Financial Stability Institute

FSI Award
2002 Winning Paper

Framework for the Assessment of Bank Earnings

Rodrigo Luís Rosa Couto,
Banco Central do Brasil

September 2002

BANK FOR INTERNATIONAL SETTLEMENTS

The views expressed in this paper are those of their author and not necessarily the views of the Financial Stability Institute or the Bank for International Settlements.

Copies of publications are available from:

Financial Stability Institute
Bank for International Settlements
CH-4002 Basel, Switzerland

E-mail: fsi@bis.org

Tel: +41 61 280 9989
Fax: +41 61 280 9100 and +41 61 280 8100

This publication is available on the BIS website (www.bis.org).

ISSN 1684-7180

Foreword

The Financial Stability Institute has initiated a biennial award for work on an issue relevant to banking supervisors globally. We believe that it is important to encourage thought and research on supervisory topics and to raise the profile of supervisors around the world.

A jury of highly qualified individuals chose the winning paper. The jury was chaired by Mr Andrew Crockett, General Manager of the Bank for International Settlements and Chairman of the Financial Stability Forum. Other jurists were: Mrs Ruth deKrivoy, former President of the Banco Central de Venezuela; Mr John Heimann, former Chairman of the FSI and former U.S. Comptroller of the Currency; Mme Danièle Nouy, Secretary General of the Basel Committee on Banking Supervision; and Mr Brian Quinn, former Executive Director, Banking Supervision and Banking Operations, Bank of England.

The jury members and the FSI are proud to announce that Mr Rodrigo Luís Rosa Couto of the Banco Central do Brasil has been selected as the winner of the 2002 FSI Award. Mr Couto has done extensive work related to the issue of how best to analyse bank earnings, especially in emerging market economies. The paper presents a framework for the assessment of bank earnings, including their composition and sensitivity to changes in business conditions, as well as the formulation of conclusions based on such assessments.

We want to congratulate Mr Couto and the other supervisors who submitted their work for consideration. Their obvious commitment to an effective supervisory process is beneficial to us all.

Josef Tošovský
Chairman
Financial Stability Institute
September 2002

Table of Contents

Introduction

The framework for analysis of bank earnings presented in this paper was created to aid supervisors in answering three very important questions about a bank: What are its expected results considering the available information and a given set of business conditions? How does it generate its income? What is the sensitivity of its earnings to changes in interest rates, spreads, loan volumes, delinquency and other banking business factors?

Supervisors have repeatedly asked these questions, and efforts have been made to satisfy their need for this kind of information. The framework contained herein evolved through the accumulation of experience and the expansions and adaptations made to meet specific needs and deal with the unique circumstances of each case. It has already been applied, in different stages of development, over the past four years to eight Brazilian banks, including the most important ones. The information obtained in the analyses has served as input for some highly important banking supervision decisions.

The framework is essentially forward looking, using accounting and managerial information on past performance as an indicator of what may be expected in the future. The framework may be implemented to a greater or lesser extent, depending on the availability of data and the time and other resources to be employed. The concepts on which the framework is based and the techniques it employs are well known and established. This paper presents a method for applying these techniques and certain ways of treating the data, which have produced the best results in assessing the earnings position of Brazilian banks. The advantages of this method are in great measure due to the conditions of greater instability faced by banks in Brazil and in other emerging market economies.

Assessing the earnings power of a bank, or of any enterprise, is a notoriously difficult task. The conclusions of such an assessment can easily go astray, due to a lack of accurate information or analytical skill, and may also lose relevance quickly, because of significant changes in business conditions. No analytical framework produces accurate predictions of results for a certain period in the future and it is not the objective of the framework presented here to make such predictions.

The assessment of bank earnings is, nonetheless, an integral part of most models of supervision and supervisory rating systems. Moreover, the questions presented above are too essential to be ignored. Although it is not possible to make accurate predictions of bank results, it is possible, in many relevant situations, to arrive at a well-founded conclusion about the capacity of the bank to generate earnings, and also to produce valuable information for other areas of examination.

Part 1: Objectives

1.1 Questions to be answered through analysis

a) What are the bank's expected results considering the available information and a given set of business conditions?

The long-term viability of a bank depends greatly on its ability to generate sufficient earnings to protect and enhance its capital and reward its shareholders. Losses deplete capital and liquidity, and may erode public confidence. Their accumulation may threaten the ability of a bank to continue operating, raising all the potentially disastrous consequences of bank failure.

Earnings are an important indicator of financial health and, in many cases, an early indicator of weakness. Since the merchandise of banks is money itself, they may sustain losses for a long time before running out of cash. Also, banks with negative or declining results may assume imprudent risks in attempting to turn around their earnings, and end up further accelerating the deterioration of their financial position. Therefore, detection of earnings weakness may enable the supervisor to take action before the solvency of the bank is seriously threatened and before it begins to assume increased risks in attempting to achieve profitability.

Simply looking at the earnings record of a bank is not nearly enough to enable the supervisor to form a sound opinion about its earnings position. The earnings record is an exhibit of past results whose effects are already consummated on the balance-sheet, whereas, if his/her conclusions on earnings are to serve as a basis for timely action, the supervisor must be concerned with the expected or indicated future results and their effect on the financial position of the bank.

Of course, past performance is an important indicator of what is likely to happen in the future. The study of past events affecting the earnings may afford the analyst valuable insights that will help him/her understand the current situation and anticipate the future. Experience has shown, however, that earnings are influenced by extraordinary events and conditions, which distort results. It has also shown that reported results may deviate significantly from reality due to misrepresentation. Therefore, the earnings record cannot be used as an indication of future results without adjustment and critical interpretation.

Consider the situation of a bank in which an examination uncovers significant asset quality problems and/or unrecognised liabilities. Past earnings will necessarily have been overstated because losses that happened over time were not properly recognized, income included interest accrued on unrealisable assets and expenses did not include interest charges on unrecognised liabilities.

In these cases, when results are not properly represented in the financial statements, it is important for supervisors to know what the actual results are, or should be, considering the true asset/liability position of the bank. These results will determine whether, and at what rate, the financial position of the bank will improve or deteriorate further. When an injection of new capital is being considered, it is important to estimate the amount of money that will be necessary to restore not only capital adequacy but also profitability. Situations like these motivated the development and provided the initial opportunities of application of the analytical framework. The conclusions of analysis complement balance sheet auditing by providing information on the trend of evolution of the adjusted asset/liability position, and the estimated effect of proposed changes on that position.

Banks frequently conceal their losses for various reasons, such as to attempt to maintain depositor confidence, to avoid devaluation of their stock in the market or to avoid supervisory action, which may lead to liquidation and legal prosecution of managers for acts of improper management. Some banks conceal their losses for quite some time, and end up being liquidated because of financial weakness without ever reporting a net loss.

However, misrepresentation of results is not only found in the extreme cases of weak banks concealing life-threatening losses but also in more subtle cases. Accounting manoeuvres commonly involving provisions, intangible and contingent assets, earnings coming from subsidiaries and securities transactions are frequently found in banks, regardless of their financial position. There are several ways, short of fraud, of manipulating earnings, and experience has shown that banks do so for a variety of reasons. Misrepresentation of earnings, the frequent occurrence of extraordinary profits and losses, and the rapidly changing business conditions commonly faced by banks make it very hard for supervisors to assess bank earnings without an analytical framework that will help them deal with these intricacies in a systematic way.

The objective of this analytical framework is to aid supervisors in treating and interpreting information in order to make an assessment of bank earnings that will yield well-founded, useful and timely conclusions. Even when the analysis is restricted to the data on the financial statements, the framework produces sufficient information to give the analyst an idea of what future results should be. When fully implemented, the framework provides an estimate of earnings considering current or likely business conditions and the absence of extraordinary events that could affect results. These are the indicated future results that will determine the viability of the bank, and therefore those with which the supervisor is concerned.

b) How does the bank generate its income?

To understand the operations of a bank, it is essential to know how it generates its income. The assessment of a bank can hardly be considered comprehensive if it does not contain extensive information on how the bank earns money. This information should cover two aspects: the contribution of each of the bank's activities and that of sustainable and non-recurring sources of income to its earnings.

The more the income of a bank comes from sustainable core-business sources, the more reliable and stable are its earnings. Income arising from these sources should be sufficient to cover operating expenses, provisions and taxes, and to provide an adequate return on capital. Reliance on non-recurring income is a sign of earnings weakness and may mean that the bank is engaging in risky practices in an attempt to boost earnings.

The relative contribution to the earnings of the various activities of the bank is a good indicator of how risk is distributed among these activities. Such an assessment may lead to conclusions very different from those of the typical assessment based on volumes alone. Supervisors may want to take the contribution to earnings into consideration when deciding on the allocation of supervisory resources for an examination.

The analytical framework supplies guidelines for the interpretation and classification of the items of income and expenses as either sustainable or non-recurring. A main concern of the framework is enabling the analyst to assess the effect of non-recurring items on the results and to measure the dependence of the earnings on unreliable sources of income. Although information on the contribution of each of the bank's activities to earnings is normally easily obtainable, that is not always the case. The framework enables the analyst to quantify this contribution and thus to assess the relative importance of each activity to the bank's profitability.

c) What is the sensitivity of the bank's earnings to changes in interest rates, spreads, loan volumes, credit delinquency and other banking business factors?

The evaluation of the sensitivity of bank earnings to changes in relevant business conditions is an important part of risk-assessment. It enables supervisors to identify the variables that are most important to profitability and to anticipate the impact on the bank of expected or possible changes in business conditions.

With the framework fully implemented, it is possible to test hypotheses concerning the relevant business variables and to measure their impact on results. The impact of changes in resources and strategy can be measured as well. Stress-testing is also made possible, enabling supervisors to estimate, for example, how much interest rates can fall without reducing earnings to zero, or how much would the bank need to expand its loan portfolio to break even. This sort of information helps to put the numerical estimates in perspective and enhances the supervisor's overall understanding of the earnings situation.

1.2 The increased importance of these issues for banks in emerging market economies

The importance of the three questions presented above is greater in the case of banks in emerging market countries, as is the difficulty of answering them. Bank results are subject to wider fluctuations, because of the greater instability characteristic of emerging market economies. Extraordinary results are large and frequent, and make it difficult for supervisors to have a clear idea what the "normal earnings" should be.

The high credit delinquency and high legal risk characteristic of emerging market economies, which result in substantial provisions for loan losses and contingent liabilities, provide ample opportunity for misrepresentation of results, because small arbitrary increases or reductions in provisions have significant impact on the earnings. Provisions for credit and legal risk are two items that are frequently used to manipulate reported earnings, with particularly misleading results.

Assessing the long-term viability of banks becomes more important in emerging market countries. Financial instability frequently causes the appearance of anomalous business conditions, such as the period of high inflation in Brazil, that affect the profitability of banks. Such conditions may cause abnormal growth in the financial sector, with subsequent contractions forcing some banks out of business.

When the financial sector undergoes changes with respect to its size and number of participants, profit margins are squeezed as the struggle for market share intensifies. During such a process, it becomes more important to assess the viability of banks, in order to identify and monitor those in vulnerable positions.

In emerging market economies, information on the origin of bank earnings also becomes more relevant for the assessment of their long-term viability because it enables supervisors to identify unsustainable income that relates to anomalous market conditions and to evaluate the dependence of the earnings on this sort of income. The ability to measure the effect of changes in business conditions is also of greater value to supervisors in emerging market countries, because the conditions are subject to more radical and sudden change.

Part 2: Concepts

2.1 Classification of income statement items

In the analytical framework, the income and expense items are classified into two basic categories: structural determinants of profitability and secondary determinants of profitability.

a) Structural determinants of profitability

The structural determinants of profitability are those items of income and expense that satisfy three conditions: they arise from the operational activities of a bank, can properly be considered sustainable, in the case of income, or recurring, in the case of expenses, and are not particularly subject to misrepresentation.

Net interest income, fee income and operating expenses, as defined in item 2.2, are the structural determinants of profitability. They are the core income and expense items of a bank, and are determined by essential banking factors such as asset/client base size, profit margins, capitalization and cost-efficiency. It is the basic underlying hypothesis of the framework that, in a large bank operating in a competitive market, these factors are relatively stable and the past behaviour of the structural determinants may therefore be considered a fair indication of the future.

If there is not such a set of sustainable income and recurring expense items, or if non-recurring income or expenses are too large a part of the total, it is impossible to have any clear idea of what future earnings should be using this analytical framework. Therefore, the framework is more suitable for application to large and relatively mature banks that derive their income mostly from traditional forms of financial intermediation and services, have a well-diversified client pool and are relatively conservative in their market risk exposures.

Gross operating income, defined here as the difference between structural income and expenses, should be sufficient to cover provision charges that would adequately fund the reserves for loan losses and contingent liabilities and to provide an attractive return on capital, after income taxes. The relationship between structural expenses and income may be expressed by something along the lines of the widely known cost/income ratio.

The evolution of gross operating income tells a great deal about the progress of the business of the bank. In the analytical framework, it is the best indicator of the earnings trend, because it reflects the evolution of the main underlying factors of the banking business. The relative evolution of the structural income and expense items is the starting point for the analyst seeking to understand the causes of changes in the indicated results.

When judging whether or not an item should be included in the structural determinants of profitability, satisfaction of the aforementioned conditions is necessary regardless of the title of the item on the income statement. Just because an item is part of the net interest income, fee income or operating expenses, it does not necessarily follow that the item should be included in the structural determinants of profitability.

b) Secondary determinants of profitability

Income and expense items that do not satisfy the three conditions stated above are the secondary determinants of profitability. Some very relevant items of operational income and expense, such as provision charges and effects of exposures to interest rate and foreign exchange risk will be included in the secondary determinants, either because they are non-recurring or subject to misrepresentation.

Secondary items usually have a somewhat unstable behaviour and may have a high impact on the profits of a single period. Nevertheless, if the hypothesis underlying the analytical framework is valid, the non-recurring income and expenses will not have a significant impact on long-term profitability, and misrepresentation will not distort the actual results indefinitely without correction.

Non-operating income mainly arises from investments in subsidiaries and property that are unrelated to the banking business. Most countries either prohibit or set very stringent limits for these investments. They constitute an entirely different enterprise sharing the same capital base of a bank and therefore their earnings and capital should be detached and analysed independently. Earnings from banking activities should be sufficient to remunerate the capital allocated to those activities. The assessment of results of non-banking activities is outside the scope of this work.

Subsidiaries that share facilities, personnel, clients and/or channels of distribution with banks, however, present serious difficulties for the analyst, because their results, and the bank's, are frequently distorted by inadequate intercompany compensation for services, client solicitation and use of property and delivery channels.

Unsustainable income - such as that arising from market-risk exposure and from expectedly short-lived opportunities for gain - cannot be relied upon to provide for the long-term viability of banks, and therefore cannot be included in the structural determinants of profitability. It is often difficult to evaluate the sustainability of income sources, and the analyst must keep in mind the length of the period for which he or she is assessing the viability of the bank when judging whether or not an income stream is sustainable. Stability is the main quantitative criterion for this judgment, but the nature of the income must be considered as well because some portion of a volatile stream may arise from sustainable operations, while an apparently stable income stream arising from a short-lived business opportunity may not be expected to continue in the future.

Non-recurring expenses and negative one-time effects should also be excluded from the structural determinants of profitability because they are not likely to affect future results, except insofar as they have a negative impact on capital and liquidity. The criteria for classifying expenses as structural or secondary are the same as those for classifying income. That is, they are based on quantitative stability and recurring nature. It is important to keep in mind, however, that they may seem to be non-recurring due to misrepresentation. Expenses incurred in several periods may be recognized in a single later period, causing the time series to display high variability that does not imply that the expense is non-recurring, but rather that it has not been properly recognized over time.

Provisions for loan losses and contingent liabilities, deferred expenses, goodwill amortization, contingent assets and results from trading and market price fluctuation of securities are the main income and expense items that have been found to be particularly subject to misrepresentation. This list is by no means exhaustive and all items must be carefully examined. Misrepresentation mostly occurs when there is a gap in time between the recognition of income or expenses in the books and their realization in cash, and items that have this attribute in greater degree are more susceptible to misrepresentation.

There is an interesting parallel between the criteria, timing and process of accounting of income and expense items and their vulnerability to misrepresentation, which is a criterion for their classification as structural or secondary determinants of profitability:

Items registered based on objective factors, such as the accrual of interest on a loan or the payment of an expense, usually follow clear accounting criteria. Their registration follows, in most cases, a pre-determined accounting scheme that is automatically triggered by the input of the transaction in the operational information systems, which is generally made by the reporting unit (branch/department) responsible for the operation. The accounting systems execute the schemes and automatically make the pertinent accounting entries, frequently on a daily basis, throughout the life of the transactions. The accounting of these items is straightforward and management has only indirect influence over the operations and their accounting. Their vulnerability to misrepresentation is, therefore, small.

On the other hand, the accounting of some items, such as provisions and expenses that affect more than one period, depends on expectation or estimation. Management usually has considerable discretion in defining the accounting criteria for these items. The central accounting unit is customarily responsible for making debits and credits to these accounts, which mainly happen by the end of the month, when preliminary business results are already known. Since the accounting of these items is based on expectation or estimation, they have an inherent element of uncertainty that makes them vulnerable to misrepresentation. However, the fact that their bookkeeping is centralized and done at the closing of the period, when preliminary incomes are known, makes them especially suitable for the purposes of manipulation of reported earnings.

Also, the valuation criteria of some assets and liabilities, such as securities, may give rise to unrealised gains or losses. These results are recognized when the asset or liability is traded away or moved from one account to another, which management may or may not do at its discretion, in order to shift income from one period to another or to delay recognition of results. These actions may easily be taken at the end of the accounting period, when results are known, which makes them a convenient means for the manipulation of earnings.

Depending on the preliminary results, management may decide, for example, to make a bigger provision for loan losses, or to charge-off at once expenses that could be deferred, thereby reducing reported earnings. If the period's results are weaker than desired, management may decide to recognize hidden profits in the securities portfolio through an intercompany day-trade, or to make a smaller provision for contingent legal claims, for example. It is common to see positive effects on the earnings arising from secondary items just at the same time that the bank has suffered losses of some kind. Conversely, it is common to see increased conservatism regarding these items when business results are strong. Conservatism often fluctuates along with results, as management strives to smooth earnings fluctuations or to hide profits or losses altogether, for the reasons presented in item 1.1.

Analysing separately these items particularly subject to misrepresentation gives the analyst some insight into these manipulative manoeuvres. They may be indications of a weakening or strengthening of the structural earnings position and represent signs of questionable accounting policies and, consequently, of inconsistencies in the financial statements.

2.2 Proposed structure of the income statement for analysis

According to the concepts of structural and secondary determinants of profitability, the following structure for the income statement is proposed:

Table 1

Proposed structure for the income statement

Structural	Net interest income
	Fee income
	Operating expenses
	Gross operating income
Secondary	Provision for loan losses
	Other secondary expenses
	Income after secondary charges
	Treasury results
	Other secondary income
	Profit/(loss) from banking activities
	Results of non-banking subsidiaries
	Profit/(loss) before taxes
	Income taxes
	Net profit/(loss)

This structure could be used either for the restatement of past financial statement data or for the presentation of projected earnings. Income and expense items are grouped by nature, as usual, and also according to their structural or secondary character. Thus, the evolution of the structural items, which may be used as indications of future profitability, can be seen separately from the influences of the secondary determinants, which have a more volatile nature and may also have a weaker factual foundation for their accounting.

Comments on some of the income and expense groups follow:

Net Interest Income is, broadly speaking, the difference between interest income on assets and interest expenses on liabilities. It is the gross result of financial intermediation. For the purposes of the analysis, however, an opportunity cost of funds must be considered in order to determine the contribution of assets and liabilities to net interest income. This contribution arises from the spreads obtained on the asset and liability products, and the opportunity cost is used as a benchmark to measure these spreads.

The managerial accounting systems of banks usually contemplate this concept of opportunity cost of funds, which is implemented through the use of a funding centre that borrows and lends funds to the other business areas at the opportunity interest rate. Thus, the contribution of an asset to net interest income in a given period is the interest accrued on the asset in that period minus the theoretical interest expense charged on the average volume of the asset at the opportunity interest rate. In the case of a liability, it is the theoretical interest income calculated by applying the opportunity rate to the average volume of the liability in the period minus the actual interest expense incurred.

For the purposes of analysis, it is also desirable that the effects of movements in interest and foreign exchange rates be eliminated from the net interest income. Banks achieve this by using systems of transfer pricing of funds, in which the treasury assumes all interest and foreign exchange risk. When purified from the effects of interest and foreign exchange rate movements, the net interest income reflects more accurately the gains arising from raising and investing funds at a positive interest rate spread, which is, of course, the main activity of most banks. Net interest income becomes strictly a function of the volume of funds, the spreads, and the net working capital, which are some of the essential banking variables that should be reflected in the structural determinants.

Treasury Results are defined here as those arising from exposures to interest rate, foreign exchange and market risk in general. This definition depends on the assumption that the interest rate and foreign exchange risk arising from the operations of all other business areas of the bank is actually transferred to the treasury through a system of transfer pricing. The results arising from these exposures and from the trading activities of the treasury are highly uncertain by nature and therefore should be included in the secondary determinants of profitability.

All income that does not satisfy the conditions for inclusion in the structural items stated above should be included in Other Secondary Income. Unsustainable or extraordinary income should therefore be included here, and it may be adequate to split some income items into a stable and a variable portion, with the stable portion included in the structural determinants and the variable portion included in other secondary income. Positive one-time effects identified in past accounting periods should obviously be included in Other Secondary Income.

Other Secondary Expenses are those that do not qualify as structural expense items. Provisions for contingent liabilities and other expense items whose accounting relies on expectations or estimations are likely to be included here, as all extraordinary losses and negative one-time effects.

Income taxes are a consequence, and not a determinant, of earning power and are therefore not considered in the analysis. This treatment of income taxes has important consequences for the analysis of Brazilian banks, because the writing-up and writing-off of tax credits, with consequent effects on profits, can be one of the most commonly used means of manipulation of reported earnings by banks in Brazil. It may be an important means of manipulation wherever tax credits are large and the accounting rules allow their writing-up in the balance sheet.

Part 3: Financial statement analysis

3.1 Information requirements

The application of the analytical framework requires that financial data be presented in a significant degree of detail and that the titles of the income statement and balance sheet items give the analyst an adequate idea of their composition. Monthly, or at the very least quarterly, data is necessary, and it should preferably cover a period of three to five years. A one-year quarterly series may be considered the minimum acceptable, but it must be stated that such a short series presents serious inconveniences for the analyst.

In the discussion below, it will be assumed that the composition of the main account groupings - such as fee income and operating expenses - is disclosed and that the account titles give a reasonably specific idea of their compositions. When such detailed information is not available, little can be done in the way of performing the sort of in-depth analysis of financial data for which this analytical framework is a tool.

When dealing with banking conglomerates, it is desirable that the consolidated accounting statements of the financial companies of the conglomerate be used for analysis, for two main reasons: first, because they are usually managed as an integrated whole, sharing clients, personnel and facilities and must therefore be analysed as such; second, because management has the ability to shift income from one company to another, thereby distorting the results of the individual companies. In the case of banking conglomerates comprising multiple integrated units of this kind, each should be analysed independently, unless the degree of integration between them dictates that they should all be analysed together.

3.2 Analysis of the income statement

The general strategy of analysis may be outlined as follows:

a) Classify the income and expense items according to the structure proposed in Part 2.

b) Analyse the record of the main groups of structural determinants (net interest income, fee income and operating expenses) and project their future evolution considering their past averages and trends.

c) Analyse the record of the secondary determinants and estimate the secondary recurring income and expenses. In making this estimation, the analyst will concentrate efforts on identifying extraordinary items that should be deleted and will rely heavily on the technique of averaging out abnormal fluctuations.

d) Compare estimated gross operating income (structural income less structural expenses) with estimated secondary recurring income and expenses to determine the estimated future results.

Estimated future results may be understood as those indicated by the projected evolution of the structural determinants, with due allowance for the secondary recurring charges. They represent what the bank may be expected to earn in a typical year given its current earnings position. They serve as a measure of the strength of the earnings position, which is the subject of the assessment. The current earnings position has a bearing on future results, and therefore on long-term viability, because it is largely determined by the essential profitability factors of banks, such as size, profit margins, capitalization and cost efficiency, which are not likely to change radically or suddenly.

The basic principle governing the process of estimation is that the estimates should reflect what could conservatively be expected to happen in the future based on the past record of the items. The overall opinion about the earnings position is not likely to be affected significantly by a reasonable degree of conservatism in the estimation of results, and bank supervisors have incentives to err on the side of caution. Since the estimations are made with the objective of measuring the strength of the current earnings position, the period of the estimation should not be too long. One year, for example, is a convenient period.

The analyst should consider the trend in estimating structural items, but he or she should be careful in doing so, because, although those items are not likely to suffer radical or sudden changes, it cannot be taken for granted that their trends are going to continue in the future. The analyst should estimate structural items based on an average of representative periods, considering the trend only accessorily in forming his/her opinion about the future evolution of the items.

The past record of secondary items does not give the analyst a very sound basis for estimation, and therefore the estimates of these items will be somewhat less reliable than those of the structural items. The impact of the use of alternative estimates for these items should be considered and, when it is significant, the analyst may be forced to express his conclusions in the form of multiple scenarios reflecting the alternative estimated results. Conclusions stated in this manner are of course not entirely satisfactory, but at least the analyst will have been able to narrow the questions about profitability to one or a few income statement items that cannot be estimated with a minimum acceptable degree of confidence.

Even assuming that the income statement and accompanying notes are reasonably detailed and comprehensive, the analyst is not likely to be able to progress much in the way of determining structural and secondary net interest income. The reason is that it is difficult to separate the income arising from the activity of raising and investing funds at a positive interest rate spread, which is a structural determinant of profitability, from that arising from the assumption of foreign exchange or interest rate risk, which is non-recurring and therefore secondary. Even when banks disclose separately these two types of income, the analyst must be convinced that the criteria for separation are satisfactory for the purposes of analysis before he or she can accept them as a basis for his or her own classification. Experience has shown that it is worse to have an improper separation of structural and secondary income than to have none at all.

Examination of the time series of the items of fee income and operating expenses usually allows the analyst to identify income or expenses that should be classified as secondary, either because they seem to be non-recurring or because they might have been subject to misrepresentation. It may be appropriate to split some items into a structural and a secondary portion, each corresponding respectively to the portion of income or expenses that is stable over time and to that that is not. The analyst may use statistical methods to identify highly variable items and to determine the stable and variable portions of an income or expense stream.

Accounts that have a mixed or uncertain composition, such as most with titles containing the word “other”, should be classified as secondary. All provisions should also be classified as secondary and treated later, unless they are not material or the analyst is confident that they properly represent certain or likely future disbursements. The analyst must consider whether or not depreciation and amortization charges should be classified as structural or secondary, because they may be subject to some degree of discretion by management regarding the length of the depreciation/amortization period and the decision to constitute, maintain or write-off the assets from the balance sheet. Unless legislation or accounting rules set strict guidelines for the accounting of these items, they should be classified as secondary.

The secondary items should now be considered. Significant items will probably have been classified as secondary, either because they are clearly non-recurring or their time series presents substantial and abrupt fluctuations, or they were considered particularly subject to misrepresentation.

Usually the most relevant of these items is the provision for loan losses, which is, in the vast majority of cases, an important factor of profitability, but is nonetheless classified as secondary because it is particularly subject to misrepresentation. It is a recurring expense that must necessarily be considered in the analysis. The analyst must therefore attempt to make a conservative estimation of the adequate provision charges.

An effective method for that estimation is to use the ratio of provision charges to interest income from loans, which gives a reasonable indication of the bank's degree of conservatism in its loan-loss provisioning. This ratio takes into account not only the volume but also the interest rates of the loans, which are usually positively correlated with their credit risk. Although this positive correlation is neither constant nor perfectly proportional to risk, experience has shown that, where spreads are extremely high and vary enormously among loan products, as in Brazil and other emerging market economies, the ratio of provision expenses to interest income produces more meaningful results than the ratio of expenses to volume, because the former ratio is, however roughly, risk-adjusted.

Analysing the evolution of the ratio of provision charges to interest income from loans and comparing it to that of similar banks, the analyst will probably be able to form a rough idea of what the adequate ratio for the examined bank should be. Multiplying this ratio by the projected interest income from credit will give an estimate of the provision for loan losses to be charged against gross operating income. This estimate is probably the best the analyst will be able to make, based on the data on the financial statements alone, and it may be desirable to consider alternative likely scenarios, in order to evaluate the sensitivity of the earnings to the loan-loss provision charges.

Provisions for contingent liabilities, mostly legal claims and contingencies related to labour rights and tax rule infractions, are also relevant secondary expenses. It is very difficult to estimate these provisions, even for the banks themselves, because legal risk is usually hard to measure. The analyst may seek some information about the contingencies in the notes on the financial statements, and may be able to identify the causes of significant variations in the provision charges. But he or she will have to rely mostly on the past average, properly adjusted through the elimination of one-time effects, for estimation. The analyst may be forced to consider the effect on results of various levels of provisioning in formulating his or her conclusions.

Banks sometimes disclose the results of the exposure to market risk, under a title such as “dealing profits”. The criteria for computing these results vary significantly, but the analyst may generally consider that they are non-recurring and classify them as treasury results. The “dealing profits” may include all or part of the effects of interest rate or foreign exchange fluctuations that should be eliminated from net interest income for the purposes of analysis. The analyst must not assume, however, that the reported net interest income is free from the effects of those fluctuations unless he or she is convinced that the criteria of computation ensure that all those effects are reflected in the “dealing profits”.

Highly variable income items, the variable part of those items and income items subject to misrepresentation may be estimated by averaging, if they are likely to be recurring. They will continue to be classified as secondary and will be deemed unreliable for the purposes of the assessment of the earnings position. The other secondary expenses may also be estimated by averaging.

As a principle, the results of non-banking subsidiaries should not be considered in the assessment of bank earnings. Nonetheless, in the case of non-banking subsidiaries that have a high degree of integration with the bank, the analyst must be aware of the ability of management to shift income between companies and of the issue of intercompany compensation for services or benefits from integrated operations. The analyst should consider overall profitability and the contribution of the banking activities and of the non-bank subsidiaries to it. If overall profitability is strong but the results of banking activities are poor, for example, it does not necessarily follow that the banking activities are unprofitable and the subsidiaries are highly profitable, because there is the possibility that income is being shifted from the bank to the subsidiaries, deliberately or not. The analyst may have to make allowance for that possibility in his or her conclusions about the earnings position of the bank.

To the extent that the separation of income and expense items is effected, the evolution of the main underlying factors of banking will be reflected on the structural determinants, while the non-recurring effects will be reflected in the secondary determinants. Analysing the items on each category, it will be possible to have an idea of the evolution of structural profitability and of the influence of the secondary determinants on results. It will also be possible to identify events that had a significant impact on earnings and perhaps reveal accounting manoeuvres used by management to conceal or compensate for those events.

Turning to the estimated figures, the estimated gross operating income should at first be compared with the estimated secondary recurring charges. The margin of gross operating income over the secondary recurring charges is a conservative indication of future results. A healthy margin of gross operating income over recurring charges is a sign of sustainable profitability, while a small or negative margin is a sign of earnings weakness.

The information on the financial statements usually enables the analyst to make only a rough estimation of results. Significant doubts about material items will probably remain, and the analyst may only be able to define a range where future earnings should fall. But even such a loosely defined range will probably be a reasonable indication of the strength of the earnings position of the bank. The analyst may refer to the levels of earnings strength described in Part 5 as a rough guide for the formulation of conclusions about the earnings position based on estimated results and other attributes of that position.

Only very general information on the composition of bank earnings may be obtained in the financial statements. The proportion between net interest income and fee income may be calculated, but the analyst must bear in mind that the net interest income will probably be contaminated by the effects of fluctuations in interest rates and foreign exchange. A rough estimate of the distribution of income between sustainable and unsustainable sources may be obtained by comparing structural with non-recurring income. To assess the contribution of the various bank's activities to its earnings the analyst will have to rely on the information the bank chooses to disclose. On the sensitivity of earnings to changes in business conditions the analyst should only have the indication given by the reaction of income and expense items to past changes in conditions.

Part 4: Analysis of managerial information

4.1 Introduction

Access to comprehensive, detailed and accurate managerial information on profitability enables the analyst to implement the framework to the fullest extent. The managerial information systems used by the bank to measure business unit, product and client profitability usually contain a wealth of relevant information that can be used for the purposes of analysis. When these systems are well developed, they are the main source of data upon which the analyst will rely, although other sources, including the information systems that process transactions, may have to be consulted.

The analyst must assess the quality of the information provided by the profitability measurement systems to determine to what extent he or she may rely on that information for his or her purposes[1]. Adequacy of concepts, consistency in implementation and accuracy of inputs are requirements for reliance on the information provided by these systems. When inputs are accurate but the system has internal flaws that distort its measurements, the analyst may still rely on the raw data used by the system, although not on the measurements themselves.

In the discussion below, it will be assumed that the profitability measurement system of the bank under analysis adopts the concept of opportunity cost of funds for the determination of the contribution of assets and liabilities to net interest income, as discussed in item 2.2. It will also be assumed that the effects of interest rate and foreign exchange shifts is captured in a central funding unit, referred to here as the treasury,

---

[1] In order to avoid double-counting and other inconsistencies, the analyst must be sure that management profitability information is duly reconciled with accounting data and that all differences are understood and dealt with when using management information in the analysis.

which is solely responsible for interest rate and foreign exchange risk management.

The reports of internal profitability measurement systems are usually much more detailed and utilize more precise definitions of income and expense items than do the financial statements. This enables the analyst to achieve better separation between structural and secondary items, improving the accuracy of the estimations and the overall reliability of the conclusions of analysis.

Managerial profitability reports demonstrate the net interest income arising from each asset and liability as the product of its volume and spread, with the effects of interest rate and foreign exchange shifts removed. This enables the analyst to see the composition of net interest income and allows him or her to measure the effects of hypothetical changes in volumes and spreads.

The internal profitability reporting views will probably indicate the most adequate treatment of the results of non-banking subsidiaries on the analysis. The subsidiaries whose operations have a high degree of integration with those of the financial companies of the conglomerate will usually appear consolidated in the organizational profitability reports, while those unrelated to the banking business will not.

4.2 Procedures for the classification of items and estimation of indicated results

The strategy is the same as that used for the analysis of the income statement. For the items not discussed below, the process of classification and estimation is the same as that described in Part 3. However, the analyst will have better conditions of classifying and estimating income and expense items because of the greater comprehensiveness and depth of the information found on the managerial profitability measurement systems.

The analyst will be able to progress significantly in the determination of structural and secondary net interest income, because the internal profitability reports display in much greater detail the contribution of the assets and liabilities to net interest income. The analyst will have an individual time series of the volume and spread of each asset and liability to work with, which is of great help in assessing the stability and recurring nature of that income. The assets and liabilities will also be assigned to business units and activities, which provides further indication of their nature.

The general rule for the classification of net interest income items as structural or secondary is that the more stable the volumes and spreads of the operations originating the income and the more they constitute the core business of the bank, the stronger the argument in favour of treating the income as structural.

The net interest income arising from each interest-earning asset and interest-bearing liability should be estimated by multiplying the average volumes and spreads of a number of representative periods. For the free funds[2], the income or expense is obtained by multiplying the basic interbank overnight interest rate by the average net free funds.

Treasury results merit special attention. The treasury centralizes and manages the interest rate and foreign exchange risk exposures arising from the operations of all business areas of the bank. It also has its own assets and liabilities, such as securities, repos, interbank deposits and risk management instruments that it uses to manage its own exposures or sells to clients.

The treasury usually engages in trading operations (defined as those operations in which market, interest rate or foreign exchange risks are taken) and also in operations of financial intermediation that do not involve those risks. The former operations are speculative and therefore not reliable as

[2] Non-interest-earning assets and non-interest-bearing liabilities.

permanent sources of income, while the latter may or may not be reliable.

Part of the treasury income comes from financial intermediation activities that may be no more, or even less, risky or variable in spread and volume than taking deposits from, and placing loans to, customers. This income could properly be classified as structural net interest income. The other part of the income arises from trading operations, as defined above, and is highly uncertain by nature and should therefore be classified as secondary.

There are compelling arguments in favour of classifying all treasury income as secondary: first, it is difficult to determine the exact borderline between trading and financial intermediation operations; and second, treasury operations, even those of financial intermediation in a strict sense, are usually subject to more rapidly changing market conditions and shorter windows of opportunity than most banking activities. The analyst should consider these arguments in deciding upon the classification of treasury income, but there are no specific rules for that classification, which must be decided upon on a case-by-case basis, in the light of the general rule stated above.

The analyst should be conservative in estimating treasury earnings and other secondary net interest income[3]. He or she may calculate the average results, or the average volume and spread, excluding the highest observations from the series, for example. Even more conservatively, he or she may consider only the stable portion of the series. If the stable portion is considerable, it may reflect results arising from anomalous market conditions, such as high domestic interest rates in relation to foreign rates. Although such anomalous conditions may persist for quite some time, the analyst must assume that

---

3 Secondary net interest income arises from assets and liabilities whose volumes and spreads are considered, in their entirety or in part, unsustainable.

they will eventually disappear and that the income arising from them is unsustainable.

Managerial profitability measurement systems usually contain detailed information on the provisions for loan losses, including the amount of provisions and actual losses for each loan product. Such a detailed history of provisions and losses greatly helps the analyst in estimating provision expenses. He or she should, however, carefully examine the time series of each product in order to identify significant changes in the ratio of provision expenses to volume. Changes in the ratio of provision expenses to volume of loan products may reflect changes in conservatism or in the level of credit risk. The analyst may want to investigate the cause of changes before choosing which periods to consider representative for the determination of the loss ratio to be used for estimating the loan loss provision expenses arising from each loan product.

The more accurate classification of income and expense items as structural or secondary, made possible by the use of managerial information, gives the analyst a clearer view of the evolution of the structural determinants of profitability and of the effects of the secondary determinants. He or she will also be able to visualize separately the evolution of volumes and spreads, which helps in identifying the underlying causes of changes in net interest income.

The use of managerial information will probably enable the analyst to make a more dependable estimation of results than is possible with the use of financial statement data only. Also, the analyst will probably be able to define a narrower range within which future results should fall. Consequently, the analyst will be able to draw more definite conclusions about the earnings position of the bank.

The classification of income carried out for the purpose of estimation of profits is the basis for analysis of the contribution of sustainable and unsustainable sources of income to the earnings. The margin of income from sustainable sources over recurring expenses and the ratio of non-recurring income to earnings and to total income are very important indicators of income reliability and of long-term profitability. Guidelines for the interpretation of information on the contribution of sustainable and unsustainable sources of income to the earnings can be found in Part 5.

Managerial profitability measurement systems usually calculate the results of business units, products and customers, and the analyst may use that information in order to identify the main sources of earnings. The analyst must be careful, however, because these measurements are frequently distorted by inadequate criteria for allocation of income and expenses. Significant business risks are expected to be associated with the main sources of income, and supervisors may want to take that into consideration when deciding on the allocation of supervisory resources.

The analyst will be able to assess the effects on results of changes in volumes and spreads of assets and liabilities, in the loan loss provision ratios, in the basic interest rate and in the overall levels of fee income and operating expenses, by substituting hypothetical values for the estimated amounts of income and expenses. Stress tests can also be performed, by increasing or decreasing one variable, such as the basic interest rate, until the earnings reach a certain predetermined point.

Relevant hypotheses for testing could be: expected developments of business conditions, such as a reduction in spreads or in fee income; reductions in asset volumes due to asset quality problems; changes in capitalization with consequent changes in the total assets and in the asset mix; or non-fulfilment of budgeted income or expenses.

For the formulation of complex scenarios dealing with multiple variables, the analyst may rely on the operating plan and/or corporate budget, which reflect the expectations of the bank for most of the relevant business factors. The analyst may compare these expectations with past performance and formulate scenarios based on the partial fulfilment of expected improvements, for example.

By performing the analysis according to the procedures presented above, the analyst will produce a set of information on the level, composition and sensitivity of earnings. Part 5 provides guidelines for interpreting this information and formulating an overall conclusion about the earnings position of banks.

Part 5: Levels of earnings strength

As a rough guide designed to help the analyst in formulating an overall conclusion about the earnings, the main situations likely to be found (regarding the earnings level, the distribution of income between structural and secondary sources and the sensitivity of the results to changes in business conditions) have been grouped below in three categories representing successive levels of earnings strength. Of course, real-life situations cannot be expected to fit perfectly into the categories described below, but it is likely that the characteristics of one of these categories will be prevailing. The earnings position of a bank may be considered:

a) Strong

– The earnings can be expected to consistently cover the cost of capital. Banks with strong earnings achieve their profitability goals, which reflect the perceived cost of capital[4] and are commonly used in the performance measurement systems to calculate charges on capital allocated to business units and to the organization as a whole.

– The earnings are based on sustainable sources. Gross operating income is sufficient to cover provisions and other secondary recurring charges and to provide an attractive return on capital. Income from unsustainable sources boosts earnings but is not relied upon to achieve profitability goals.

– The bank can resist substantial adverse fluctuations in business conditions without having its profitability significantly impaired. It means that the bank could

---

[4] The analyst may accept this internally perceived cost of capital as the benchmark for the earnings assessment, unless it deviates significantly from market standards for similar banks without good reason.

withstand a recession, an increase in competition or a rise in operating costs without becoming unprofitable, which would only happen if extreme, and unlikely, negative changes in business conditions were to occur. The bank can also sustain sizeable extraordinary losses without having its results turn negative for the period.

A strong market position in the segment, a solid capital base and prudent risk management complement the outlook of a bank with a strong earnings position, giving further indication that this position is likely to remain solid in the future.

Banks with strong earnings positions resort to manipulation of reported earnings mainly for tax and market reasons. They may try to delay recognition of results in order to defer tax payments and may tinker with the reported earnings in an attempt to influence the market price of their securities, mainly by smoothing earnings fluctuations. They may be excessively conservative in their accounting practices in order to conceal the earnings of good periods, thus accumulating some hidden profits that can be used to boost the results of weaker periods. However, in banks with strong earnings positions, even when accounting conservatism is lowered in order to increase profits, it is not likely to be reduced below minimum acceptable standards.

b) Substandard

– The bank's indicated results are positive, but not sufficient to cover the cost of capital. Future results are not likely to meet profitability goals unless positive structural changes occur and/or the business conditions improve considerably.

– The bank relies on income from unsustainable sources to achieve profitability goals. Gross operating income barely covers recurring secondary charges, and, unless the bank earns substantial non-recurring income, profits are low.

– Substantial adverse changes in business conditions would severely impair the bank's profitability. Negative developments, such as may conceivably be expected when the set of likely business scenarios is considered, would cause drastic reductions in the earnings. The occurrence of extraordinary losses commensurate with the risks commonly incurred would be sufficient to wipe out earnings or cause negative results.

Banks with substandard profitability may, for example, be struggling with heavy competition, have an insufficient scale of operations, have poor cost efficiency and/or lack adequate resources for investment and asset expansion, showing narrow margins of capital and liquidity in their balance-sheets. They may resort to increased risk-taking in trying to improve earnings, which could lead to severe losses and deterioration of their financial position. Evidence of these situations, along with low indicated earnings, suggests questionable prospects of future profitability.

Tax and market reasons are also the main reasons for accounting manipulation in the case of banks with substandard earnings. Market reasons, however, are likely to be more important, because results tend to fluctuate more and losses to be more frequent. Accounting conservatism may fall below minimum accepted standards at times.

c) Weak

- The bank's indicated results are negative and are expected to get worse as losses erode capital and liquidity, unless important structural changes occur, such as an extensive corporate restructuring probably involving injection of new capital, and/or business conditions improve dramatically.

- Gross operating income is negative or insufficient to cover provisions and other secondary recurring charges, and the bank depends on income from unsustainable sources to cover recurring expenses. Failure to earn substantial non-recurring income results in significant losses.

– Substantial positive changes in business conditions would not be sufficient to restore profitability. Only a dramatic, and highly unlikely, improvement would. The occurrence of losses commensurate with the risk exposures would cause a serious net loss for the period.

A bank with weak earnings may be expected to have a vulnerable financial position, with decreasing liquidity and a waning capital base. A relaxation of the standards of prudence in risk-management may also be expected, as the bank desperately tries to turn around its earnings, through risky securities operations, cost cutting in back-office personnel and more liberal lending standards, for example. Weak indicated earnings, combined with deterioration in the financial position and imprudent increase of risk exposures points to bleak prospects for future results.

The main reason for manipulation of reported results by banks with weak earnings is to conceal their losses from the markets, the public and the supervisory authorities. Banks may fail to make sufficient provisioning for probable losses and may also fail to recognize losses already incurred. Interest income may continue to be recognized over bad assets, inflating results with income not likely to be collected. These practices cause the overstatement of results, and banks resorting to manipulation frequently pay substantial taxes on income not actually earned. Banks attempting to conceal recurring and material losses frequently fail to comply with minimum acceptable standards of accounting conservatism, and an examination is likely to find serious inconsistencies in their financial statements.

The analyst must also consider the evolution of the earnings position and the ability of the bank to improve its position, which depends on the bank’s resources and the capability of its management. A bank with substandard earnings that has ample access to capital for investment and good management has a better chance of improving its position than a bank with declining earnings that has little access to capital or lacks managerial capability.

Banks with strong earnings positions are demonstrably viable and their situation is not likely to deteriorate quickly. Banks with substandard earnings positions are more precariously viable and their situation may decline if they fail to make organizational progress or business conditions worsen substantially. These banks call for close monitoring to detect any deterioration of the earnings position that could indicate a loss of economic viability and potential risk of financial impairment. Banks with weak earnings positions are unviable and will very probably become insolvent at some point in the future if adequate corrective action is not taken by management or by the supervisory authorities. Such banks call for prompt action in order to assess the extent of the losses that may already have occurred, and to monitor their earnings and the evolution of their overall financial position.

Bibliography

The Staff of Ernst&Young LLP: *The Ernst & Young Guide to Performance Measurement For Financial Institutions: Methods for Managing Business Results.* McGraw-Hill Professional Publishing; ISBN: 1557387370; Revised edition (1 November 1994)

Anthony Saunders: *Financial Institutions Management*. Irwin/McGraw-Hill; ISBN: 007303259X; 3rd edition (29 July 1999)

Graham, Benjamin and David Dodd: *Security Analysis: The Classic 1934 Edition*. McGraw-Hill Professional Publishing; ISBN: 0070244960; (1 October 1996)

Matten, Christopher: *Managing Bank Capital: Capital Allocation and Performance Measurement*. John Wiley & Sons; ISBN: 0471851965; 2 edition (23 May 2000)

Basel Committee on Banking Supervision (2002): *Supervisory Guidance on Dealing with Weak Banks.* Report of the Task Force on Dealing with Weak Banks. Basel: Bank For International Settlements.

Group of Ten (1997): *Financial Stability in Emerging Market Economies.* Report of the Working Party on Financial Stability in Emerging Market Economies. (E), April 1997, ISBN 9291319023.