence of reliable and readily available appraisals. Although the collateral may be a good quality asset, one must consider discounting the value to reflect changes in market conditions, the cost of sale, and delay in realizing the proceeds.

Many creditors also encounter legal impediments such as prolonged foreclosure[19] or bankruptcy procedures with regard to liquidating collateral. Furthermore, appraisals do not reflect liquidation costs (which could be significant); nor do these reflect potential impediments to collateral by claims, which are given priority status.[20]

---

[18] In some countries, provisioning affects the value of the loan portfolio in the balance sheets by reducing the loan amount.

[19] The practical ability of foreclosing the collateral should be considered. This presupposes a good set of contract enforcement laws and collateral laws, good property registration systems, capable judges, and the like.

[20] In some countries, significant costs are attached to liquidation or foreclosure of collateral. Such costs include court costs, cost of litigation, sales fees, and other costs to the authorized administrators. Lengthy legal procedures could also result in increased costs.

B. Arguments in Favor of Netting

It also may be argued that in certain circumstances collateral value should be allowed to be deducted from impaired loans in calculating provisions in case where the collateral represents true positive value to the lender. If the collateral is liquid, of high quality—that is, cash or marketable securities issued by government—or even if the collateral is not cash or marketable securities, but if it is still considered liquid, such as short-term time deposits and can be recovered readily and appraised properly, then it would be reasonable to deduct the value of collateral from the loan amount.[21]

C. Good Practices

It is reasonable to take account of collateral in provisioning, but only through a very conservative approach, taking into consideration various constraints in valuing and disposing of collateral. First of all, there should exist a robust legal environment that prevents multiple pledging of assets and provides an efficient process for asset realization and valuation. According to the Basel Committee on Banking Supervision, a bank should measure an impaired loan at its estimated recoverable amount. Credit deterioration in individually identified loans should be recognized on a timely basis through a periodic loan review process, and the establishment of specific allowances or through write-offs. The carrying amount of an individual loan that has been identified as impaired should therefore be reduced to its estimated recoverable amount. The determination of this amount should take into account all relevant information such as primary source of repayment of the borrower, the current value of collateral, and the enforceability of guarantees. If repayment of the loan is expected to be provided solely by the underlying collateral, the fair value of the collateral can serve as the estimated recoverable amount of an impaired loan, taking into account the quality of the collateral as indicated in the previous paragraph.[22] Therefore, fair value of the collateral could be deducted from the total loan before calculating provisions.[23] In this case, conservatively estimated collateral value should be deducted from a loan amount first, then the provisioning percentage should be applied over the remaining amount of the exposure.

---

[21] In the case of securities issued by a government, there are some cases where the government is in default of its debts or has a forced rescheduling. In those cases, it will not reflect the actual value of collateral to take the securities at nominal value.

[22] See Basel Committee on Banking Supervision (1999), pp. 24–25.

[23] The International Accounting Standards (39.113) stipulates that if an impaired financial asset is collaterized and foreclosure is probable, then the holder measures impairment based on the fair value of the collateral. The International Accounting Standards 16 also stipulates that the fair value of land and building is usually its market value. This value is determined by appraisal normally undertaken by professionally qualified valuers.

The key factor to be considered is the value to be attributed to the collateral and therefore the residual amount that needs to be provisioned. The bank should deduct any significant estimated costs to sell the collateral from the estimated fair value of the collateral. However, valuation is not a simple matter. Valuation is relatively straightforward when the collateral is liquid, marketable securities, or cash; but is perhaps more difficult when the collateral is real estate or other illiquid assets. Valuation becomes even more problematic when the ability to realize the value is limited, particularly when such a realization may affect the financial viability of the borrower.[24] Since not all collateral is created equal, only collateral which is reliably valued should be considered in calculating provisioning.

The following simplified examples in Box 2 illustrate how collateral can affect loan classification and provisioning. The amount of provisioning could range from 0 to 50 percent of the loan amount based on the assumptions in Box 2. The results depend on whether collateral is considered for loan classification or for provisioning. The required provisions also depend on what kind of value is applied for collateral: for example, book or market value.[25] In calculating provisioning, whether collateral value is netted from loan amount first or not also affects the amount of provisioning as shown in cases IV and V.

Several country cases with regard to the role of collateral in loan classification and provisioning are illustrated in the Appendix I. Neither G-10 nor non-G-10 countries provide uniform direction with regard to the effect of collateral on loan classification.[26] On the other hand, in the case of effects of collateral on provisioning, most country cases show that collateral value affects provisioning in one way or another except in a few cases such as the Czech Republic.[27] Nevertheless, the extent of the effect of collateral on provisioning could be quite different depending on how collateral is valued and the role of collateral in loan classification or provisioning.

---

[24] For example, when a key piece of machinery is repossessed by the bank that financed it, the borrower is no longer able to utilize the machinery for generating income since the borrower no longer exercises control over the repossessed equipment.

[25] Based on these calculations, it is evident that using market value of collateral is more desirable than book value of collateral for a sound calculation of provisions.

[26] Recently greater attention is being paid to loan classification and measurement for impairment by the Basel Committee for Banking Supervision, especially by the Task Force on Accounting Issues. See Basel Committee for Banking Supervision (June 2001).

[27] Refer to the Appendix for country practices regarding the Czech Republic.

Box 2. Effects of Collateral on Loan Classification and Provisioning

Assumptions: Loan amount 100; Collateral value 60 (book value) or 30 (market value); the required provisioning ratio: standard 0 percent, substandard 20 percent, and doubtful 50 percent.

< Case I >

Collateral is considered in loan classification when a loan is impaired (collateral is classified as **standard** and valued at **book value**).

Loan classification	Provisioning
Collateralized part: standard 60	60x0.0 = 0
Uncollateralized part; doubtful 40	40x0.5=20
Total	20

< Case II >

Collateral is considered in loan classification when a loan is impaired (collateral is classified as **substandard** and valued at **book value**).

Loan classification	Provisioning
Collateralized part: substandard 60	60 x 0.2 = 12
Uncollateralized part; doubtful 40	40 x 0.5 = 20
Total	32

<Case III>

This is the same as case II except that collateral is valued at **market value**.

Loan classification	Provisioning
Collateralized part: substandard 30	30 x 0.2 =6
Uncollateralized part: doubtful 70	70 x 0.5 =35
Total	41

<Case IV>

Collateral is not considered in loan classification when a loan is impaired. But, **book value** of collateral is considered in calculating provisioning.

Loan classification	Provisioning
Doubtful 100	(1) Netting collateral from loan amount first, then applying provisioning percentage: (100-60) x 0.5 = 20
	(2) Applying provisioning percentage to total loan amount first, then deduct collateral value: (100x 0.5) –60 = -10 (No need for provisioning)

< Case V>

Same as Case IV except that collateral is valued at **market value.**

Loan classification	Provisioning
Doubtful 100	(1) Netting collateral from loan amount first, then applying provisioning percentage: (100-30) x 0.5 = 35
	(2) Applying provisioning percentage to total loan amount first, then deduct collateral value; (100 x 0.5) –30 = 20

< Case VI>

Same as case IV except that collateral is not considered in calculating provisions at all.

Loan classification	Provisioning
Doubtful 100	100 x 0.5 = 50

IV. Collateral Valuation

Collateral needs to be appraised periodically, considering legal documentation and various other relevant factors such as feasibility of timely foreclosure. Collateral should be conservatively valued by reliable, independent experts. When collateral is provided, management of a bank should establish a mechanism periodically monitoring and appraising the worth of the collateral.[28] Collateral that cannot be seized, possessed, or foreclosed cannot be considered collateral and little value should be ascribed to items such as plant or machinery. In countries where securities are permitted as collateral, more rigorous and specific guidelines (often mark-to-market rules with accompanying calls for margin payments) should be in place.

In the case of real estate, banks should obtain sound appraisals of the current fair value of the collateral from qualified professionals.[29] [30] Many supervisors often issue guidelines on the ratio of loan value to collateral, because of the price volatility. For example, several supervisory authorities limit mortgage loans to about 70 percent of valuation (Hong Kong, Hungary, and India).[31] Weakness in legal systems and other obstacles in foreclosure on, and disposal of, collateral should also be considered. A common and very important problem among troubled banks in the early 1990s was their failure to monitor collateral values. Many banks neglected to obtain periodic information on real estate values in order to evaluate the adequacy of their collateral.[32]

During banking crises, collateral values often drop sharply. Collateral is often illiquid, difficult to value during periods of financial distress, and costly (in terms of both time and

---

[28] See Basel Committee on Banking Supervision (1997). For the discussions on the valuation of collateral and loan-to-value ratios and implications for procyclicality of banking lending, refer to "Bankers Seek To Minimize Risk Associated With Property Lending" in the International Valuation Standards Committee (IVSC) Newsletter, June 2001.

[29] In case qualified professionals for valuation do not exist, banks themselves should have a mechanism in place for continually assessing and appraising the worth of the collateral.

[30] Over the past years, there have been a number of weaknesses of real estate appraisals, even in the United States. Real estate appraisers were unreliable in the past especially because they basically relied on the last few sales prices. Recently, in order to avoid these problems, they have, to a growing degree, been replaced by repeat sales price index econometric models of housing prices.

[31] See Bank for International Settlements (1999), p. 28.

[32] See Basel Committee on Banking Supervision (2000), p. 24.

expense) to realize through foreclosure or other legal means.[33] Re-sale markets would tend to be very thin. Another concern is that a large number of simultaneous "fire sales" would magnify the fall in asset prices. In addition, the credibility of measures to realize collateral depends on an efficient, rapid, and transparent legal process. Recovering pledged assets through courts has often taken years in Eastern Europe, India, Mexico, Peru, and Thailand, although recent legislation in several countries should reduce these obstacles.[34]

Several important issues have also been raised concerning the valuation of collateral in many countries including: (i) whether the supervisory authorities should issue a regulation on how banks are supposed to value collateral or not; and (ii) how banks use independent appraisers and what sort of methodology they use.[35]

In the United States in the late 1980s, a similar debate took place, resulting in regulations calling for banks to use licensed appraisers for certain transactions and certified appraisers for others. Although the regulation did not get into specific valuation methodologies, examiners are required to make every effort to verify whether the methodologies used and assumptions made are appropriate. Title XI of the U.S. "Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA)," requires supervisory agencies to adopt regulations on the preparation and use of appraisals by federally regulated financial institutions. Such real estate appraisals are to be in writing and performed in accordance with uniform standards by an individual whose competency has been demonstrated and whose professional conduct is subject to effective state supervision.

Subsequently, in the United States, a guideline titled "Interagency Appraisal and Evaluation Guidelines" was issued pursuant to Section 304 of the U.S. "Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA)." These guidelines stated that a real estate lending program should include an appropriate real estate appraisal and evaluation program.

---

[33] In systemic crises, loan valuations based on a borrower's ability to pay also become unreliable as the systemic crisis is often accompanied by a rapid and severe impairment of the borrower's ability to service the debt.

[34] See Bank for International Settlements (1999), pp. 28–29.

[35] The International Valuation Standards Committee (IVSC) has published international valuation standards since 1985 to harmonize valuation concepts and principles, primarily with regard to real estate valuation. The valuation standards provide a common definition of market value and explain the general criteria relating to it. The standards also identify and explain bases of value other than market value and establish standards for their application among other things. Moreover, these standards include valuation applications such as financial reporting for lending purposes. In 2000, the IVSC launched its plan to prepare an upgraded set of comprehensive and robust international valuation standards by 2002. (Tissier, 2000, pp. 17–18).

The regulation further stated that an institution's real estate appraisal and evaluation policies and procedures would be reviewed as part of the examination of the institution's overall real estate-related activities. In addition, it required that an institution's policies and procedures should be incorporated into an effective appraisal and evaluation program. Examiners would consider the institution's size and the nature of its real estate-related activities when assessing the appropriateness of its program. Concerning the same guideline, when analyzing individual transactions, examiners need to review an appraisal or evaluation to determine whether the methods, assumptions, and findings are reasonable and in compliance with the agencies' appraisal regulations, policies, supervisory guidelines, and institutions' policies. Examiners also need to review the steps taken by an institution to ensure that the individuals who performed its appraisals and evaluations were qualified.[36]

In Sweden, during the banking crisis in the early 1990s, a special property valuation board, composed of independent property experts, was established to assist the Bank Support Authority (BSA) so as to formulate valuation standards for the banks to apply. In order to ensure that the banks' valuations conformed to market practices, a large sample of about 25 percent of the assets were valued by independent market experts to get a "second opinion." The valuation board at the BSA then further verified the accuracy of the banks' valuations by duplicating the banks' valuations on a small sample (approximately 5 percent). If the property valuation board found that a bank either overvalued or undervalued its assets, it had the right to inform the BSA, which could then adjust the bank's estimated amount when assessing its financial situation and support needs. The basic principle of the property valuation was to assess the market value—not to reflect a "panic sales value," which is far below a sales value under unforced circumstances.[37]

In Korea, which imposes relatively strict rules on valuations, problems have arisen with the use of industrial real estate (rather than residential real estate) as collateral. Valuing such real estate depends greatly on the viability of the occupier. The Financial Supervisory Service (FSS) requires each regulated bank to establish criteria for calculating the expected recovery amount of collateral, which should be calculated based on the market value of collateral. However, banks should also remember to deduct related fees and other expenses from the estimated market value. In the case of land and commercial and industrial real estate properties, banks should also consider that prices for such properties may decline sharply as markets would perceive that certain sets of borrowers are having difficulties in the repayment of debts. In the case of machinery or factory facilities, banks should take into account the extremely limited marketability of such collateral.

---

[36] For further information, see the FDIC's website www.fdic.gov/regulation/rules/5000-4800.html.

[37] See Ingves and Lind (1997), pp. 429–430.

In Canada, the Canada Deposit Insurance Corporation (CDIC) published a document to assist member institutions in developing real estate appraisal policies, techniques, procedures, and information systems.[38] The document set forth the minimum policies that each member of the CDIC needs to have in place and apply and the minimum criteria the bank should use to ensure that real estate appraisals are prudent and appropriate. Real estate appraisal policies need to contain criteria governing the types of real estate-related financial transactions that require appraisals. Requirements for appraisals also need to contain criteria for conducting reappraisals, when required. The need for reappraisals should receive particular attention where real estate-related credits become nonperforming. Real estate appraisal policies also include the selection and engagement of appraisers, the contents of all appraiser's reports and the valuation methods. Real estate appraisals conducted for CDIC members need to follow appropriate valuation approaches that result in a market value estimate that is both prudent and reasonable in relation to the physical and legal characteristics of the property appraised.

V. Collateral in Mortgage Lending

Although a mortgage is the most obvious form of security for a loan to purchase real property or develop real estate, country practices on foreclosure or liquidation of collateralized real estate may differ. Banks may incur costs both in terms of time and money to foreclose on real estate. Once acquired, real estate also involves carrying costs to maintain the property and market it for sale.

In many countries, realizing pledged assets through the courts is an extremely lengthy process which can take years as a result of deficiencies in legal systems or inefficient bankruptcy procedures, which prevent creditors from taking effective legal actions against delinquent borrowers.[39] In some countries, banks are allowed to sell mortgaged collateral quickly without court intervention. These different practices and legal requirements in foreclosing and selling pledged property make an enormous difference in the practical value of mortgaged collateral.

Borrowers against residential mortgages are more likely to default if the amount owed on the loan is in excess of, or close to, the estimated market value of the property. Experience during the Mexican crisis in 1994 was instructive, as was the real estate situation in Texas

---

[38] The title of the document is "Standards of Sound Business and Financial Practices: Real Estate Appraisals."

[39] In some countries, even where loan contracts grant the lender the authority to directly sell the collaterized real estate in the event of default, in practice lenders have been unable to exercise self-enforcement powers over the objection of the debtor. The alternative of conducting a real estate sale under court supervision requires exact compliance with strict procedural requirement, and is subject to delays for several years.

during the 1980s when homeowners simply walked away from their homes because real estate prices were falling and they owed more than the houses were worth. During the crisis, interest rates soared, real estate prices fell, and many borrowers had to default on their loans. When interest rates reach very high values, real estate prices may decline. This negative correlation may be due to difficulties of borrowers to pay high mortgage rates, lower demand for housing due to economic recession, and an increasing stock of foreclosed properties.[40]

In the early 1990s, many U.K. borrowers of residential mortgages also discovered they had "negative equity." In previous cycles, a decline in real prices had been accompanied by relatively high inflation so that nominal prices did not fall, or did not decline significantly. In the early 1990s, there was a decline in nominal prices, although the fall in real prices was only marginal because inflation in the United Kingdom was low. However, as loans were fixed in nominal terms, bankers were protected, but the borrowers were exposed. Moreover, as loan-to-value ratios had risen because of the acute competition for business, many borrowers—as in the Mexican case—ended up owing more than their property was worth. Lenders also found it very difficult to evict borrowers and even if they succeeded, they were unlikely to recover the full amount of the loan.

During 1990s, a large part of South Africa's bank lending was in residential mortgages. The lending business was also very competitive and loan-to-value ratios had risen. Arrears were also high and rising, while inflation fell. Although there was no price "bubble" in real estate, except perhaps in parts of the Western Cape, nonetheless, there was some downward pressure on prices in some areas. As in most countries, the capital requirement for residential mortgage lending was half that for other lending, since the propensity to default on such lending was considered low.

The South African Reserve Bank (SARB) was concerned with the high proportion of lending currently in default, but which was unprovisioned because it was covered by collateral. The situation was of particular concern because of the macro-prudential nature of the problem and the political backlash that could have occurred if banks had aggressively sought to protect their assets. To correct the problem, supervisors required banks to set up more provisions against lending in residential mortgages. They could also ensure that the banks take greater account of the repayment ability of borrowers and maintain a very conservative view as to the value attributed to their security. Other means to reduce loans in default were limited; only a protracted rise in property values, accompanied by a more restrictive credit assessment procedure, could possibly meet this need. Most mortgage loans in South Africa were made with a loan-to-value ratio almost equal to one. This implied that a small decrease in real estate prices meant that the collateral could not cover the value of the loan. Given the fall in real estate prices, some banks in South Africa decided to put off sales of foreclosed

[40] Barnhill, Papapanagiotou, and Schumacher (2001), p. 13.

properties until the market improved, forcing the banks in the meantime to carry maintenance and portfolio management costs.[41]

The commercial real estate market in the U.S. offers another example of the risks of commercial mortgage lending in an environment moving from higher to lower inflation rates. In the late 1970s and early 1980s, the U.S. Federal Reserve Board moved aggressively to reduce inflation. This resulted in a deep recession, slower inflation rates, and deteriorating credit quality for business loans. Nevertheless, because of the perception that real estate lending was a low-risk lending vehicle and subject to various tax advantages, a high level of commercial real estate developments continued through the mid 1980s. However, by the late 1980s and early 1990s, commercial real estate prices declined sharply owing to lower inflation rates, recession, overbuilding, reduced tax incentives, and a large supply of repossessed properties. The Resolution Trust Corporation was set up to deal with failed saving and loan institutions which frequently sold real estate at less than one-half of the amount of the outstanding first mortgage loans.[42]

VI. Conclusion

Collateral plays an important role in lending in many countries. Collateral can be used to solve multiple economic problems, but in the practical world, especially in emerging markets, it provides only little benefit to banks even in good times, because of the difficulty in valuing and realizing collateral. Even collateral in the form of residential mortgages can also pose considerable risks, depending on real estate market developments and the effectiveness of the legal and judicial system.[43]

There are divergent views on the proper classification and provisioning of a collateralized loan. Classification of collateralized loans and the extent of the netting of collateral could have a considerable impact. Therefore, how to treat collateral in loan classification and provisioning will eventually affect a bank's level of capital.

---

[41] See IMF (2000).

[42] Barnill, (2001), p. 13.

[43] From the viewpoint of some advanced countries such as Germany, collateral is regarded as well-established instrument of lending operations of banks and it is important for smoothing the function of credit market. Especially in Germany residential securities are characterized by a high degree of stability. Furthermore, foreclosure and bankruptcy procedures are well developed and quickly applied.

COUNTRY PRACTICES: THE ROLE OF COLLATERAL IN LOAN CLASSIFICATION AND/OR PROVISIONING

G-10 Countries	Effect of Collateral on Classification	Effect of Collateral on Provisioning
Canada	Collateral is considered in loan classification. For example, if collateral currently affords protection when a loan is characterized by well-defined weakness, which could jeopardize recovery of principal and interest, the loan can be classified as substandard instead of doubtful.	Specific provisions reduce book value to estimated realizable values, which may be measured at the fair value of collateral.
France	Collateral does not affect classification.	Collateral plays a role in actual provisioning which is at the banks' discretion.
Germany	Collateral affects loan classification. In general, loan classification is based on the financial condition of such entities as the borrower, guarantor, and collateral.	Banks take into account the assessment of collateral in actual provisioning.
Italy	Collateral does not affect classification.	No specific requirements are established with regard to collateral and minimum provisioning.
Japan	Collateral affects loan classification. For example, if a loan is secured with superior collateral and estimated disposal value of collateral covers the value of a loan, the loan is non-classified.	The fair value of collateral affects provisioning. For example, if the borrower is in legal or actual bankruptcy, the fair value of collateral underlying the loan will be the carrying amount of the loan.
Spain	Collateral does not affect loan classification except in the following situation. The restructuring of a doubtful loan does not change its classification unless the borrower pays the outstanding interest and arrives with additional acceptable collateral, which in this case would include cash deposits, stock market-quoted shares, fixed income securities, mortgage security over private residence, office buildings, and farmland.	Loans guaranteed by the following could be deducted from exposure in calculating provisioning. Exposures guaranteed by: public administration without country risk; companies belonging to member states of the European Union whose principal business is the insurance of credit risks; unconditional guarantees by credit institutions belonging to the Organization for Economic Cooperation and Development (OECD); cash deposits; and certain fixed-income securities.
United States	Collateral affects loan classification. The extent of shortfall in operating cash flow, the support afforded by assigned collateral, and/or that provided by guarantors should influence the severity of classification.	The provisioning should take into account the fair value of collateral.

Non-G10 Countries	Effect of Collateral on Classification	Effect of Collateral on Provisioning
Armenia	Collateral affects loan classification. For example, loans are classified one grade upward if they are well secured.	Collateral affects provisioning. Because well-secured loans are upgraded in loan classification, collateral eventually affects provisioning.
Australia	Collateral requirement does affect classification. A 90 days past due loan is not classified as an impaired asset if the net current market value of the collateral is sufficient to cover payment of principal and accrued interest.	Current value of collateral is taken into account in determining specific provisions.
Bulgaria	Collateral does not affect classification.	Half the value of the pledged real estate can be deducted from provisioning. Risk-free collateral such as cash, securities, and guarantees can be deducted fully from provisioning.
Czech Republic	Collateral does not affect classification.	Loans, which are overdue for more than a year and collateralized by real estate, shall be covered in full by provisions.[1]
Hong Kong SAR	Collateral affects loan classification. Exposures that are collateralized by cash or government securities do not have to be classified (i.e., as substandard or doubtful) until they are 12 months overdue. The Hong Kong Monetary Authority (HKMA) is currently considering to revise the loan classification system which would require banks to classify their loans based on borrower risk. While the collateral would have no bearing on the classification of the loan, its value will be taken into account in assessing the bank' net loan exposures.	Collateral affects provisioning. Cash, government securities, other marketable securities, and real estate are to be deducted from gross exposure before determining provisioning. Collateral is valued at "net realizable value (rather than pure market value or on the other hand, fire sale value). There is a requirement that the value of collateral be reviewed regularly (see HKMA's Supervisory Policy Manual).
Indonesia	Collateral does not affect classification.	Collateral values are deducted from the loan amount before calculating provisions for nonperforming loans. For example, collateral such as cash or gold are to be deducted. Since November 1998, collateral valuation procedures have been refined to reflect the potential difficulties for the bank to gain possession upon foreclosure. Appraisals are required to establish collateral value.
Latvia	Collateral affects classification. For example, in the case of a collateralized loan, the condition and marketability of collateral affect loan classification.	Collateral affects specific provisions. Where it is highly probable that banks will take over the collateral, specific provisions should be the difference between the carrying amount of loan and the fair value or net realizable value of collateral.

Non-G10 Countries	Effect of Collateral on Classification	Effect of Collateral on Provisioning
Lithuania	Collateral does not affect classification.	Collateral affects provisioning. Security value or part of it can be subtracted from outstanding loan amount in calculating specific provisions.
Macau, SAR	Collateral does not affect classification. The classification is based on an overdue period.	Collateral affects provisioning. Collateral such as cash, deposits, real estates, and other marketable instruments can be deducted from loans in determining provisioning.
Malaysia	If collateral is cash or the cash equivalent, it reduces the severity of the classification.	Collateral affects provisioning. Any shortfall between the loan and collateral value, must be made up by a specific provision. In those instances where a delinquent loan is secured by real estate, the collateral value must be supported by a valuation that is not more than a year old.
Mexico	The collateralized portion of loan will be upgraded one level if the security is real estate; two levels if it is in the form of A-1 securities in the form of government debt.	Collateral affects provisioning. Government bonds are deducted by 100 percent, while stocks are to be deducted depending on liquidity and price volatility. Other collaterals are to be deducted up to 50 percent of collateral value.
Pakistan	Collateral affects classification. Only realizable value of collateral shall be considered in upgrading loan classification. Classification can be upgraded if collateral available with banks are strong and of sufficient value to cover the outstanding loan.	Only the realizable value of assets without recourse to a court of law duly pledged against bank loans shall be considered in provisioning.
Peru	Classification takes collateral under considerations, but only as a subsidiary nature to the borrower's cash flow, income, and debt servicing capacity.	Highly liquid preferred collateral will reduce required provisioning percentages.
Philippines	Collateral affects classification. For example, loans secured by deposits or government securities are to be classified as unclassified loans. Substandard loans are divided into secured and unsecured substandard loans. If the value of collateral declined in value, secured substandard loans are to be classified as doubtful.	Collateral affects provisioning. For example, 6–25 percent provisioning requirement for secured loans classified as substandard and a 25 percent requirement for unsecured substandard loans. Provisions are computed against uncollateralized portion, in the case of doubtful and loss loans.
Russia	Collateral affects classification. If credits are insufficiently secured or unsecured, the classification will be downgraded.	Collateral affects provisioning. Because collateral affects classification, collateral eventually affects provisioning.
Saudi Arabia	Collateral affects classification. Nonperforming loans may be considered low risk if net realizable value of collateral exceeds loan.	Collateral affects provisioning. Because collateral affects classification, collateral eventually affects provisioning.

Non-G10 Countries	Effect of Collateral on Classification	Effect of Collateral on Provisioning
Singapore	The primary consideration in loan classification is the borrower's repayment ability. Collateral is not taken into account.	Only after the loan is graded as under the "classified categories, i.e., either "substandard" "doubtful" or "loss," will the value of collateral be taken into account in determining level of provisioning.
Slovak Republic	Collateral does not affect classification.	Collateral affects provisioning. Provisions can be established for amount exceeding value of collateral. Some criteria are provided with regard to value of collateral.
Slovenia	Collateral affects classification. For example, a claim secured by a pledge of property can be classified one grade higher.	Collateral affects provisioning. Because collateral affects classification, collateral eventually affects provisioning.
South Africa	Collateral affects classification. For example, if a loan is overdue 180 days or longer, the loan is usually classified as doubtful. However, if the loan is well secured, legal action has actually commenced, and timely realization of collateral will result in repayment of principal and interest, the loan can be upgraded.	No single provisioning system suitable for banks is established. Individual banks shall have a system for the establishment of adequate provisions.
Turkey	Collateral affects classification. If the repayment source of the loan is collateral, and if the fair value of collateral becomes less than the book value of the loan, then the loan should be classified as one of the three categories of impaired loans.	Collateral affects provisioning. After valuation of collateral, collateral should be given an acceptance rate respectively (for example, 100 percent, 75 percent, 50 percent, or 25 percent). Those amounts are taken into consideration as a deduction from loan exposures in calculating provisioning.
Vanuatu	Collateral affects classification. Performing loans which are fully collateralized by cash or by deposits with the lending banks or by the government bonds are regarded as "standard" regardless of other adverse credit factors. However, banks should not consider the collateral as being the only means to repay the facility. Collateral is just one of many factors.	Collateral affects specific provisioning. A specific provision should be created for the difference between book value of the loan and the realizable value of the security after deduction of collection and selling expenses.

Sources: IMF (2001): Banking Supervision Regulatory Database, Basel Committee (1998) Task Force on Accounting Issues, World Bank (2001): Loan Classification and Loan Loss Provisioning, and staff of country's supervisory authorities.

[1]Before July 1998, the banks had been allowed to provision for loan losses after netting out the value of the associated collateral from their claims. However, in the Czech Republic it is very difficult to foreclose on a property, and the bankruptcy process is typically very slow. As a result, loss-grade loans remain on the books, for which banks incur carrying costs. Therefore, in July 1998, the Czech National Bank (CNB) decided to disallow the netting out of the value of real estate collateral in calculating the loan loss provisions for those loans that were overdue by more than 360 days.

References

Bank for International Settlements, 1999, "Bank Restructuring in Practice," BIS Policy Papers No. 6 (Basel: Bank for International Settlements).

———, 2001, "Collateral in Wholesale Financial Markets: Recent Trends, Risk Management and Market Dynamics" (Basel).

Barnhill, Theodore M. Jr., Panagiotis Papapanagiotou, and Liliana Schumacher, 2001, "Measuring Integrated Market and Credit Risks in Bank Portfolios: An Application to a Set of Hypothetical Banks Operating in South Africa," IMF Working Paper 01/212 (Washington: International Monetary Fund).

Basel Committee on Banking Supervision, 1997, *Core Principles for Effective Banking Supervision*, Principle 8, p. 26 (Basel).

———, 1999, *Sound Practices for Loan Accounting and Disclosure*, (Basel).

———, 2000, *Principles for Management of Credit Risk*" (Basel).

———, 2001, "Updating and Expanding the Basel Committee's Loan Accounting Guidelines" (Draft).

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,* (New York: John Wiley and Sons).

Cortavarria, Luis, Claudia Dziobek, Akihiro Kanaya, and Inwon Song, 2000, "Loan Review, Provisioning, and Macroeconomic Linkages," IMF Working Paper 00/195 (Washington: International Monetary Fund).

Ingves, Stefan, and Göran Lind, 1997, "Loan Loss Recoveries and Debt Resolution Agencies: the Swedish Experience," in *Banking Soundness and Monetary Policy,* ed. by Charles Enoch and John Green (Washington: International Monetary Fund).

International Monetary Fund, 1998, *Toward a Framework for Financial Stability*, (Washington: International Monetary Fund).

———, 1999, *Financial Sector Crisis and Restructuring Lessons from Asia,* IMF Occasional Paper No. 188 (Washington: International Monetary Fund).

———, 2000, "South Africa-Financial System Stability Assessment" (FO/Dis/00/13: Washington: International Monetary Fund).

Rose, Princeton, 1996, "Credit Support and Collateral," paper presented at the Workshop on Banking Supervision, (Vienna: International Monetary Fund).

Tissier, Marianne, 2000, *International Valuation Standards: A Critical Component of a Global Financial Reporting Language* (International Valuation Standards Committee).

World Bank, 1992, *Bank Supervision Guidelines: Asset Classification, Provisions for Loan Losses* (Washington: World Bank).