

**Financial analysis in lending to business:  
A case study of vietcombank**

**By**

**NGUYEN, Anh Huu**

**THESIS**

Submitted to  
School of Public Policy and Management, KDI  
in partial fulfillment of the requirements  
for the degree of

**MASTER OF BUSINESS ADMINISTRATION**

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## **Abstract**

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The banking system plays an important and central role for the economic development of any economy, especially in a developing country like Vietnam. In spite of introduction of new and advanced services, lending activities are still considered the main source of income for Vietnamese commercial banks. However, lending is inherently risky and to have an effective credit evaluation is necessary to assess and manage credit risks. In addition, financial analysis is a key factor in assessing the borrower's financial health. Among the various techniques of financial analysis, the ratio analysis can be considered as the most widely used one with some limitations.

## **Acknowledgement**

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## **Abbreviations and acronyms**

Vietcombank	Bank for foreign trade of Vietnam
SBV	State Bank of Vietnam
HSTC	HoChiMinh City Securities Trading Center
CRR	Credit Risk Rating
L/C	Letter of Credit
BG	Bank Guarantee
FL	Fixed Loan
RC	Revolving Credit
TR	Trust Receipt
OD	Overdraft
FI	Financial Intermediation
SOEs	State Owned Enterprises
LPCs	Local Private Companies
IASs	International Accounting Standards
VASs	Vietnam Accounting Standards

## **CHAPTER 1**

### **INTRODUCTION**

#### **1. RELEVANT OF TOPIC**

The main purpose of this thesis is firstly to explore the applicability and reliability of the financial ratio analysis in the bank credit evaluation in lending activities in Vietnam. To this end, a brief overview on the theoretical bases of the financial analysis will be made, including calculation formulas, point out strengths and weaknesses.

Secondly, the current practices and problems of employing the financial analysis in credit evaluation in the real world will be analyzed with a case study on a bank for foreign trade of Vietnam (Vietcombank or VCB).

Established in 1963, it always Vietcombank's policy to ensure constant prudence in credit activities with their focus on analyzing borrowers' financial health. In view of the banks lending direction, in which lending to business account for the majority in the overall loan portfolio, such analysis even higher importance. However, there are certain shortcomings in the adoption and application this tool, which has affected its efficiency.

Lastly, based on current practice in lending to business at Vietcombank, the study will recommend several solutions with the aim to improve the efficiency of the tool.

The above situation was due to various reasons such as lack of sufficient and reliable data, lack of good benchmarking system, and weak combination with other tools. Improvement of the efficiency of ratio analysis, coupled with other tools, is thus necessary to facilitate credit analysts in their daily works so that they can do their job quickly and efficiently.

## **2. THE METHODS AND STRATEGIES OF RESEARCH**

Scope of thesis: The study is restricted in the following scopes:

- Theoretically, it focuses on financial analysis as a tool in the credit evaluation to lend to business only. Project financing, which requires the assessment of project specific risks by adopting a different set of measures, is not subject to this study.

- Practically, it only analyzes the current practices at a particular commercial bank, namely VCB, based on which recommendations for improvement are made.

In view of the specific purposes and limited scopes above, the methodology used in this thesis will includes three steps:

**Step 1**: Quantitative analysis different financial analysis techniques approach in lending activities at theoretical level and their applicability;

**Step 2**: Point out in details on the Vietcombank's credit evaluation process practice in its financial analysis;

**Step 3**: Based on analyses at step 1 and 2, the study will recommended for financial analysis in lending to business at Vietcombank.

In details, the thesis will try to address the following questions:

Why is financial analysis an important in credit evaluation in lending activities and which techniques are adopted in financial analysis?

What are the weaknesses in financial analysis at Vietcombank's current credit evaluation practice?

How can Vietcombank improve the efficiency of its financial analysis?

### **3. STRUCTURE OF THE THESIS**

The thesis includes five chapters. After the thesis is briefly introduced in Chapter 1, Chapter 2 will present theoretical framework of bank lending activities and focus on financial ratio analysis. Chapter 3 mention to current practice in financial analysis in lending to business of Vietnam's banking system. Chapter 4 will give some recommendations for improvement of efficiency of financial analysis at Vietcombank including micro and macro level. Lastly, Chapter 5 will conclude the research.

**CHAPTER 2**  
**Theoretical Framework of Bank Lending Activities**  
**Focus on Financial Ratio Analysis**

**1. COMMERCIAL BANKS AND ITS ACTIVITIES**

**1.1. Commercial Banks in a Market Economy**

Commercial banks comprise the largest group of depository institutions in size. They perform functions similar to those of savings institutions and credit unions; that is, they accept deposits (liabilities) and make loans (assets). However, they differ in their composition of assets and liabilities, which are much more varied. Commercial bank liabilities usually include several types of non-deposit sources of funds, while their loans are broader in range, including consumer, commercial, and real estate loans. Commercial banking activity is also regulated separately from the activities of savings institutions and credit unions. Within the banking industry the structure and composition of assets and liabilities also vary significantly across banks of different asset sizes.

General speaking, in a simple and common sense, commercial banks are business in which trade in money. The major business activities of a commercial bank as follows:

Fund raising: via various types such as demand deposits, saving accounts, term deposits and debt instruments.

Fund allocation: mainly in the forms lending (loans and advances) or investment in financial instruments (e.g. notes, bonds or stocks).

Providing services: payments, remittances, foreign exchanges, guarantees, asset custody, and advisory services

Besides the fees collected from rendering services, the major sources of bank's income come from its asset transformation process, i.e. when it sells liabilities and buys assets with different degree risks and returns.

Being the most popular and traditional type of financial intermediary, especially in developing countries like Vietnam where capital and money market are still underdeveloped, banks are the main channels in the economy to transfer the temporarily idle funds from savers to users. Besides, their increasingly diversified and advanced services also facilitate the daily operations of individuals, economic entities and the whole economy. Meanwhile, in spite of the increasing importance of such as services, lending is still paying the major source of income for most commercial banks.

## **1.2. Risks in banking operations**

Banking operations always involve inherent risk. Risk is understood as the associated with the return on an investment. The higher risk, the higher return should be and vice versa. While looking for value maximization and

ensuring its safety at all times, banks must always balance between the risks they can take and the respective expected returns. A prudent banker would not take an excessive risk, which will jeopardize shareholders' investment in the bank and more importantly, the depositors' money that is entrusted to it.

When lending its money or rendering a service, a bank accepts risks at different levels. Different bankers have different interpretation on what is their reasonable or acceptable risk. A risky loan to a prudent banker can be viewed as a safe lending via an aggressive lender.

According to Anthony Saunders<sup>1</sup>, There are 9 types of risks associated with financial intermediation (FI) such as interest rate risk, market risk, credit risk, off-balance-sheet risk, technology and operational risk, foreign exchange risk, country or sovereign risk, liquidity risk and insolvency risk

Interest rate risk: the risk incurred by an FI when the maturities of its assets and liabilities are mismatched. There are two subcategories risks related to interest rate risk: (1) refinancing risk: the risk that the cost of rolling over or re-borrowing funds will rise above the returns being earned on asset investments and (2) reinvestment risk: the risk that the returns on funds to be

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<sup>1</sup> Anthony Saunders, 2003, "Financial institutions management - A risk management approach", 4<sup>th</sup> edition, Irwin/ Mc GrawHill.

reinvested will fall below the cost of funds.

Market risk: the risk incurred in the trading of assets and liabilities due to changes in interest rates, exchange rates, and other asset prices.

Credit risk: the risk that the promised cash flows from loans and securities held by FIs may not be paid in full. Credit risk can be divided by three subcategories: (1) firm-specific credit risk: the risk of default of the borrowing firm associated with the specific types of project risk taken by that firm, (2) systematic credit risk: the risk of default associated with general economy wide or macro conditions affecting all borrowers and (3) portfolio risk: the risk can be estimated by the portfolio's standard deviation and it will decline as the number of assets in the portfolio increase. In the real world, where correlations among individual assets are generally positive but less than 1.0, the risk can be eliminated.

Off-balance-sheet risk: the risk incurred by an FI due to activities related to contingent assets and liabilities. A good example is the issuance of standby letter of credit that is a credit guaranty issued by an FI for a fee on which payment is contingent on some future event occurring.

Technology and operational risks: risk of direct or indirect loss resulting from inadequate or failed internal process, people, and systems or

from external events. The major objectives of technological expansion are to lower operating costs, increase profits, and capture new markets for the FI. In current terminology, the objective is to allow the FI to exploit, to the fullest extent possible, better potential economies of scale and economies of scope in selling its products. Economies of scale that mean the degree to which an FI's average unit costs of producing financial services fall as its outputs of services increase and economies of scope that mean the degree to which an FI can generate cost synergies by producing multiple financial service products. Technology risk occurs when technological investments do not produce the anticipated cost saving in the form of either economies of scale or scope. Besides, operational risk is partly related to technology risk and can arise whenever existing technology malfunctions or back-office support systems break down.

Foreign exchange risk: the risk that exchange rate changes can affect the value of an FI's assets and liabilities located abroad.

Country or sovereign risk: repayments from foreign borrowers may be interrupted because of interference from foreign governments.

Liquidity risk: the risk that a sudden surge in liability withdrawals may leave an FI in a position of having to liquidate assets in a very short period of

time and at low prices.

Insolvency risk: the risk that an FI may not have enough capital to offset a sudden decline of its assets relative to its liabilities.

## **2. CREDIT EVALUATIONS AND FINANCIAL ANALYSIS**

### **2.1. Credit Evaluation**

Some people said that a credit staff must “lend the bank’s money as if it is belonged to somebody else but entrusted to him for safe keeping”. Others are guided “to lend the bank’s money as if you are lending your own money”. Both are correct as when realizing that it is responsibility to make good the money if it is lost, the credit staff will try to tighten all possible loopholes in his lending decision.

This is true as most of the money that is lent out is customers’ deposits which are mostly payable on demand. If the lending bank cannot collect its debts, the depositors will be at first and most affected, which in turn can place the bank in worse situations such as run on deposit or bankruptcy.

Therefore, credit evaluation plays a very important role in the overall credit processing to ensure that the money is lent to creditworthy and financially capable borrower and it will be paid back as committed. The credit staff will adopt various tools and techniques, based on all available information,

to judge whether the lending decision is wise or not, the risk is acceptable or not and what are the necessary terms and conditions for such lending (e.g. loan amount, interest rate, collateral requirements, etc.)

The possibly most popular and well-know model of credit evaluation is the 5 Cs. It considers the following 5 factors starting with letter C:

*Character.* To analyze this factor is to attempt to gauge the determination and desire of a borrower to repay his or her loan. This is important as some borrowers simply refuse to pay although they are able to pay. Among various “personal values”, the 3 qualities, which deserve the most attention, are integrity, honesty and creditability. If borrower is judged creditworthy (i.e. positive on all the above aspects), we can be quite sure that he is genuine in the application and unlikely to deceive the lender. He or she will tend to honor his/her commitment as agreed. For a business borrower, the characters of its prime movers (e.g. management) are subject to this analysis as they reflect the behaviors of the business. The information needed to analyze character factor can be come from various sources such as friends, colleagues, employers, past lenders, financial records, etc.

*Capacity.* while the first C deals with the borrower’s willingness to pay, the second C gauges his capacity to pay. No matter how good his/her social

position is, the borrower still defaults if he is in no financial position to pay the loan even though he/she is willing and wants to do it). As the source of repayment is from the cash, the determination of the borrower's repayment capacity must be based on the assessment of the projected cash flow available for loan payments.

*Conditions:* This factor refers to the environment in which the borrower will utilize the loan, generate income and repay the loan. It includes many components with different parties involved, all of which need to be taken into consideration. Conditions include internal factors (i.e. specific and unique to the business itself) and external factors (i.e. at industry or economy level, which affect all business in the same playing field-though differently). These factors can be analyzed by using SWOT model.

*Capital:* This refers to the amount that the borrower himself puts in the business or project. This is the most objective factor among the 5Cs. The capital does not only reflect the borrower's financial strength but also indirectly indicates his commitment and confidence in the business, the more committed he is at making the business succeed and repay the loan.

*Collateral:* any asset that can be valued and realized by the lender as a "cushion" for the lending. As banks do not specialize in asset liquidation

(and also don not want to collect their loan this way), collateral is just the last resort that they can fall back on when the risk in future turns unmanageable.

However, the “6<sup>th</sup> C” - common sense - seem to be the most important C as it helps interpret all the 5 Cs above. A “wealthy” borrower, for example, may not be what he appears to be if it is found that his income comes mainly from share speculation (which is risky and unstable). A good and experienced analyst would be the one who can use this final C to interpret the other 5 Cs and come out with decisions.

## **2.2. Financial Analysis in Credit Evaluation**

Information used in credit evaluation can be classified as qualitative and quantitative ones. While qualitative analysis refers mainly to non-financial information (e.g. management ability, market competitiveness) and is applied to analyze character and conditions (2 out the above 5 Cs), quantitative analysis uses financial data of the borrower, including historical and projected figures, to consider the other 2 Cs (i.e. capacity and capital).

Quantitative information is mainly obtained from financial statements and other sources (stock market, industry practices and norms, sector reviews, etc.). There are several tools and techniques analyze such information.

According to Stickney & Weil<sup>2</sup>, they include:

*Time series (or horizontal) analysis:* computing the changes of the current period in comparison with the period one (normally on yearly basis) in both amount and percentage terms. (Hence, it is also called “comparative financial statement”). This technique enables analysts to compare the company’s performance between two consecutive periods or points of time.

*Trend analysis:* computing the changes in several consecutive years (normally 5 or more) instead of only two years. Figures are “indexed” on a base year (hence called “common base” statements by some author <sup>3</sup>) to help investigate the movement trends. Trend analysis is important to point out changes in the business (as it deals with figures in medium and long terms).

*Vertical analysis:* computing percentages between different components to a single total figure to show their comparative relationships. Such “common size statement” (as it ignores the difference in business scale) is useful to compare different companies in the same industry or to analyze the contribution toward the overall performance by different segments.

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<sup>2</sup> Clyde P. Stickney & Roman L. Weil, 1997, “Financial accounting” – An introduction to concepts, methods and users”, 8<sup>th</sup> edition, Drydebt, drydebt Press, p. 683

<sup>3</sup> Stephen A. Ross, Randolph W. Westerfield and Bradford D. Jordan, 1998, “fundamentals of corporate finance, alternative edition, Iwrin/ McGraw - Hill, p. 54

*Ratio analysis*: showing the relationship between components of the financial statement in a meaningful way. Ratios serve as a guide or shortcut to evaluate a firm's financial position and operations and enable analysts to compare figures of the same company at different time or between different companies. Unlike the above techniques (which are only based on one statement), ratio can refer to figures from several statements at the same time. However, ratios can only serve as indicators and may not reflect the actual facts. As a standing-alone ratio would not tell much, it requires the analyst to "read" various underlying data instead of making simple comments on the changes in figures. Thus, a deep understanding of the business operations of the borrowing company is still imperative in ratio analysis as well in using other tools in credit evaluation. As such, in addition to financial information, the analyst also needs non-financial (or qualitative) information to support their analysis to come out with the right lending decision.

### **3. FINANCIAL RATIO ANALYSIS**

#### **3.1. Overview**

In fact, the above tools are not used separately but in a combination with each other. However, while other tools are based on a single financial statement (e.g. balance sheet or income statement) at a time and mainly

shows changes or compositions of the statement, ratios summarize a great deal of data into standard forms that are easy to understand and compare. In addition, it can link figures from several statements together for analysis. As such, out of the aforesaid techniques, ratio analysis may be the most widely used. Based on financial ratios, a credit analyst will be able to: (1) have an overview on the borrower's historical performance and current financial health, (2) see the trend of movement in their performance or business operations, and (3) forecast or assess the customer's projection for future performance.

Ratio and percentages are widely used to analyze company accounts because they can give meaning and significance to numbers that are not so readily apparent from the detailed numbers themselves. They help to simplify an analysis and at the same time can focus on key aspects of performance. The reason why ratio analysis can be so useful is that it is based on comparisons. It is only by means of comparison that performance can be properly judged.

The purpose of calculating a financial ratio is to obtain information about a company's financial position by comparing the ratio with: (1) trends in the same ratio for the company over a period of time: does the ratio indicate that the position is improving, stable or getting worse? (2) "Standard" or

“normal” ratio that are generally considered desirable, (3) Ratio for similar company can be judged against that of a rival, or a company in a similar sphere of operations. Each ratio must have a particular purpose and focus on a particular issue. If it is not clear why a ratio is being calculated, there is no point in calculating it at all.

Financial ratio analysis is a simple tool. Calculate of ratios and changes are not difficult as it is based on the generally accepted and meaningful formulas. However, interpretation of such resultant figures and the underlying reasons for such changes is more difficult which require the analysts to have a deep understanding and insight on the borrower’s business as well as the environment they are operating in.

### **3.2. Commonly Used Financial Ratio**

In practice, there are many different financial ratios that can be calculated and analyzed. Banks and companies will each have their own set of ratios that they prefer to use. The same basic ratio can often be calculated in a number of different ways, and the method chosen by analysts in any bank or company will again depend on individual preference. This mean that although credit analyst will use a number of ratio to carry out a financial analysis of a company, perhaps selecting and measuring 20 to 25 ratios, no

two banks or companies will select the same group of ratios and measure them in exactly the same way. There is no official package of ratios that enjoys widespread use.

Although a wide variety of ratios can be used, it is possible to group ratios into a few distinct categories relating to a particular aspect of the company's financial position. Here, this research prefer to follow the grouping proposed by Ross, Westerfield and Jordan (1998)<sup>4</sup> and combine to Brian Coyle<sup>5</sup> as well as other authors such as J. Fred Weston and Eugene F. Brigham<sup>6</sup>; Douglas R. Emery and Jonh D. Finnerty<sup>7</sup> to classify financial ratios into 6 groups, which measure profitability, financial risk, liquidity, working capital and cash cycle, asset management ratios and market value ratios.

### **3.2.1. Profitability ratio**

With these ratios, the analyst will show how profitable is the company? How does it make profit? And this is important due to a company must make profits in the long term to survive. Profit margins should be adequate.

In the long term – and perhaps in the short term too – companies must

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<sup>4</sup> Stephen A. Ross, Randolph W. Westerfield and Bradford D. Jordan, 1998, "fundamentals of corporate finance, alternative edition, Iwrin/ McGraw – Hill

<sup>5</sup> Brian Coyle, "Corporate credit analysis", 2000, Glenlake publishing company, Ltd.

<sup>6</sup> J. Fred Weston and Eugene F. Brigham, "Principles of finance with corporate applications", 1991, West publishing company

<sup>7</sup> Douglas R. Emery and Jonh D. Finnerty, 1998, "Managerial finance", the Dryden Press

be profitable if they are to survive. Giving credit to a loss –making company will be a bigger risk than giving credit to a very profitable concern. There are in between cases too, difficult to judge properly, where a company is making profits that are fairly small (and perhaps marginal) in view of the size of its operations and turnover. Profitable companies can sometimes go into liquidation because their debts are too high. Nevertheless, profitability remains a key guide to the probable solvency and liquidity of a company, especially in the longer term. The credit analyst should be particularly interested in the vulnerability of the company to a downturn in sales, and its potential consequences for profits.

Profitability should be judged in relation to the size of the company and the volume of its business. There are three main ratios with which profits have traditionally been assessed: Return on assets, or return on capital employed, profit/sales ratio (profit margin) and asset turnover.

*Return on capital employed (ROCE)*: it compares the amount of profit in relation to the size of the company

$$ROCE = \frac{\text{Profit}}{\text{Capital employed}} \times 100\%$$

Unfortunately, there are various ways of defining both profits and assets employed. Profit may be considered to be: (1) profit before interest and

tax (PBIT), (2) profit after interest, but before tax, on ordinary activities only, (3) profit after tax, on ordinary activities or (4) profit (before or after tax) including extraordinary items of profit or loss as well as profits on ordinary activities. Capital employed should be: (1) stockholders funds, i.e. share capital and reserves plus long-term debt, (2) stockholders funds plus total debt, i.e. long-and short-term debt and finance leases or (3) stockholders funds plus total debt plus provision.

The analyst should take a view on whether the assets of the business should include any intangible fixed assets in the balance sheet, such as brand values or development costs. The analyst should also consider the impact of any revalued assets and of goodwill written off against reserves. It is important to be consistent from year to year otherwise ratios lose their value for comparisons over time, or comparisons with other companies in the industry.

A common method of measuring ROCE is:

$$ROCE = \frac{\text{Profit before interest and tax (PBIT)}}{\text{Stockholders funds plus long-term debt}} \times 100\% \quad (1)$$

*Profit margin ratio:* is probably the most readily understood financial ratio. It measures the size of profit in relation to sales turnover, and can be measured as either gross profit margin or net profit margin.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}} \quad (2)$$

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} \quad (3)$$

Gross profit is the value of sales minus the costs that are directly associated with whose sale. Net profit is the gross profit minus other costs, such as administrative and distribution costs. Net profit can be taken as profit before interest and taxation (PBIT), profit after interest but before taxation (PBT) profit after taxation (PAT). Any exceptional or extraordinary items of profit or loss would probably be ignored, because of their unusual and non-recurring nature. Whichever method of measuring net profit is used, it should be applied consistently.

Profit margin should be compared from one year to the next, and between one company and another. The analyst might want to know why once company is achieving gross margins lower competitor. Its costs could be too high, perhaps, and the company might be losing its competitiveness. Falling margins could be a concern; for example, if company was achieving a net profit margin of 3% in year 1 but achieved only 1% in year 2, the fall in profit could be alarming. Indeed, a combination of rising costs and static sales prices can be considered to be symptoms of an economy in recession.

### **3.2.2. Financial risk ratios**

Financial risk, for the purpose of credit analysis, can be described as

the risk that a company will not be able to repay its debts in full or on time because its debt burden is too large. Financial risk is high when there are doubts about whether the company will have the money to pay, from any source. Debts can be repaid from three main sources: (1) cash coming into the business, mainly from trading operations, (2) cash raised by the company from the sale of fixed assets, stocks or investments and (3) new funds raised by the company, such as a new loan for the repayment of other loan, or a rights issue of shares.

For lending decisions, it should normally be assumed that the opportunity to raise new funds does not exist. Granting loans for the repayment of other loans is usually bad practice.

Ratio can be used to assess a company's ability to meet its debt obligations from either of the other two sources, income from trading operations or "selling off the family silver" and disposing of assets or investments.

Once concern might be whether the company has enough assets to sell off, if the necessity arose, to repay its debts. A common measure of financial risk that relates the size of debt to the value of the business is the financial leverage ratio. A second measure of risk that relates the size of

interest payments to the company's trading profits is interest cover.

*Financial leverage:* financial risk is commonly measured by leverage.

Leverage is the ratio of "prior charge capital" relative to the size of equity capital or relative to the size of total capital. Leverage can be measured in a variety of ways such as:

$$\text{Leverage} = \frac{\text{Prior charge capital}}{\text{Equity}} \times 100\%$$

$$\text{Leverage} = \frac{\text{Prior charge capital}}{\text{Total capital}} \times 100\%$$

Either balance sheet values or market values can be used, for both prior charge capital and equity. Assuming balance sheet values are used, the definition of the items in formulate are as follows:

*Equity = Common stock in issue plus balance sheet reserves*

Prior charge capital = the balance sheet value of all longer-term capital that has a prior claim on profits ahead of equity stockholders. It consists of bank loans, finance loans and debentures under the heading in the balance sheet of "creditors: amounts falling due after more than one year". It is also usual to include preferred stock within prior charge capital

Short-term bank loans (with less than one year to maturity) can also be included in prior charge capital, on the assumption that the company will need to renew/renegotiate the loans for a further term, so that they are, in

effect, a part of the company's longer-term funding. Certainly, in case where a company has a large amount of debt nearing maturity, and short-term loans and overdrafts, these debts cannot be ignored when making an assessment of leverage.

Banks might therefore prefer to use a leverage defined as:

$$\text{Leverage} = \frac{\text{Debt capital (short – and long – term interest – bearing debt)}}{\text{Equity}} \times 100\%$$

This definition of prior charge capital is not used universally by any means. Bankers could include preferred stock with equity instead of “with prior charge capital”, since creditors have a prior claim on the assets of a company in liquidation ahead of all stockholders, including preferred stock.

Leverage as the ratio of prior charge capital to equity, a company is said to be highly leverage ratio rises above 100%. This is when prior charge capital exceeds equity capital as a source of funds for the business.

There is no “ideal” or maximum leverage level, but higher leverage indicates higher financial risk. If company's leverage is increasing, its perceived financial risk will also rise. At some stage, lenders will decide that enough is enough, and that no further lending to the company should be grand, unless at very high rates of interest.

An important advantage of the leverage ratio is its widespread use.

Bankers, financiers, accountants and other businessmen and professionals all generally understand what leverage means. There is also likely to be a feeling “in the market” about what constitutes high leverage (or excessive leverage) in the current economic and business climate.

*Interest cover ratio*: measure of financial risk that is designed to show the risk in terms of profit rather than in terms of capital values. The interest cover ratio monitors the ability of the company to meet its interest commitments. It is the possibility of a company failing to pay interest that represents the main danger of high gearing. Interest cover is therefore an important measure of credit risk. The interest cover ratio is measured:

$$\frac{\text{Profit before interest and tax (usually ignoring any exceptional items)}}{\text{Interest charges}}$$

The interest cover ratio shows whether a company is earning enough profits (before interest and tax) to pay its interest costs comfortably, or whether its interest costs are high in relation to the size of its profits. If interests costs are high in relation to profits before interest and tax (PBIT), any fall in profits could leave the company unable to meet its interest payment obligations, and in danger of being forced into liquidation.

An interest cover of two times or less would be very low and cover of three times would also be regarded as low. Cover should be above three

times before the company's interest costs would be considered within acceptable limits. Most treasurers finance directors and analysts look for interest cover of five times or higher. However, as with most ratios, a low interest cover in one year might be a temporary problem that will soon disappear as profits rise or interest costs fall. A low and deteriorating interest cover ratio from one year to the next would be much more worrying.

Interest cover focuses on interest payments (including interest payments on hire purchase and finance lease obligations). It doesn't consider the payment or repayment of the principal amount of the loan or a trade debt.

*Debt ratio:* For the analysis of a potential customer for credit, another useful financial risk ratio is the debt ratio. This is a measure of the percentage amount of the company's total assets that are being financed by credit of one sort or other.

$$\text{Debt ratio} = \frac{\text{Total creditors}}{\text{Total assets}}$$

Trends in this ratio over time can be monitored. A higher ratio indicates a higher financial risk. A ratio in excess of 50% indicates a high level of total borrowing, but there is no "ideal" maximum debt ratio within which companies should try to operate.

*Long-term debt ratio:* when taking about long term solvency, people

may be more concerned on long term debts rather than short term ones. As such, the long-term debt ratio is calculated as follows:

$$\text{Long term debt ratio} = \frac{\text{Long term debt}}{\text{Long term debt} + \text{Total equity}}$$

As equity is considered as a special long term debt (payable to stockholders), the denominator in the above formula is often called the total capitalization.

*Times interest earned ratio (TIE)*: while the above ratio measures the company's overall financial structure, TIE indicates its ability to generate earnings to meet interest payments obligations in the current year.

$$\text{TIE} = \frac{\text{Earnings before interest and tax (EBIT)}}{\text{Total interest expenses}}$$

The higher the ratio, the better protection the company has against its borrowing interest burden. If TIE is slightly around 1, it means that the company's earning is just enough to interest and tax would be close to zero.

Some people opine that interest payment requires cash and prefer to use earnings before interest, tax, depreciation and amortization (EBITDA) as the numerator instead of EBIT, which will result in the cash coverage ratio.

*Debt service coverage ratio*: while TIE only considers the ability to service interest, it is the total debt payment obligations (including both principal and interest) that are of more concern. A more relevant measure – debt service coverage ratio - is used in this case.

$$\text{Debt service ratio} = \frac{\text{Cash flow from operations before interest and tax}}{\text{Interest and principal payments}}$$

The firm will have a good coverage over its loan payment obligation if they can maintain high debt service ratio. If cash flow statement is not available to calculate the numerator, EBITDA can be used instead, though the result may not be highly accurate.

### **3.2.3. Liquidity ratios**

Liquidity ratios compare the amount of the company's liquid assets with its short-term requirements to pay creditors.

Liquid assets, i.e. assets that are cash or will soon be turned into cash, can be defined in several ways, but the most commonly used are either total current assets including stocks or current assets excluding stocks.

Stocks are generally less liquid than debtors and other current assets. In some cases, however, such as supermarkets selling consumer non-durables, stock is very liquid, with a short shelf life and a rapid turnover. Defining liquid assets should depend on just how liquid the stocks are in the business of the particular company.

A liquidity ratio compares a company's liquid assets with its short-term debts (current liabilities). The most commonly used liquidity ratios are the current ratio and the quick ratio (or acid test ratio).

*Current ratio*: the standard test of liquidity is the current ratio.

$$\text{Current assets} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

The ideal behind this ratio is that a company should have enough current assets that give a promise of “cash to come” to meet its future commitments to pay off its current liabilities. This suggests that the current ratio should be higher than 1:1. If current assets did not exceed current liabilities, there would be the prospect that the company might be unable to pay its debts on time. In practice, a ratio comfortably in excess of 1:1 should commonly be expected, but what is “comfortable” varies between different types of business. In industries where it is normal to pay creditors after stocks have been used and resold, such as in supermarket retailing, a current ratio of less than 1:1 would be comfortable.

*Quick Ratio or Acid test Ratio*: Companies are usually unable to convert all their current assets into cash very quickly. In particular, some manufacturing companies might hold large quantities of raw material stocks or have a long production cycle (e.g. aircraft production). Stocks of finished goods could be warehoused for a long time prior to sale. In such businesses, where stock turnover is slow (most stocks are not liquid assets) because of the cash cycle is so long. For this reason, an alternative liquidity ratio, known

as the quick ratio or acid test ratio, might be more useful for analysis.

$$\text{Quick ratio} = \frac{\text{Current assets less stocks}}{\text{Current liabilities}}$$

This ratio should ideally be at least 1:1 for companies with a slow stock turnover. For companies with a fast stock turnover, however, a quick ratio can be comfortably less than 1:1 without suggesting that the company should be in cash flow trouble. This is because stocks are relatively liquid assets.

Both the current ratio and the quick ratio offer an indication of the company's liquidity position, but the absolute figures should not be interpreted too literally. It is often theorized that an acceptable current ratio is between 1.5 and 2.0, and an acceptable quick ratio is around 0.8 to 1.0, but these should only be used as a guide. Different businesses operate in different ways. One supermarket chain, for example, can operate comfortably with a current ratio of 0.44, and more trade creditors than stocks. This suggests that stock is resold before it is paid for - a common trait in the retail trade.

What is important is the trend of the ratios. From trends, the analyst can judge whether liquidity is improving, deteriorating, or stable. If the supermarket had traded profitably for the past 10 years with current ratios of 0.44 and quick ratio 0.18, it should comfortably continue with those levels of liquidity. If in the following year its current ratio were to fall to 0.29 and its

quick ratio to 0.03, then a further investigation into the liquidity situation would be appropriate. It is the relative position that is far more important than the absolute figures.

The other side of the coin either is a current ratio and a quick ratio can get bigger than they need to be. It clear that company those large volumes of stocks and debtors might be over investing in working capital, and typing up more funds in the business than necessary. This would suggest poor management of debtors (credit) or stocks by the company.

The current ratio and quick ratio are useful in several ways. They can be used to obtain year on year comparisons and identify trends in the company's liquidity position. They can be used for comparisons of working capital and liquidity with other companies in the same business sector.

Companies cannot safely afford to have a poor current ratio and quick ratio is not exact guides to liquidity. Current liabilities could have maturities that range from "very soon" to "up to one year away". Bank overdraft facilities can be renewed, and thus have an even longer maturity in practice.

Even a higher current ratio, which ought to be a sign of good liquidity, could be a cause of liquidity difficulties for a rapidly expanding company. As the company's business grows, it will need much more working capital to

support the growth than a company that can operate with a low current ratio.

*Inverse of Current Ratio:* Although the current ratio is commonly used, an analyst could prefer to look at the inverse of the current ratio:

$$\frac{\text{Current Liabilities (CL)}}{\text{Current Assets (CA)}}$$

This shows the proportion of current assets that are being financed by current liabilities. If the CL/CA ratio is 60%, for example, 60% of current assets would be financed by current liabilities, leaving 40% financed as working capital by long-term funds of the business.

*No Credit Interval (NCI):* Other ratios can be used to monitor liquidity. An interesting alternative is the NCI. This can be defined as an estimate of the length of level of activity, by drawing on its own liquid resources and on the assumption that it made no further sales.

Put another way, it is based on the view that current assets, with the exception of stocks, will soon be realized into cash. Similarly, current liabilities must soon be paid. The difference, net current assets minus stock levels, should soon be available in cash to the company. The size of this surplus can then be compared against the volume of the company's regular expenditures.

The formula for the NCI is as follows:

$$NIC = \frac{\text{Current assets (excluding stock) minus current liabilities}}{\text{Daily operating expenses}}$$

Daily operating expenses can be estimated from the company's accounts as:  $(\text{Sales} - \text{Profit before tax} - \text{Depreciation and amortization})/365$

Here, depreciation and amortization are deducted because they are not cash expenditures.

#### **3.2.4. Working capital and cash cycle**

Working capital is the capital invested by a business in its working assets. The investment consists principally of stocks, work-in-progress and debtors. These are assets that will (at some time in the fairly near future) provide the business with cash from its trading operations. Stocks will be sold and debtors will pay what they own.

For the credit analyst, working capital is significant for three main reasons: First, a company could have an excessive amount of working capital, in particular stocks and trade debtors. This would be an inefficient and wasteful use of capital. When a company seeks a bank loan to finance an increase in its current assets, the analyst should therefore check whether extra assets are really necessary. Second, a company could have insufficient working capital. This could be due to an over reliance on short term liabilities, in particular trade credit and a bank overdraft to finance its current assets. A bank or supplier should consider whether it is appropriate to continue

extending credit to the company, where an injection of longer term finance might be more appropriate. Lastly, there is a connection between a company's working capital and its cash flows and liquidity, matters of prime concern to the credit analyst. Cash comes in from selling stocks and from payments by debtors. Cash goes meet the payments going out.

Key elements of working capital for a trading company are stocks, trade debtors and trade creditors. These exist because there is a trade cycle and an associated cash cycle. The trade cycle starts with the purchase of resources (materials, labor, etc.) and ends with the sale of a finished product or service to the customer. Trade is a continuous cycle of buying and selling.

The cash cycle starts with the payment for purchased resources and ends with cash receipts from sales to customers. There is a continuous cycle of cash out - cash in - cash out, etc. Payment from customers allows the company to pay its supplies, and purchase more raw materials, etc., so that the trading cycle can continue.

Both the trade cycle and the cash cycle can be measured by time. The cash cycle describes the average of time that elapses between the payment for the purchase of raw materials, components or supplies by a company and the eventual receipt of cash from customers who buy the finished goods or

services. In short, it is the average time between paying out cash and getting cash in from trading operations.

*Cash cycle ratio:* The length of a cash cycle can be estimated by three ratios or time measurements:

(1) Average stock turnover: this is usually measured in days and it reflect average period of time for which stock is held between purchase and eventually sale of the end product or service.

$$\text{Stock turnover} = \frac{\text{Stocks in hand}}{\text{Cost of good sold}} \times 365 \text{ days}$$

(2) Creditor days. This is average period of credit, in days, taken from suppliers. It measures average length of credit period obtained from suppliers.

$$\text{Creditor days} = \frac{\text{Trade creditors}}{\text{Cost of good sold}} \times 365 \text{ days}$$

(3) Debtor days. This is the average period of credit, in days, given to customers. It means average length of credit period given to customers.

$$\text{Debtor days} = \frac{\text{Trade debtors}}{\text{Sales}} \times 365 \text{ days}$$

These ratios can only be approximated from information in a company's published accounts, and the ratios will be exact. However, if the ratios are measured consistently over time, trends in the length of the cycle will become apparent, and significant changes identified. In some cases, there could be a generally accepted "normal" cash cycle within an industry. Ratio analysis

should be a practical and effective method of identifying when any company in an industry has an excessively long or short cycle compared to others.

### **3.2.5. Asset management or activity ratios**

In order to assess the efficiency in the company's management of its assets, a number of activity ratios are used including receivable turnover or average collection period, inventory turnover or average stock holding period and asset turnover ratio.

*Receivable turnover ratio* or *average collection period* lets us know how fast the company can collect its debts. The calculation formulas are below:

$$\text{Receivable turnover} = \frac{\text{Net credit sales}}{\text{Average accounts receivable}}$$

$$\text{Average collection period} = \frac{\text{Number of days in the period}}{\text{Account receivable turnover}}$$

These above ratios can help solve the problems regarding the collection period mentioned earlier in the liquidity assessment. Two companies with the same current ratios may have different liquidity if their collection periods differ.

In order to analyze the efficiency in managing inventory, *inventory turnover ratio* and *average stock holding period* are used to measure how fast the company can sell its stock or how long the goods sit on stock.

$$\text{Inventory turnover ratio} = \frac{\text{Cost of good sold}}{\text{Average inventory}}$$

$$\text{Average stock holding period} = \frac{\text{Number of days in the period}}{\text{Inventory turnover}}$$

If cost of goods sold figure is not available and the profit margin remains fairly stable over the years, using turnover as numerator instead of costs of sales can also come out with an approximation of inventory turnover.

While the above ratios measure the efficiency in management of each individual asset item, *assets turnover ratio* provides analyst with an overall picture. Asset turnover is a ratio that can be used to assess whether the volume of sales achieved by the company is sufficient in view of the amount of assets that is has invested in operations.

$$\text{Asset turnover ratio} = \frac{\text{Total sales}}{\text{Average total assets}}$$

Asset turnover can therefore be expressed as \$X of sales per \$1 of assets invested. Asset turnover is a useful ratio because it provides an indication of how successfully the business is generating sales turnover. A higher asset turnover implies a bigger volume of sales.

### **3.2.6. Market value ratios**

It is noted that the above profitability ratios are all based on accounting profit and a comparison between such ROA or ROE with the interest rate observed in the markets may be inappropriate.

As such, it is necessary to measure the market value of a company.

Some other ratios, which are based on market information rather than financial statements, are used, including earnings per share (EPS) and price - earning ratio (P/E)

For companies listed on the stock market, earning per share (EPS) is the most important statistic figure

$$EPS = \frac{\text{Net income}}{\text{Number of shares outstanding}}$$

According to Proter and Norton<sup>8</sup>, if we wish to calculate EPS on common shares, the numerator should be the net income *less preferred dividends*. Meanwhile, as number of shares can change during the year, the denominator should be the weighted average value. However, for simplification purposes, the above formula can be well applicable to calculate EPS without much distortion.

The ratio shows the earning on each share held by the stockholders and is a good reference to the price which the investor has paid for that share.

Another ratio concerning the price of a share and its earnings is price - earning (P/E) ratio

$$\text{Price - earning ratio} = \frac{\text{Price per share}}{EPS}$$

The P/E ratio does not only reflect the market's assessment of a

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<sup>8</sup> Porter, Gary A. and Norton, Curtis L., 1996, *Financial Accounting – The impact on decision makers, alternative edition. The Dryden Press, Harcourt Brace College Publishers, p. 762*

company, but also its future prospect. The ratio can vary among industries and countries.

As P/E measures how much the investors should pay for each dollar of the current earnings, high multiple may imply the market's appreciation toward the company's performance and its growth prospects. However, as the denominator uses EPS (which is computed on reported financial figures and can be "maneuvered" by the company), one should be careful when interpreting this ratio and the investors must decide whether the company's shares are worth more than what was paid for them or not.

The above financial ratios (which are also summarized under Appendix A) are not exhaustive. An analyst can calculate any ratio he wants, provided that it is meaningful to measure a certain aspect in the firm's business operations or financial performance.

### **3.3. Drawbacks of financial ratio analysis**

The above paragraphs have described a range of financial ratios and suggested the purpose of each ratio, and what it could signify for the analyst. There is the problem, however, that when a range of financial ratios has calculated, the information has to be evaluated, to enable the analyst to make a recommendation or decision about giving credit to the company. The analyst

should judge whether additional credit can be given to the company with safety, or whether the company, without additional credit, might “fail”.

Business fail could mean (1) “technical” insolvency”, where a company is unable to meet its maturing obligations (e.g. the redemption of a loan), (2) “real” insolvency, where the liabilities of the company exceed its assets (and if this is more than a temporary situation, the company will inevitable go into liquidation) and (3) legal insolvency or bankruptcy (i.e. going into liquidation).

The strength of ratio analysis is that it gives the credit analyst a means of assessing the financial situation of a company by considering the information about the company into a few key ratios. Ratio analysis, however, has some drawbacks.

*First*, ratios only deal with quantitative data while many other qualitative data are also very important to evaluate a borrowing firm. In addition, such non - quantifiable information can also help interpret and explain the calculated ratios. As such, a combination of both types of information is required to have a good analysis.

*Second*, ratios are based on financial figures and may be distorted by the reporting company. Management can take short-term “window dressing” actions to have a well - presented statement, which can mislead

unsophisticated analyst to wrong assessments. As such, reliability of financial data must be ensured before the analysis.

*Third*, comparisons between companies, even in the same industry, may also be irrelevant and misleading due to differences in accounting practices (e.g. depreciation methods, accounting of inventory or recognition of income, etc.) adopted by them. Working out standards (or benchmarking) for such comparison is always difficult task for analysts.

*Fourth*, different analysts may name the ratios differently. Though each ratio is still meaningful, misinterpretation and inappropriate comparisons are possible. One may calculate debt - equity ratio by dividing total liabilities by total shareholders' equity while another uses interest - bearing liabilities in the numerator instead.

*Fifth*, ratios are based on historical accounting data. It may not reflect the *current market* situation which is affected by inflation, foreign exchange fluctuation and other factors. Thus, comparing a company's financial position for different periods or at different points of time may also be irrelevant.

*Sixth*, a ratio standing alone is insignificant. It can only be correctly evaluated and interpreted with various other considerations such as management policy or industry standards or norms.

*Seventh*, ratios are based on the historical figures. It is possible to be predicting the future trends from such historical data, but the results are uncertain -it may be correct or not. Expectations and forecasts are not always necessarily materialized. It cannot easily be used to predict what will happen in the future to the company under review. Some models have been developed for predicting corporate failure by means of ratio analysis, but these are not universally used, nor are they 100% reliable.

*Eighth*, because it draws on just a few key figures from a company's accounts, ratio analysis ignores all the other information that a set of accounts could provide - hidden away in the lengthy details of the notes to the accounts.

*Finally*, a further difficulty with ratio analysis is that the different ratios could provide conflicting indicators. A company could have good profits but high leverage, low interest cover but strong operational cash flows, or high profits but low liquidity. Many companies are neither in an extremely strong nor will an extremely weak position and the analyst often be looking at companies somewhere in the middle. Reaching a conclusion about whether to give credit if so how investigating the business and its financial position can provide.

In all, financial ratio analysis is an effective and user-friendly tool to provide analysts with a quickly overview on a company's performance and

position. However, there are limitations which analysts should always bear in mind. A good analyst would not solely rely on the figures and ratios, but use them wisely together with all other tools and information, either quantitative or qualitative, to have a good analysis and assessment.

#### **4. Cash flow analysis**

Cash flow analysis can be used to assess the creditworthiness of a customer both from historical accounting information about cash flows, and also by preparing forecasts of a customer's future cash flows.

Cash flow is important because a company must be able to generate cash to pay its debt obligation, such as interest and loan principle. There are four sources of cash generation: operational cash flows, operational flexibility, financial flexibility, and guarantee from a third party. A creditor such as a bank will look to one of these sources for repayment and the principle source will normally be operational cash flows. If a company can not pay what it owes from what it earns, it could have very serious financial problems. A widely-held view amongst bankers, therefore, is that there should be at least one other source for repayment, should the primary source dry up or fail.

Cash flows, unlike profit and loss accounts and balance sheets, are not easily colored by window dressing and creative accounting. Information

about cash flow is therefore more likely to be reliable than information about profits, asset values and shareholders' reserves.

Cash flow problems do not usually happen overnight. They build up over time, and an analysis of historical flow and trends over the past few years can be very instructive.

Cash flow analysis begins with the company's ability to generate profits and goes on to assess the ability of the company's management to manage cash and finances in addition to making profits. In particular, key questions are:

- ♦ How much cash is the company generating from its operations?
- ♦ Is this enough for the company's needs?
- ♦ Is it possible to make estimates or projections of the company's future cash flows, in order to improve the assessment of its creditworthiness?

Cash flow statements can be studied by looking at the absolute size of the cash flows. Most significant is the amount of cash flow from operations, after paying interest, tax and (if any) dividends. This amount of net cash flow should be the source of much of the company's capital expenditure funding, as well as the means to repay the loan principal.

*Ratio Analysis:* Ratio can also be used for analysis. Since cash flow

analysis will focus mainly on operational cash flows, it is useful to calculate the ratio of operational cash flow to other items of cash flow. This is to assess the strength of the company's operational cash flows relative to the size of its need for cash for other (non-operational) purposes.

*Operational Cash Flow & Priority Cash Flows (Interest and Taxation):*

The ratio of operational cash flow to priority cash outflows, sometimes referred to as the *debt service ratio*, measures the ability of the company to pay its priority comfortably in excess of priority payments.

$$\text{Debt service ratio} = \frac{\text{Operational cash flows}}{\text{Priority cash flows}}$$

The debt ratio has similarities with the interest cover ratio, since interest payments are one of the main priority cash flows. A ratio of less than 2.0 would be "uncomfortable", to say the least.

*Operational Cash Flows, Priority Cash Flows and Dividends:* It is often assumed that a company's directors will use operational cash flows to pay dividends to shareholders whenever the opportunity arises. A further ratio for analyzing the adequacy of operational cash flow is:

$$\frac{\text{Operational cash flows}}{\text{Priority outflows (interest + tax) + Dividends}}$$

This should be analyzed in the same way as the debt service ratio. If the company expects to pay a dividend, its operational cash flows should be

well in excess of the combined cost of the priority outflows and the dividend payment. A ratio above 2.0 is desirable.

*Capital Expenditure:* It is important for virtually all business because it involves cash outlays “now” to generate operational cash inflows in the future, and to keep the company in business for the longer term. Capital Expenditure has been referred to here as a discretionary cash outflow. To some extent, it is. Unless contracts have been signed and expenditure is committed, capital expenditure plans can be deferred or scrapped.

In all business, however, some capital expenditure is essential to keep the business going at its current level; fixed assets must be replaced eventually. A difficult task for the credit analysis is to judge what minimum level of capital expenditure seems necessary for the business, and how much of the “discretionary” outflows are really essential.

In some industries, the reduction or cessation of capital expenditure could take many years to work through to damaging the financial performance of a company. An automobile manufacturer is an example of a company where, ultimately, an inability to invest can be a threat to survival, given the need for investment in new car models.

At the very least, a minimum capital expenditure should be equal to

the annual provision for depreciation in the profit and loss account. With price inflation, the cost of replacing fixed assets will normally exceed the original cost of the “old” assets. It is therefore not very contentious to suggest that annual capital expenditure should, as a minimum requirement, be higher than the depreciation charge in the profit and loss account.

*Internal Financial Ratio:* It is certainly reasonable to suppose that in the long term (but not necessarily year-by-year) a company should be able to finance most of its capital expenditures from its own operational cash flows, with only a smaller proportion financed by new borrowing, even allowing for dividend payments to shareholders.

In other words, in the long term, operational cash flows minus priority cash flows and dividend payments should be about the same amount as capital expenditure outflows. All we are saying here is that a company should be able to finance most of its capital expenditures internally.

A suitable ratio for measuring a company’s performance on this issue is the internal financing ratio:

$$\frac{\text{Capital expenditure cash flows including payments for acquisitions}}{\text{Operational cash flow minus priority cash flow and dividends}}$$

This ratio can be greater than or less than 1:1 in any particular year, but in the longer term, ought to be fairly close to 1:1 on average. If it is greater

than 1:1, the company will be using new borrowing to finance some of its capital expenditure program. Just how much capital expenditure is being financed by borrowing is obviously of great interest to the credit analysis.

In briefly, cash flow is crucial to business survival or failure. Although cash can be obtained from several sources, such as raising new capital or selling off parts of the business, the key source of cash, in the longer-term at least, must be from trading operations. Cash flow analysis can be used to assess the adequacy of a company's cash flows, and to identify potential problems, such as overtrading or excessive capital expenditure commitments.

The strength of ratio analysis is that makes comparisons possible: (1) of ratios over time (trends), (2) with other, similar companies, (3) occasionally, against a standard, ideal, maximum or minimum "safe" ratio. Inadequate ratios could indicate high credit risk.

#### **5. Predicting Corporate Failure: Z Scores**

The concept of a Z score has been developed by Professor Edward Altman in the US, and (separately) by other researchers such as Professor Richard Taffler in the UK. A Z score is a figure (a "score") which can be calculated from a small number of key financial ratios. Most of the data to calculate the ratios can be obtained from the published accounts of

companies and used to assess its financial health.

Z score models are constructed by analyzing a large number of financial ratios for a sample of “healthy” companies and a sample of “failed” companies. Statistical analysis (multiple discriminate analyses) is then used: (1) to identify a small number of key ratios which can be relied on to distinguish healthy from failed companies, and (2) to calculate coefficients or values for each ratio to build up a Z score model.

A Z score formula is constructed as follows:

$$Z \text{ score} = C_1 R_1 + C_2 R_2 + C_3 R_3 + \dots + C_n R_n$$

Where:

- ♦  $R_1 R_2 R_3 \dots R_n$  are the key ratios identified, and there are  $n$  key ratios
- ♦  $C_1 C_2 C_3 \dots R_n$  are corresponding coefficients or values to apply to

each ratio

A high Z score indicates “health” and a low Z score indicates “potential failure”. Professor Altman (1968) analyzed 22 accounting and non-accounting “variables” for a selection of failed and non-failed firms in the US and from these, five key indicators emerged. These five indicators were then used to derive a Z score. Firms with a Z score above a certain level could be classified as financially sound, and firms with a Z score below a certain level

could be categorized as potential failures. Altman also identified a “grey area” or range of Z scores in between the non-fail and failure categories in which eventual failure or non-failure was uncertain.

The Altman Z score model emerged as:

$$Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.0099X_5$$

Where: ♦  $X_1$  = working capital/total assets ratio

♦  $X_2$  = retained earnings/ total assets ratio

♦  $X_3$  = earnings before interest and tax/ total assets ratio

♦  $X_4$  = market value of equity/book value of total debt ratio

♦  $X_5$  = sales/total assets

In Altman’s model, a Z score of above 2.99 indicated non-failure, and a Z score below 1.81 indicated potential failure.

Altman’s sample size was small and related to US firms. Subsequent research based on the similar principle of identifying a Z score predictor of business failure has produced different prediction models, using a variety of financial ratios and different Z score values as predictors of failure. It could be argued, for example, that Z score models appropriate for conditions in the US are different from those companies in other countries. Similarly, different Z score models could be appropriate for companies in different industries.

In sum, Z score models identify a small number of key financial ratios which, taken together, could be used as an indicator of the risk of business failure. Each Z-score model has its own key ratios. Different Z-score models are required for companies in different industries and countries. Z scores were devised to overcome two problems with ratio analysis. Analyzing 20 or 30 different ratios might not provide a clear picture of a company's financial position or creditworthiness. Some ratios might suggest financial strength whilst others suggest weakness. In ratio analysis, there is no single ratio with a single "minimum acceptable level" that can be used to identify companies in trouble. There are few, if any, unambiguous warning levels. Z score are less ambiguous, and provide an assessment of a company's financial position in a single figure. Credit analysts, particularly in banks, have used Z score analysis, and might still continue to do so. Opinion about the value of Z scores amongst practitioners is likely to vary over time and with experience. The concept of Z scores, however, remains an attractive one.

### **Chapter 3**

#### **Current Practice in Financial Analysis in Lending to Business of Vietnam's Banking System**

##### **1. Banking Structure and Macroeconomic Environment in**

## **Vietnam**

### **1.1. Structure of Vietnam's Banking System**

After the liberation of Vietnam in 1975, the whole banking system of the old regime, which included seven state-owned banks and about thirty private and foreign banks, was nationalized. The government established the State Bank of Vietnam to perform both central banking policies and commercial banking activities. In 1988, the four current state-owned banks - Bank for Foreign Trade (Vietcombank), Industrial and Commercial bank (Incombank), Bank for Investment and Development (BIDV) and Bank for Agriculture (VBA) - were split from the State Bank of Vietnam to perform commercial banking activities.

In 1986, the Sixth Congress of Vietnam's Communist Party marked a thorough change in government's attitude towards the private sector and foreign investment introducing a reform program referred to as "Doi Moi" to develop the private sector, restructure the financial sector and the budgetary system, to focus on export-led growth and attract foreign investment. In May 1989, the Council of Ministers passed two Ordinances; one on State Bank of Vietnam, and one on Banks, Credit Co-operative and Financial Companies of Vietnam, to regulate banking activities. The State Bank of Vietnam continues to perform the traditional role of the central bank and governs the whole

banking system in Vietnam. The State Bank of Vietnam (SBV) works closely and in tandem with the Ministry of Finance. The SBV has a network of branches at provincial level and one regional office located in Ho Chi Minh City looking after the south.

There are five categories of banks in Vietnam:

- ♦ Five state-owned commercial banks;
- ♦ One state-owned bank implementing micro policy-lending to the poor named Bank for the Poor;
- ♦ Forty-eight joint-stock commercial banks, most of them are located in Hanoi and Ho Chi Minh City;
- ♦ Four joint-venture banks with the state-owned banks Vietnamese partners, namely, Vinasiam Bank (a JV between Vietnam's Agricultural Bank and Thai Farmers Bank), Indovina Bank (Incombank and Indonesian BDNl) FirstVina Bank (Vietcombank and Korea First Bank) and VID Public bank (BIDV and Public Bank Malaysia);
- ♦ 12 foreign bank branches, and;
- ♦ 52 foreign bank representative offices;

The four state-owned banks still dominate the banking industry and account for 71.9% of total banking assets in Vietnam, but their balance sheets

as well as those of some joint-stock banks are reportedly heavily burdened with bad debts. Joint-stock banks hold 10.5% of the total banking assets, foreign and joint-venture banks hold around 16.0%, and the rest belongs to the credit co-operative network. Some of the joint-stock banks, mostly in Hanoi and Ho Chi Minh City, are licensed to perform international banking services and foreign exchange activities. Two local commercial joint-stock banks (Asia Commercial Bank and Vietnam's Bank for Private Enterprises - VP Bank), where foreign ownership of up to 30% is allowed, are considered as trials by the SBV

In 1998, six joint-stock commercial banks and several others were placed under "special control" by the SBV. A total of fourteen were considered to be in trouble and were to be restructured. Due to the regional crisis and unforeseen business developments, some foreign banks applied to close their operations in Vietnam.

## **1.2. Macroeconomic Environment**

In recent years, Vietnam's economic performance has been truly remarkable. GDP growth has been among the highest in the region, even during the recent crisis. Although GDP growth was down by a third in 1998 due to the regional crisis, the 5.8% growth rate in 1998 was significantly

higher than those of other countries in the region. The target for GDP growth rate recent years express appears ambitious and difficult to achieve under current internal and external situations.

Exports have also increased rapidly in recent years at an average annual rate of over 20% since 1990. Rice production and exports have reached a historical high in 1994 enabling Vietnam to maintain its position since 1989 as the world third largest rice exporter. In 1998, however, the increases in rice export volume and price were still not enough to compensate for the plunge in prices of key export products such as crude oil, latex and textiles. A shortage of hard currency and great pressure for a more substantial devaluation of the Dong discouraged imports.

In spite of the emphasis on industrialization and modernization of the economy by the government since 1986, Vietnam is still an agricultural economy. Agriculture's share of the GDP is more than 25% and employs around 70% of the country's workforce. Foreign investment projects currently represent 8% of the country's GDP and approximately 20% of export earnings, and have an annual production growth rate of 20%.

The first Laws on Foreign Investment of Vietnam became effective in January 1988 and were considered one of the most liberal in Southeast Asia

at that time. The laws were amended in 1990, 1992 and 1996. The years from 1989 to 1997 saw a boom in foreign investment in Vietnam. Foreign investment contributed around 8% of Vietnam's GDP. The regional crisis, which began in 1997, has adversely affected foreign investment into Vietnam - 74% of Vietnam's investment inflow comes from APEC nations, which are also suffering from the crisis. Foreign investment capital realized in 1998 was 70% of that in 1997.

## **2. Overview of Vietcombank**

### **2.1. Establishment and Development**

Established in 1963, for many years Vietcombank was an arm of the central bank with a monopoly on foreign exchange services and a mandate to focus on importers and exporters. In 1990, the SBV relinquished day - to - day<sup>9</sup> control of Vietcombank, which was at the same time allowed to diversify beyond its importer/exporter focus, although little such diversification occurred. Despite its considerable asset base, Vietcombank operates on small network of just 28 branches, 01 finance subsidiary, 03 representative offices overseas, 30 ATMs, and 2,800 staffs with its funding base of exporters and wealthier individuals largely located in the country's main urban areas. Vietcombank's

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<sup>9</sup> Source: "Analysis Report", April 2002, Peter Tebbutt, Singapore and David Mashall, Hong Kong

limited operations have enabled it to engage in more operational reform than three state-owned banks<sup>9</sup>. New management installed in 1999 has also been a conducive factor. However, much remain to be done. Hence, a comprehensive five years reform plan for bank is being developed. Ultimately, it will be implemented via a twinning arrangement with a major foreign bank. During this time, Vietcombank will need to expand its network/ATM presence in order to more fully exploit the country's detail market, which should ultimately evolve as the most profitable area of focus in Vietnam.

Compared to other local state-owned banks, Vietcombank achieved encouraging progress after 10 years reform (transition from planed economy to market - oriented economy, financial re-structuring program and financial deepening):

- ♦ Still holds the leading position in foreign trade of Vietnam with traditional services of trade finance and foreign exchange. From 1996, average import and export turnover is 30% of total turnover of the economy.

- ♦ With the small network, Vietcombank is considered as the most efficient in management in comparison to other local state-owned banks.

Apply the advanced technology in banking management: Vietcombank has successfully implemented the Retail banking system in the entire

Vietcombank system in the year 2000 knows as “VCB vision 2010”. It may not considered as innovative products comparing with international modern banks, but it surely the big jump in Vietnam commercial banking operations as the this is first time one Vietnamese bank can offer a large rang of retail banking services with international standards and improving bank management quality. Being the pioneer in the banking modernization process in Vietnam, Vietcombank is taking the lead in improving national commercial banking operations by properly investing in banking technology.

## **2.2. Organizational Structure**

The Bank’s organization structures is depicted in Appendix B. The Board of Directors (BOD) is the highest management body of the Bank, in charge of strategizing the bank’s operations direction and policies, appointing key positions, etc. The Board of Management (BOM) is the highest operational authority of the Bank, who are responsible for handing all operational within their jurisdiction vested by the BOD.

## **2.3. Banking Service**

Vietcombank is presently offering a wide range of products to its customers, which are under three broad categories: deposits, loans and advances and other services.

*Deposit products:* the products include current accounts and fixed deposit (FD). As licensed, Vietcombank is not allowed to mobilize deposit under saving accounts like other banks.

*Loan and advance products:* Loans and advances are classified as direct advances (i.e. with outflow of cash when utilized) and indirect advances (i.e. utilized without any cash outflow). Direct advances include (1) overdraft (OD), (2) trade financing: short term loans under 2 main types, namely Trust Receipt (TR - for import financing) and Foreign Bills of Exchange Purchased (FBEP - for negotiation of export bills), (3) term loans: with 2 main types, namely Fixed loans (FL - either for short or medium terms, mainly to finance investment projects) and Revolving credit (RC - short term in nature, mainly to finance working capital needs). Indirect advance facilities include bank guarantees (BG), letter of credit (L/C) and shipping guarantee (SG).

*Other services:* other services presently provided by Vietcombank include payment and remittance (inward/ outward) services, foreign exchange transactions, cashing of travelers' checks (TC), ATMs, card services, etc. It is noted that the Bank's current products range is wide and advanced compared to many other local banks.

### 3. Credit operation at vietcombank

#### 3.1. General Structure and Procedures

Credit activities at VCB are carried out at branches and head office.

The workflow for loan processing and approval is depicted in Appendix C

A loan is typically gone through the following main steps:

- ◆ Submission: the documentation is to be prepared following internal formats and requirements before submission to the authority for approval.

- ◆ Approval: depending on various factors (e.g. loan quantum, collateral conditions, interest rates), credit propositions are approved at different level in accordance with the Discretionary Power (D/P) schedule approved by the Board of Directors.

- ◆ Reviews: Normally all credit facilities are subject to periodic reviews. Review can be waved for customers meeting certain criteria.

- ◆ Noting: credit approvals and reviews need to be noted by higher management level (except when they are approved by BOD). Additions to or revisions of approved terms and conditions are possible at this noting stage.

Besides the standard procedures, the Bank also has its internal guidelines on several important terms such as interest rate and collateral requirements.

The clear segregation of approving authorities at different level,

coupled with its noting and reporting system, helps Vietcombank to maintain close control and supervision of credit activities. As a result, the Bank has been able to maintain good credit quality as evidenced and proven by its low overdue loan profile over last years.

### **3.2. Credit Evaluation Process**

During the evaluation and assessment of a credit proposal or review at Vietcombank, the following factors are taken into consideration:

- ♦ Customer's profile: establishment, capital contribution, principal business line.

- ♦ Operations: products, production activities (e.g. factory location and capacity, M&E, technology), suppliers.

- ♦ Market position: demand and supply, distribution channels, competition position, market share.

- ♦ Management: experience, staff strength and skillfulness, training activities.

- ♦ Financial performance: sales, turnover, profitability, liquidity and capital leverage.

- ♦ Payment capacity: cash flow forecast.

- ♦ Business projection/viability: SWOT analysis.

- ♦ Take records with banks: conduct of account, loan utilization and repayment.

- ♦ Collateral: types and description, valuation, calculation of the advance margin.

To assist credit analysts in the credit processing and evaluation, Vietcombank use Credit Risk Rating (CRR) score sheet. This CRR sheet is designed an effective asset management tool by identifying deserving customers for credit enhancement or to point out weak account for close monitoring and remedial actions (if necessary). The score system shows that non-financial factors such as management's experience in the business, track record with the bank, sector prospect and collateral condition are considered more important than financial ones (as evidenced by their high weights). Six financial ratios (namely sales growth, profit growth, current ratio, gearing ratio, average collection period and interest coverage) are selected in the scoring system with relatively low weights.

Each criterion is scored on a given scale. The average score of all factors shall form the customer's overall CRR grading. A sample of CRR form is under Appendix D)

It is noted that in spite of its relatively low weight in the CRR scoring

sheet, financial analysis is actually playing an important, if not decisive, in credit evaluation papers at Vietcombank and attention of credit analysts.

#### **4. Financial analysis**

##### **4.1. Current Practice and Application**

In evaluating the financial performance and position of a borrowing company, it is Vietcombank's current practice to adopt a combination of horizontal, vertical and ratio analyses. Meanwhile, no trend analysis or inter-company comparison is applied.

Horizontal and vertical analyses are usually used together to explain movements in both income statement and balance sheet, commonly are:

*In Income Statement:*

- ♦ Turnover: to identify the reasons for change in turnover, i.e. whether it is due to sale volume or price fluctuations.
- ♦ Costs of sales: to indicate the causes of increase/ decrease such as costs of raw materials, production output, etc.
- ♦ Overheads: to assess the management's efficiency in cost control.
- ♦ Selling expenses: to investigate the customer's marketing strategies, i.e. to penetrate new market segment, prepare for new product launching, etc.
- ♦ Other significant changes in financial and extraordinary incomes/

expenses;

- ♦ Gross profit margin is analyzed from the first 2 factors listed above

while net profit margin is assessed based on all the previous 6 groups.

*In Balance Sheet:*

- ♦ Current assets: to focus on the composition of current assets and its changes, (of both individual component and the total sum) over the years (if any). Emphasis is normally placed on trade debtor and inventory accounts.

- ♦ Equity (or net worth): to comment on the movements of shareholders' funds and retained earnings.

Movements in fixed assets and other long term assets are seldom mentioned in financial analysis part of the write-up, unless they are significant.

Meanwhile, among various ratios which are introduced in the theoretical, only several are often adopted in the practical evaluation process, including current ratio, net working capital (NWC), leverage/ gearing ratios, average collection period and interest coverage (which is mentioned earlier as times interest earned). The ratios are calculated as follows:

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} \quad (1)$$

$$\text{Net working capital (NWC)} = \text{Current assets} - \text{Currents liabilities} \quad (2)$$

$$\text{Leverage ratio} = \frac{\text{Total liabilities}}{\text{Total net worth}} \quad (3)$$

$$\text{Gearing ratio} = \frac{\text{Total interest bearing liabilities}}{\text{Total net worth (or total shareholders' equity)}} \quad (4)$$

$$\text{Collection period} = \frac{\text{Closing account receivables}}{\text{Total turnover}} \times \text{Number of days} \quad (5)$$

$$\text{Interest coverage} = \frac{\text{Earning before interest and tax}}{\text{Interest expenses}} \quad (6)$$

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net turnover}} \quad (7)$$

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Total turnover}} \quad (8)$$

The core financial data (e.g. turnover, pretax profit, current assets/liabilities, paid-in capital, net worth) and ratios (e.g. current ratio, leverage ratio, average collection period and interest coverage) are summarized in a brief financial profile facilitate the analysis.

The financial analysis paper of an actual loan customer is under Appendix E for reference. However, the real customer name is not revealed in view of information confidentiality requirement.

#### **4.2. Drawbacks in the Current Practice.**

It is note that Vietcombank has implemented a good financial analysis in its credit evaluation process, which is also in line with its prudent lending culture. This is clearly reflected in its low overdue loan record in the past years. Among the tools adopted in the evaluation process, financial analysis has proven to be among the most widely used, which highlights its importance.

However, having involved directly in the bank's credit evaluation

process in the general and financial analysis in lending to businesses in particular, the author has identified several weaknesses in the current practice

### ***Ratio Calculation***

While most of the ratios are calculated similarly to the “generally accepted formulas” as mentioned earlier in Chapter 2 (e.g. profit margins, interest coverage) or in a meaningful way (e.g. leverage and gearing ratios), there is a remarkable discrepancy in computing the collection period.

As seen in formula (5), the numerator is closing figure of receivable account (instead of the average between opening and closing balances). Moreover, total turnover (instead of sales on credit only) is taken as the denominator. Even though this can simplify the calculation, the resultant ratio may be distorted.

A reportedly low collection period (as most of the company’s sales may be on cash basis) may hide its actual difficulties in collecting credit sales from some problematic customers. Or its management can instruct salesmen to collect debts before the closing date of the fiscal year to show up a short duration of receivable account (which has not been maintained all the year).

Meanwhile, inexperienced credit staff normally tends to calculate the collection periods in different financial years and compare them with each

other rather than with the company's credit policy.

### ***Scope of Application***

It can be easily seen that the number of ratio used in the financial analysis is quite limited. Though computing all ratios is not necessary, the more ratios, the easier and deeper the analysis and better understanding on the borrower's performance.

More specifically, while the liquidity and profitability can be, to some extend, adequately measured by current and profit margin ratios, the number of measures of leverage and asset management efficiency seem to be not enough to have a good overview on the borrower's performance.

Meanwhile, calculation and analysis of market value ratios is impossible for the time being due to the still under-developed stock market and the bank's current customer base (does not contain any listed company).

In addition, out of the six ratios selected for credit rating, no ratio uses a cash flow indicator. It is further noted that the total debt service coverage (which is an important indicator on the borrower's ability to meet its overall payment obligations in the past) is not applied.

### ***Benchmarking System or Standards for Comparisons***

There lacks a good benchmarking system in Vietcombank's financial

analysis in general and ratio analysis in particular. As mentioned earlier in the theoretical review in Chapter 2, ratios require a set of standards for analysis and comparison, which is still not available in the bank's current system.

In addition, the bank's existing scoring system in general and financial profile in particular is based on a single fixed cut-off hurdle scale and the differences in the nature of business, company's policy, market condition, etc. are not taken into account. (In fact, the borrower's line of business is also taken into account, but as an indicator of its prospect and check against lending direction rather than a factor to benchmark the ratios).

For example, a customer will be accorded score 4 (i.e. the highest one) for having average collection period of 90 days or below. It is normally easy for a trading firm to meet this requirement with a reported figure of 75 days. Nevertheless, if their normal credit term is only 30 days, a good credit staff should be alert with this "reportedly good" debt collector and the rating is rendered incorrect in this case. In contrast, a construction company should be appreciated in its debt collection efforts and deserve a higher score if it can maintain a healthy collection period of 90 days (while the market average can be as long as 120 days, especially in infrastructure projects with the government's funding).

The number of hurdles is also few (only 5 for each criterion). As such, it is difficult to see the difference and compare between companies, even in the same industry. For example, two customers will be both accorded score 4 for reporting collection period at 15 and 75 days respectively, despite the remarkable difference in the efficiency of their asset management activities.

Moreover, some criteria are not reasonably hurdle. For example, the highest hurdle rate for current ratio is 1.5 (which seems to be quite low) while the lowest level for collection period is 90 days (which is rather long). Similarly, the interest coverage ratio is considered good and given the highest score if it higher than 1.5 (which is lower than the proposed safety level of 2 and preferred range between 4 and 8). Once again, this is due to the ignorance of the factor on industry norms.

The last comment to be made on the scoring system is the fixed weight system. Except for interest coverage (weight 5), other ratios are given the same weight 4, which does not indicate the different level of influence of each factor on the borrower's repayment capacity.

### ***No Application of Trend Analysis***

This is a useful tool to help the credit staff to predict the future trend in the customer's business (which is important for lending activities as loan

payments should be considered on the borrower's future prospect and performance as well as project cash flow rather on their historical records).

Based on the past date, the analyst can judge whether the borrower has over-projected their figures or prepared them with conservatism and prudence. Though not all forecasts are realized, understanding the trend in the borrower's business and financial performances would provide the credit staff a better insight on the customer's business and help him be more confident in the evaluation and decision making. However, this tool is rarely, if never ever, adopted in the bank's financial analysis so far.

#### ***No Application of Industry Norms and Inter-Company Comparison***

As per the author's observation and experience, all figures and ratios are either horizontally or vertically compared rather than on trend basis (even though the necessary for such analysis is sometimes available and reliable).

Meanwhile, due to the limited information base on the other companies, it is impossible for the bank to make inter-company comparisons. In fact, it is rarely applied at Vietcombank when there are several customers operating in the same or similar lines of business and branches can exchange information, mainly non-financial, on their customers with each other. However, such information has so far been treated as "reference" rather than an

industry norm or standard for ratio analysis.

### **4.3. Causes of the Weaknesses.**

#### ***Lack of Reliable Financial Data from the Borrowers***

It is difficult to have sufficient and reliable financial information on borrowers in Vietnam at present.

Currently, independent audit requirements are only applicable to borrowers with foreign invested capital and publicly owned companies (i.e. those listed on the stock exchange) while this is only optional to local companies including State owned enterprises (SOEs) and local private companies (LPCs). So far, very few SOEs and LPCs have their financial statements audited.

For these sectors, financial reports are only required to be checked and approved by tax authorities. However, most of these “tax approved” statements are considered to be of low quality and reliability as they do not reflect the actual business performance of the reporting companies, especially those in private sectors. This situation is attributed to the following:

- ♦ It is suggested that lack of supporting documents to the evidence actual business transactions. A considerable portion of a company’s transactions is not properly supported by documents. Such transactions are

only shown in the management reports for internal use only and not reflected (or reflected but not accepted) in the “official” statements which are submitted to tax authorities for approval. As such, some lending banks prefer to obtain the management accounts rather than the tax approved ones for their credit assessment.

- ♦ Tax consideration, in order to reduce as much as possible the income tax payable (which is calculated at 28% on pretax profit), companies try to minimize their taxable income by increase expenses with various “supporting documents” (which may not support any transaction in reality). By inflating expenses, many well performing companies are reporting modest profit or even losses in their statements which are submitted to tax authorities.

- ♦ Limited use, as the purpose of the tax authority is to focus on calculating - as accurately as possible - the company’s taxable income (i.e. the income statement items), the other statements (i.e. balance sheet) can be overlooked and the ratios calculated on such figures are not correct, too. Meanwhile, cash flow statement is rarely seen in the tax approved financial statements, especially for local private companies.

Management accounts, though containing more information (including some “discreet” figures), are also problematic, which can be shown in the

following aspects:

- ♦ It is possible to catch a balance sheet that is “imbalance” or the sum-up dose not match and tally due to adjustments of figures

- ♦ Normally no cash flow statement is prepared (which is similar to tax approved statements). Apart from income statement which is updated quite frequently for internal management purpose, the balance sheet is usually prepared on quarterly or even yearly basis. Business transactions are recorded in “unofficial” accounting books.

- ♦ Changes in accounting practice (e.g. depreciation method, inventory valuation method, etc,) are normally ignored in such internal statements, which pose difficulties for external users (like credit analysis) to evaluate.

- ♦ Some of the report formats required under the prevailing accounting regulations (such as notes on the financial statements) are not prepared properly or simplified to provide the necessary information to users. For example, financial expenses are usually included in the overall operating expenses and it is impossible to calculate interest coverage ratio without a detailed breakdown of this account.

All the above have made the quality and reliability of such accounts questionable. Besides, the qualification of accountants, this is mainly due to

the management's intentional actions or direction to "window-dress" the figures.

Meanwhile, differences are also found in audited financial statements, especially in respect of the format presentation and level of disclosure of information. These can be resulted from the following:

- ♦ Difference between Vietnam Accounting Standards (VASs) and the International Accounting Standards (IASs), it is thus difficult to compare and audited report of accompany to another (even they are the same industry) if they follow different accounting systems.

- ♦ Different standard report formats adopted by each auditor. Besides the current "big four" (namely PWC, KPMG, Earnings & Young and Broune Griffith) who are all operating in Vietnam, there are currently more than 30 local audit firms (both State-owned and private) in Vietnam. As the firms can follows different auditing standards, variations in the format presentation among them are explainable. If a company changes its auditor, credit analysis may find it difficult to compare between the two audited reports of a company as some items can be reclassified in accordance with new auditor's standards. A copy of the audited income statements of the same company in two financial years under Appendix G can illustrate the difference.

♦ Audited firm's requirements on confidentiality of certain information (especially pertaining to borrowings and bank loans e.g. lending banks, interest rates, etc.), such information is either unrevealed or consolidated under a broad category without breakdown in details. Some other companies, in contrast, allow their auditors to disclose all the necessary information in the audited accounts.

The above has caused difficulties to credit analysts in their consolidation, analyst and comparison of financial figures in general and ratios in particular.

### ***Limitation in Internal Application***

As mentioned above, the number of ratios actually calculate and analyzed in Vietcombank's credit evaluation process are limited at six only (leaving many others provided in the training kits unused). Although these ratios also cover all the aspects studied earlier (i.e. profitability, liquidity, financial structure and activities, with reasonable exception on market value ratios as they are currently not applicable to the bank), it is too few for analysts to have a good and covering view on the borrower's rating sheet that is currently adopted by Korean Exchange Bank - Vietnam branch with 14 ratios in four categories.

### ***Lack of Industry and Standards***

In the previous part, lacks a good benchmarking system and application industry norms in the analysis of financial ratios at Vietcombank was mentioned. This is also partly due to the fact that such information is not available at present.

First, there are no professional credit rating agencies or similar bodies in Vietnam to provide such information for banks' and other financial data users' reference. The Credit Information Center (CIC) under the State Bank of Vietnam (SBV) was established to collect, consolidate and provide information to commercial banks and other interest bodies on existing borrowers in the economy. However, it is not operating efficiency due to various reasons, among which are:

- ♦ Complicated reporting system: under the current system, banks are required to prepare eight reports to CIC on different timing basis (e.g. quarterly, monthly, weekly or actual transactions arising). However, the information requirement is quite simple and inadequate (e.g. form K02 on borrower's financial position which can be referred to under the Appendix H).
- ♦ The fact that untimely update of information due to banks' relaxation in implementing the reporting system. Sometimes the information provided by

CIC is even more out-dated than that obtained through other channels.

Second, Vietnam's stock market still new and in the initial development stage. There are currently about 20 listed companies and 8 securities trading companies in the HoChiMinh City Security Trading Centre (HSTC) (see the list of the companies under Appendix I). With such a limited number of players, low volume of transactions, inadequate and ineffective State's control due to various reasons, the market has shown many shortcomings (which has been the subject of many studies), including those in respect of providing financial information and reliability.

As at the same time, all above 20 companies have released their financial reports up to end of 2003. However, only a few statements are audited while revised or adjusted, due to various reasons and to different extend the figures that were reported and announced in the market earlier. Even some audited reports are also not reliable as evidenced by the recent tax dodge case by one of the listed companies (whose financial statements were also audited; and the auditing firm was also fined for their lack of due diligence in their work). The above have shown that the quality of information available in Vietnam securities market is still questionable.

The inefficiency of the stock market leads to the fact that trading

process of company' shares can be distorted, either under- or over-price. Therefore, computing market value ratios based on market prices is also inaccurate. In addition, the pricing also dose not reflect correctly the market's assessment on the companies' future prospect and potential growth (which is an important indicator for lenders to evaluate borrowers).

### ***Lack of Proper Training in Financial Analysis and Evaluation***

It must be admitted that training activities are weak in Vietcombank, especially in the last few years. Credit analysts, as well as other staff, mainly acquire and improve their job knowledge through on-the-job training and real-world experience. Some new staff needs time to understand the meaning of ratio calculation formulas or to adapt to the bank's practice as it differs form what they learn. Only some attend specialized training courses on credit evaluation and financial analysis. Lack of proper training has to a large extent affected the qualifications of staff and their efficiency.

In respect of financial analysis, credit analysis, credit staff, even experienced ones, usually faces difficulties in analyzing a business in a new industry due to lack of information and understanding on it. As such, when time is limited, they simply calculate the changes in financial data without being able to explain in details the rationales for such changes, which affects

the quality of the analysis.

***Other reasons***

The inefficient use ratio analysis in credit evaluation at Vietcombank is also partly attributed to several other reasons. It is noted that the “habitual” practice and precedent cases are to follow the previously accepted cases of base their evaluation on the personal experience.

In the inefficient use of ratio analysis in credit evaluation at Vietcombank is also partly attributed to several other reasons. It is noted that the “habitual” practice and precedent cases are strongly influential in the bank’s financial evaluation process. Credit analysts tend to follow the previously accepted cases or base their evaluation on personal experience.

In the absence of industry norms or inter-company reference, it is not a practice for Vietcombank credit analyst to exchange information and experience with other banks, which is partly due to the fear of leaking information on potential loan customers to a competitor. Using external consultant service is also not available, mainly due to cost considerations.

In addition, it is noted that the sources for information at Vietcombank are quite limited. Besides news-cuttings, statistic manuals, several general newspapers and magazines, industry reviews or professional handbooks are

not available. (Even in case of their availability, the contents are mainly non-financial and can only be used as reference in financial analysis rather than a standard for comparison). Meanwhile, Internet is not intensively exploited to search for updated market information. The above limitations have, to certain extent, restricted the bank's access to updated information to facilitate its credit evaluation process in general and financial analysis to facilitate its credit evaluation process in general and financial analysis in particular.

To conclude, in view of the bank's prudent lending policy with emphasis on the borrower's financial aspects as well as its current practice in credit evaluation. However, the above analysis has shown various weaknesses in the adoption and application of this tool, which necessitates the measures for further improvement.

#### **Chapter 4**

##### **Recommendations for Improvement of Efficiency of Financial Analysis at Vietcombank**

Beside credit risk and profit making, liquidity risk is another bankers' prime concern. As such, it is also necessary to take the source of funding into

account when considering a lending. To finance long term loans with short (even medium) term sources of fund may pose the bank to high liquidity risk.

In fact show that for the case of Vietcombank (as well as most other banks in Vietnam), short term deposits account for the majority in its mobilized funds. Therefore, it is more relevant for the bank to focus its lending activities on short term financing (under TR, RC or OD facilities). Rather than participating in financing long term projects. In fact, the current term structure of the bank's lending activities also reflects the above direction. As at 31/12/2003, short-term loan accounted for over 85% while medium term loan (from 1 year up to 5 years) only made up 15% of the bank's total loan portfolio.

Meanwhile, with its current scale of operations and limited staff strength, lending small individual loans (e.g. housing loan or car hire purchase financing) dose not appear practical for the time being. Actual figures also showed that individual loans only accounted for 5% of total loan outstanding as at 31/12/2003. As such, lending to businesses is still at the bank's focus on its credit direction.

As conducted in Chapter 3, it is necessary to find out measures to overcome the current weaknesses in financial analysis at Vietcombank. If being used wisely and efficiently together with other qualitative information,

this tool will be helpful to credit analysts to analyze their borrowers' financial position to come out with the right lending decision.

In addition, during the discussion with several credit officers working in other banks, it is revealed that this is also their problem. Except for foreign banks who adopt quite advanced and effective tools such as Korean Exchange Bank's credit scoring sheet and rating systems, some others, especially local bank, do not have such tool to assist in their credit evaluation. This fact implies that solutions to solve the shortcomings in financial analysis at Vietcombank will also be useful to other banks as well.

The analysis in the Chapter 3 has identified causes of the inefficient application of financial ratio analysis in Vietcombank's credit evaluation process, which can be groups as problems in data collection, ensuring data reliability and data analysis. As such, the following recommendations are made in order to address these problems. Besides the solutions which are applicable at the particular studied business, i.e. Vietcombank, some others at "macro" level are also suggested.

## **1. Specific Recommendations to Vietcombank**

### **1.1. To Widen the Scope of Application of Ratio Analysis**

As analyzed in Chapter 3, while horizontal and vertical analyzes are

implemented quite comprehensively, one of the shortcomings in financial ratio analysis at Vietcombank is its limited scope of application with too few ratios. In this respect, the author would recommend the following ratios be calculated and analyzed:

- ♦ For liquidity measures: current ratio (currently) and acid test (additional)

- ♦ For leverage measures: leverage and gearing ratios, interest coverage (currently)

- ♦ For asset management efficiency measures collection period (currently), payment period, inventory turnover and total asset turnover (additional)

For profitability: profit margins (currently), ROA and ROE (additional)

With additional six ratios (which are not too many and can be computed without difficulties from figures available on borrower's financial statements), it will be easier for credit analysts to grasp a better insight on the borrower's performance without much additional complexity.

As the bank is not lending to any listed companies, market value ratios (such as EPS or P/E) are not applicable for the time being. However, the bank should prepare for such applicable by taking them into consideration, for

example, with low weights in the initial state.

Meanwhile, it is advisable that the calculation formulas of some ratios (as mentioned in Chapter 3) be revised in accordance with the generally accepted formulas to reflect the borrower's financial health more accurately (or at least, with less distortions). In addition, this will also improve the comparability between "internally calculated" ratios with industry or sector norms once this information is available. If this recommendation is not applicable for the time being, analysts should be conscious of these weaknesses to have analysis of the ratios.

## **1.2. To Adopt Trend Analysis**

Also mentioned under Chapter 3, trended analysis is presently not applied in Vietcombank's financial analysis practice (although financial information for its application is available). By pointing out the movement trends in the customer's business and financial performance, this analysis technique would be a good supplement to the current analysis tools (i.e. horizontal, vertical and ratio analyses) as it helps analysts to identify the unusual changes in the financial statements and the calculated ratios.

In addition, with the availability of advanced techniques, trend analysis is made easier, based on which future performance (such as sales and

expenses) can be projected or assessed. A five years record showing average annual sale growth of 10% will suggest a credit analyst to question the borrower for a 30% increase projected in the 6<sup>th</sup> year.

### **1.3. To Set up an Internal Set of Standards for Ratio Benchmarking**

While industry norms are presently not available, it is necessary for Vietcombank to set up its own standards based on different industries or customers' business lines to assist credit staff in their evaluation. Such system can be set up by:

- ♦ Reviewing the bank's lending portfolio, with potential and targeted customers (in accordance with the lending direction) being taken into consideration, on their business lines and classifying them into a number of industries. The following types of business are proposed: (1) agriculture (including forestry and fishery); (2) industrial manufacturing (e.g. mechanical, M&E manufacturing); (3) production of consumption commodities (e.g. foods processing); (4) construction (including material production, real estate development); (5) trading and import-export; (6) banking and financial services (due to its special nature of business); (7) services (e.g. hotel and restaurant, office for lease, transportation), (8) others (e.g. mining, jewelry processing)

- ♦ In fact show that to obtain the relevant financial relevant of a number of companies in each type of business as “input data” to work out the “norms” which shall then be used as the benchmarks in each sector. Use of statistic figures and trend analysis is necessary in this step.

- ♦ To compare such benchmarks with the available international standards such as industry norms published by rating agencies. It is noted that this step only serves as a check as the business environment in Vietnam differs from other country.

- ♦ To periodically review the system and update it based on market development, if necessary.

#### **1.4. To Revise the Scoring and Credit Rating system**

Currently, financial ratios are weighted and scored in the CRR form as an element to work out the customer rating. In order to improve the efficiency of the form, the following is recommended:

- ♦ To adjust the weight of several criteria in the scoring sheet such as years of good conduct (to reduce from 25 to 20), collateral (to reduce from 25 to 20) and financial profit

- ♦ To take more ratios into consideration and the scoring system (possibly 8 or 9 instead of 6 as currently adopted);

♦ Besides, adopting a more flexible benchmarking system as proposed above, to increase the number of hurdle rates in considering each criteria from 5 to 7 for a clearer differentiation between differently performing companies. E.g., the hurdles applicable to trading business can be as follows:

<i>Score</i>	<i>Current ratio</i>	<i>Average collection period</i>
6	4.0 to 8.0	Less than 30 days
5	3.0 to less than 4.0	30 days to less than 60 days
4	2.0 to less than 3.0	60 days to less than 90 days
3	1.5 to less than 2.0	90 days to less than 120 days
2	1.0 to less than 1.51 & above 8.0	20 days to less than 120 days
1	0.5 to less than 1.0	150 days to less 180 days
0	Lower than 0.5	Above 180 days

♦ To take into consideration other qualitative information such as customer and supplier base, market position and accounting system. In this respect, the format of Korea Exchange Bank can be used as a reference to work out an appropriate scoring sheet. However, the author opines that even though it is informative and comprehensive, this model is quite complicated and not user-friendly enough, especially to junior or inexperienced credit analysis.

It is noted that setting up good standards is always a difficult task to do. It costs a lot of time and efforts. However, it is necessary to ensure a good financial analysis process. In this respect, experience and reference to other banks and institution's model (especially foreign ones) and use of other techniques (e.g. computer programs, statistic analysis) can be helpful.

### **1.5. To Improve the Bank's Information Collection System**

This can be done by subscribing industry publications, attending workshops/ seminars/ exhibitions, intensifying the use of Internet as a good source of information, making contacts with various professional associations and etc. Though these activities are not directly related to ratio analysis, they help analysts to have more information that can be of use and importance in their consideration and evaluation of borrowers' financial statements.

Another source of information is from the other banks. Exchanging information between banks is necessary to update each other with changes in the market, industries or economic sectors, which is also useful in financial evaluation.

It is also recommended that external consultant services in market research be used to collect market information. These services will incur costs but also save the bank's own expenses and time in conducting such surveys

or researches. In addition, the consultant companies are professional in doing such works and thus can ensure a better information quality.

### **1.6. To Improve the Credit Staff's Skills and Job Knowledge**

Proper in-house training only helps credit staffs adapt to the bank's internal procedures and practice. In order to equip them with good analytical skills and business understanding, the bank can:

- ♦ Send staff to attend training courses on banking skills, financial evaluation and analysis, information sessions. Periodical update on new practice or knowledge is also necessary.

- ♦ Make the best use of various technical tools in the analysis such as computer software, models, etc.

- ♦ Constantly update information on market information through various available sources, especially the industries where the borrowers are operating in. A proper system of documentation and filing is advisable to facilitate an easy reference in case of needs.

- ♦ Participate in business associations to have frequent information on business performance. For the time being, application for membership of Vietnam Chamber of Commerce and Industry (VCCI) is recommended.

## **1.7. Using Z Scores model**

A problem in credit analysis is how to use all the information about a company that can be collected. Judgment will normally be required, and experience should help to improve the quality of the analyst's judgment. Credit decisions can depend heavily on the experience, judgment and opinion of the analyst, rather than on objective facts. Difficulties with interpreting a range of financial ratios have prompted the question: "Is there a single ratio or vale that can be calculated which indicates the financial situation of a company, which an analyst can rely on to make a judgment?"

With advantages and huge value of Z scores model mentioned in Chapter 2, it is suggested that Vietcombank should apply this model as well as financial ratios analysis and improve other things above. As a result, with available information can be analyzed and condensed into a prediction of a company's future creditworthiness so that Vietcombank can evaluate borrower more reliable support to make decision whether lending or not to business, etc.

## **2. Macro Solutions**

Apart from the above "internal" solutions, a better macro system to ensure data sufficiency and reliability is also required. Among various factors, the author would like to focus on the following aspects:

## **2.1. To Strengthen the Operations of CIC**

This solution aims to solve the difficulties in obtaining sufficient and reliable financial data.

As designated, the Credit Information Center (CIC) should act as the collector of relevant information (that financial data are of great importance)

Of all borrowers in the economy, this is not only for its internal use but more importantly, for all the lenders' reference when they need. However, at present, it is mainly fluctuation as an information "receiver" for SBV's internal uses rather than a provider of "good" information. Through discussions with several credit staff in some commercial banks in Hanoi, it was revealed that they have never requested for information from CIC, reportedly because they are presently not satisfied with such information (which is either insufficient or out-dated or both) and rather for the necessary information through their own channels.

Therefore, it is necessary to improve the efficiency of CIC's operations, particularly through its reporting channels. Besides the shortcomings of the current reporting system (such as inadequacy, complexity, inappropriate reporting frequency), it is noted that the major problem also lies in banks' implementation. As such, the following concrete measures are recommended:

- ♦ To review, modify and enhance the current reporting system to

facilitate banks' implementation. Computerized reporting software should be developed and provided to all banks for their use. This will also facilitate CIC's consolidation/ processing steps and ensure data consistency and timeliness.

- ♦ To impose fine or penalty on banks that does not fully implement the reporting requirements. In fact, such mechanism is already in place and needs to be enforced effectively to prevent non-compliance.

- ♦ To emphasize on the importance of sharing and exchanging information on borrowers among banks or lenders for the sake of all players in the market and the safety of the whole banking system (rather than for individual benefit). In fact, some banks are presently reluctant to provide information on their borrowers to CIC with the fear that other banks can identify potential customers through CIC's information and lure them over.

- ♦ To ensure that banks can in turn receive "good" information, either "raw" or "processed", from CIC when they need and request. The discussions also revealed that some banks do not want to provide information to CIC because they do not think that they will need to get information and benefit from the Center. This necessitates the set-up of a good data processing and analysis system at CIC to enhance its operation efficiency.

## 2.2. To Establish Credit Rating Agencies

In developed countries, credit rating agencies have been in existence for a long time. However, Vietnam does not have any of such type of business so far.

On 24<sup>th</sup> January 2002, the SBV Governor issued Decision No. 57/2002/QD-NHNN permitting CIC to implement the project to experiment the analysis and credit rating of the companies at CIC. This is an important step for establishment of a credit rating agency in Vietnam. If the project succeeds, CIC will not merely be a collector and provider of primary data, but also supply information with “added value” such as analysis and comments to users.

In his article “Experimental implementation of analysis and credit rating of enterprises at CIC”<sup>10</sup>, Nguyen Huu Duong commented that “the establishment of a system for sector classification is highly important as based on such system, assessment and comparison between enterprises become really meaningful”. He also proposed a set of 11 financial ratios to be calculated and analyzed as well as the scoring system to rate enterprises field at CIC according to 6 grades (i.e. AA, A, BB, B, CC and C). The model is summarized in Appendix K.

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<sup>10</sup> Nguyen Huu Duong, 2003 “Experimental implementation of analysis and credit rating of enterprises at “CIC”, *Banking review* No. 5/2003, p. 52-56.

The noteworthy points in this model are:

- ♦ A number of financial ratios covering different areas (liquidity: 2, activity: 2, financial leverage: 3 and profitability: 3) are taken into account based on certain industry standards.

However, initially there will be only 4 broad industries, namely (1) agriculture, forestry, (2) industrial manufacturing, (3) construction and (4) trading & services. A more detail and specific classification of these industries would be more ideal and relevant. This will provide a good benchmarking system to credit analysts in their comparison and assessment of borrower's performance.

In addition, market value ratios should be included in the above list in view of the growing number of joint stock companies, either newly established or equitized from SOEs, who will sooner or later joint the securities market.

- ♦ The importance and influence of each ratio on the borrower's repayment capacity is also considered by its weight. However, it is practically difficult to determine which factor is more important than the others. As such, the weighting should also be based on statistics in each industry. From the point of view of the author of this thesis, a flexible weighting system (applicable to each industry or group of industry) should be more relevant.

♦ The result of such analysis will be used in combination with other non-financial information as the basis for credit rating of enterprises at CIC.

Though the above proposal can be challenged<sup>11</sup> and needs much improvement before being put into use, it opens a good direction to go. Through an effective credit rating system, CIC can provide more reliable data to users, not only on specific companies but also at industry or sector level.

### **2.3. To Strengthen the Operations of Securities Market**

This is also aimed to ensure sufficient and reliable information for ratio analysis. Many studies have been conducted on this topic. In the scope of this thesis, only focuses on it from the point of view of an information user.

Securities market is a rich source of information. As the “players” in the market must disclose all information on their business operations and performance, especially updates on financial aspects, analysts can source for the necessary information in the market for their assessments. Besides, the market also provides other important signals on borrowing companies’ prospects through prices of securities.

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<sup>11</sup> *Nguyen Anh Tuan, 2003, “Some comments on the experimental implementation of analysis and credit rating of enterprises at CIC”, banking review No. 8/2003,p. 31-33. In this article, the author questioned the above proposal on several aspect such as the basis for ratio selection (not adequately rational), weighting (more subjective than objective), non-financial information (not clearly explained on its use) and the scope of the project (unable to forecast the possibility of upgrading or downgrading of the rating).*

To make the securities market a good “source” of information, it is necessary:

- ♦ To strengthen the implementation of the regulations in respect of reporting and providing information in securities market (such as the Government Decree No 48-1998/ND-cp dated 11/07/1998 on securities market and the State Securities Commission (SSC) Decision No 04-1999/QD-UBCK dated 27/03/1999 on promulgation of the regulation on membership, listing, information announcement and securities trading). Focus should be placed on both timeliness of the report and the reliability of information. In addition, penalty and other modes of punishment need to be imposed and enforced against on non-compliance, either the reporting companies or their auditors.

- ♦ To require companies which are listed or to be listed in the securities market to enhance their internal accounting system and operations by investing in both physical equipment (e.g. computer software) and human skills (e.g. professionally qualified accountants). This is in order to facilitate the timely updated financial reports and their accuracy before information is provided to the market. For example, certain “technical” selection criteria can be worked out to ensure that such companies are eligible to be listed.

- ♦ To constantly review the performance of auditing system and operations by investing in both physical equipment (e.g. computer software) and human skills (e.g. professionally qualified accountants). This is in order to facilitate the timely updated financial reports and their accuracy before information is provided to the market. For example, certain “technical” selection criteria can be worked out to ensure that such companies are eligible to be listed.

- ♦ To constantly review the performance of auditing firms which have chosen to audit listed companies through the quality of their reported information. New appointment, dismissal or changes of such auditors can to provide a fair and equal competition among them, which in turn will help improve the reliability of financial information in the securities market not only for investors but others’ users.

#### **2.4. To Further Improve the Efficiency of Audit Operations**

This is aimed at ensuring the reliability of financial data which are used as “inputs” for ratio calculation and analysis. Though this cannot alleviate all distortions (such as intentional “window-dressing” entries) and provide 100% correct information about the company’s financial health, such “raw materials” for ratios calculation would be reflected more truly and reliably to facilitate the

analysts' works.

Some specific measure to implement the above are:

- ♦ To widen rang of business entities subject to audit requirements, including SOEs and LPCs. This is in order to ensure the fair and equal treatment among all business and increase the financial transparency in the economy.

- ♦ To increase the awareness on the importance of audit requirements and audited reports, especially among business and market users, such reports would not only useful to external users (e.g. lenders, investors) but also for internal users, especially the company's management in assessing their actual performance and efficiency.

- ♦ To enforce the State's control regulation on the operations of auditing firms in Vietnam. Along with the increase in number of auditing firms, the competition is also getting fiercer. It is said that some local firms are competing against each other through price cuts or discount offers while scarifying their service quality (e.g. relaxation in checking, skipping some procedures). As such, the State's control is necessary to create a fair playground for all players in the market of this special service and ensure its quality.

- ♦ To upgrade the present auditor's qualifications according to the international standards. There have been so far 10 audit standards required in Vietnam, which is only about one-third of those intended to be applied. This is not only to help local auditing firms improve their competitiveness against foreign competitors but also enhance the quality of their services. In addition, this will also help "screen out" the unqualified auditors from the market and improve its efficiency.

- ♦ To gradually "integrate" VASs into the international standards such as General Accepted Accounting Principles (GAAP), International Accounting Standards (IASs) so that this will help ensure the transparency, consistency and comparability of financial information, this in turn will improve the efficiency of financial analysis.

However, taking into consideration the boom of enterprises, especially in recent years with the new Law of Enterprises, vis-à-vis the limited numbers of auditing firms operating in Vietnam at present, difficulties in implementing the above proposed solution are expected. In addition, implementation of solution requires a better legal framework on accounting, auditing and takes long time to achieve its target.

However, credit analysts should be well aware that financial analysis is

only one of various tools in the credit evaluation. It will not be use as efficiently as expected without a good combination with other techniques and tools. In addition, it only focuses on qualitative figures while other qualitative information is also important, if not also decisive, to have a good evaluation on all aspects in the borrower's business performance and in turn, the right lending decision. Last but not least, even though it is based on figures, the analysis is still highly subjective and requires a wise application to be efficient.

## **Chapter 5**

### **Conclusion**

Financial analysis has been playing an important role in Vietnam banking system in general and Vietcombank particularly in credit evaluation process and contributed to ensure safety in the bank's lending activities. However, there are certain weaknesses in the actual adoption and application

of this tool which are resulted from various reasons. This necessitates a study to find out the causes of such weaknesses and solutions for improvement.

In the content of thesis (Chapter 2) has reviewed the importance of financial analysis in lending activities and popular analysis tools such as horizontal, vertical, and trend and ratio analyses. Focus of the chapter is placed on financial ratio analysis as it provides credit analysts with a simple and effective tool to measure different aspects of the borrower's financial performance, such as repayment capacity in short term (liquidity) and long term (solvency), capital structure (financial leverage), efficiency in asset management (activity ratio) and the market assessment on it (market value).

After a brief introduction on Vietcombank and its credit evaluation process, Chapter 2 has analyzed in details on the practices in its financial analysis. The thesis has pointed out the weaknesses in the practice, which include discrepancies in ratio calculation, limited scope of application, lack of a good benchmarking system, non-application of trend analysis and industry comparisons. Among the various causes, the following has been mentioned (1) lack of sufficient and reliable data, (2) limitations in internal applications, (3) lack of industry norms and standards in Vietnam, (4) lack of proper training and other reasons regarding the bank's weaknesses in information collection

system.

By reviewing briefly Vietcombank's lending direction in future and the importance of financial analysis its credit evaluation process, the thesis has recommended several solutions with the aim to improve the efficiency in the application of the tool in Chapter 3. The measures at macro level include setting up of a credit rating agency in Vietnam, strengthening of CIC operations, securities market and audit activities. As for Vietcombank, the recommendations are to widen the scope of application with more ratios being taken into analysis, adopt trend analysis as a supplement to the existing practice, set up a good internal set of standards for implementation, revise of the current scoring and rating model and improve information collection system as well as staff training activities.

By employing several research methods and based on the available information and data, the thesis has managed to answer the research questions set out in the introduction (Chapter 1). However, the scope of the study is limited in the following aspects:

Firstly, it only focused on analysis of quantitative information (which is mainly obtained from the borrower's financial statements). Analysis of qualitative information, though being of great importance, is not a subject of

this study.

Secondly, in the scope of financial evaluation, the thesis placed it emphasis on the analysis of financial ratios to assess the borrowers' overall financial health and repayment capacity (or in other words, firm specific risk) rather than those measuring project specific risks.

As such, it is only expected to serve as a supplement to other tools and techniques to formulate an effective credit evaluation in lending activities at Vietcombank in particular and other commercial banks in general. Due to the difficulties in time arrangement and information collection to complete this study, shortcomings in this thesis are inevitable and the author would like to welcome all comments, advice and proposals for correction for any possible mistakes.

## Appendices

## Appendix A

### Summary of common financial ratios

#### I. Liquidity ratios

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

$$\text{Acid test (or quick) ratio} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$$

$$\text{Interval measure} = \frac{\text{Current assets}}{\text{Average daily operating costs}}$$

#### II. Solvency ratios

$$\text{Total debt ratio} = \frac{\text{Total liabilities}}{\text{Total assets}}$$

$$\text{Long term debt ratio} = \frac{\text{Long term debt}}{\text{Long term debt} + \text{Total equity}}$$

$$\text{Times interest earned} = \frac{\text{Earnings before interest and tax}}{\text{Total interest expenses}}$$

$$\text{Debt service ratio} = \frac{\text{Cash flow from operations before interest and tax}}{\text{Interest and principal payment}}$$

#### III. Activity ratios

$$\text{Receivable turnover} = \frac{\text{Net credit sales}}{\text{Average accounts receivable}}$$

$$\text{Average collection period} = \frac{\text{Number of days in the periods}}{\text{Account receivable turnover}}$$

$$\text{Inventory turnover} = \frac{\text{Cost of sales}}{\text{Average inventory}}$$

$$\text{Average stock holding period} = \frac{\text{Number of days in the period}}{\text{Inventory turnover}}$$

$$\text{Asset turnover ratio} = \frac{\text{Total assets}}{\text{Average total assets}}$$

#### IV. Profit ratios

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}}$$

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}}$$

$$\text{Return on assets (ROA)} = \frac{\text{Net income}}{\text{Average total assets}}$$

$$\text{Return on equity (ROE)} = \frac{\text{Net income}}{\text{Total equity}}$$

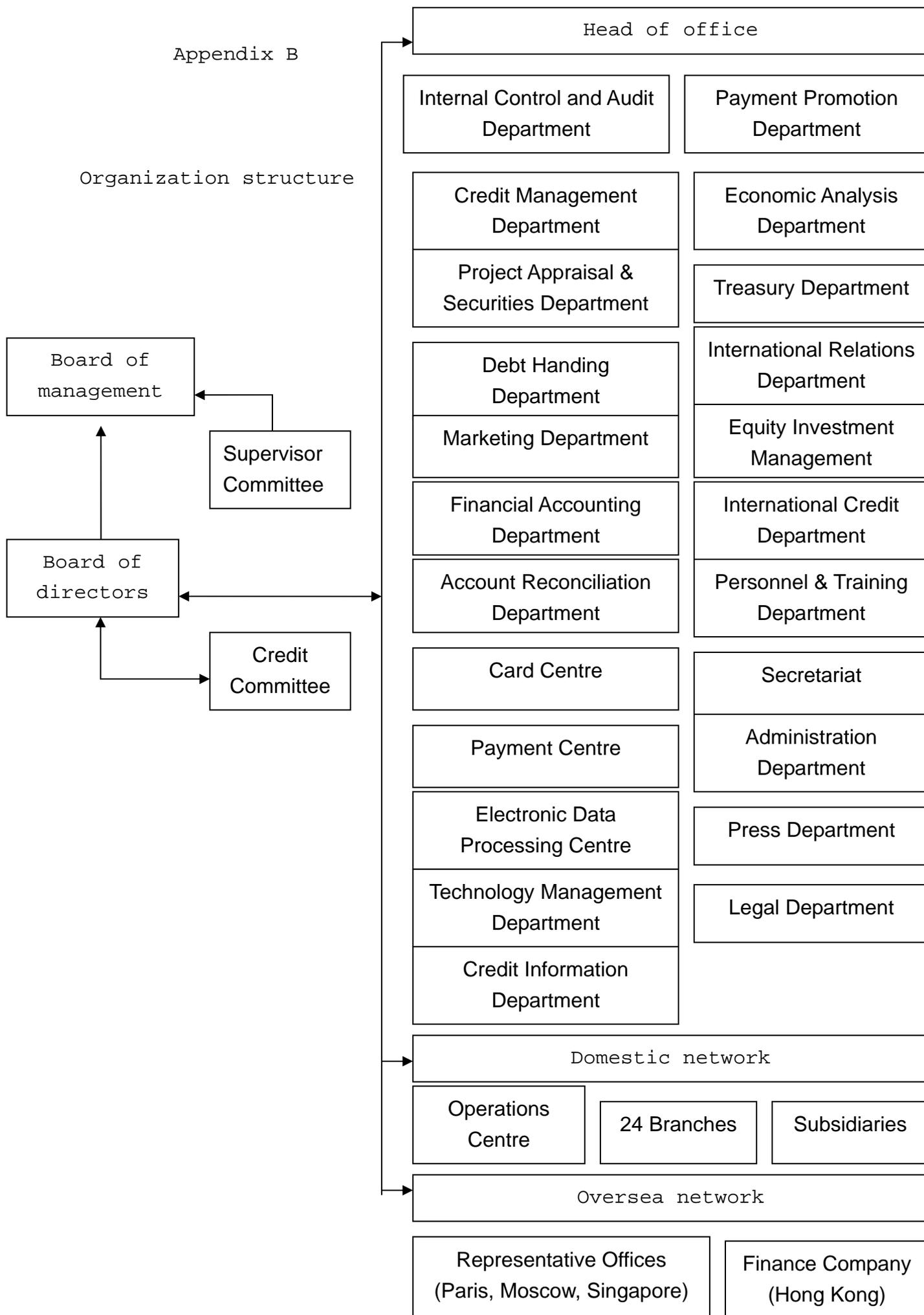
## **V. Market value ratios**

$$\text{Earning per share (EPS)} = \frac{\text{Net income}}{\text{Number of shares outstanding}}$$

$$\text{Price earning (P/E) ratio} = \frac{\text{Price per share}}{\text{EPS}}$$

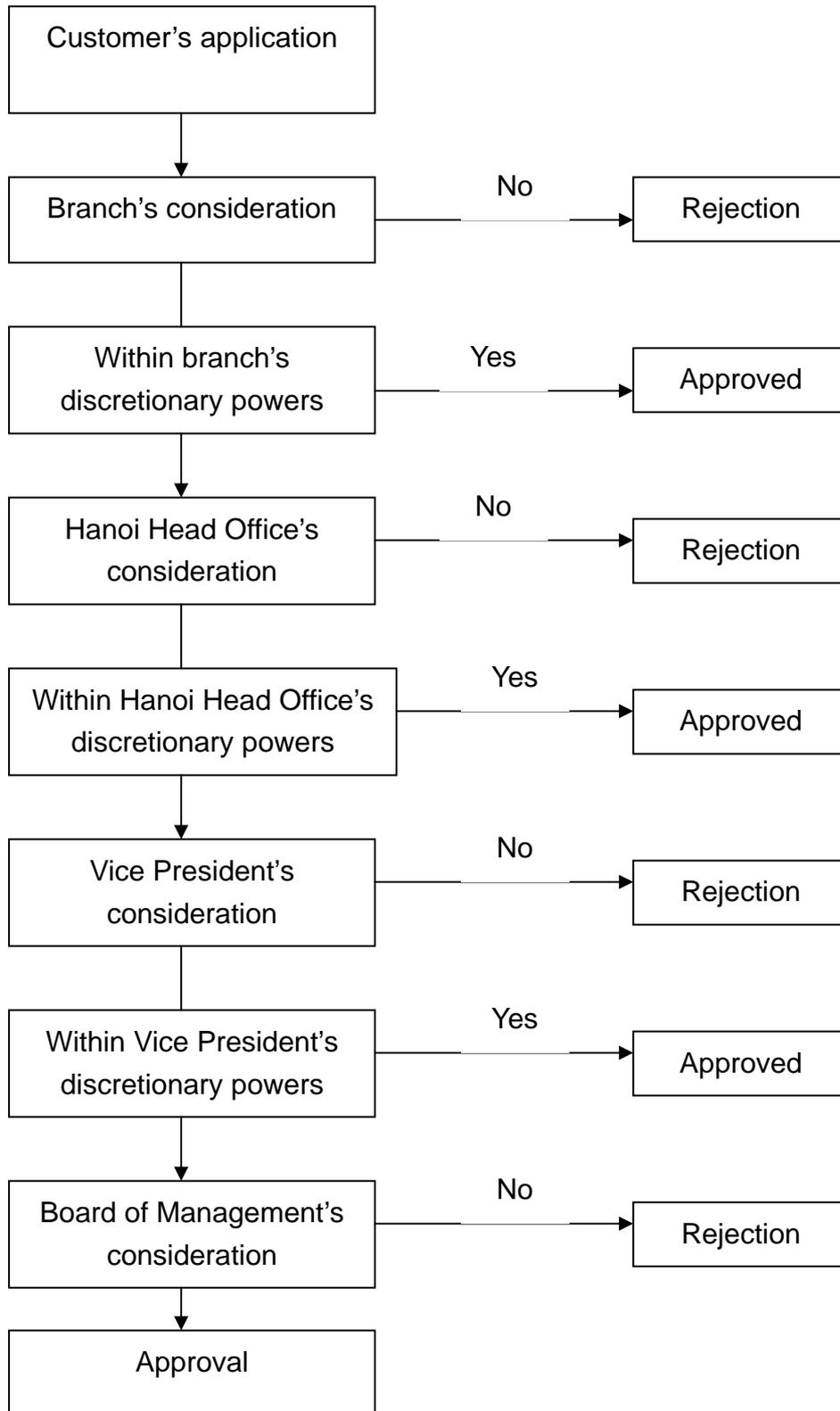
Appendix B

Organization structure



Appendix C

Workflow for credit processing and approval at vietcombank



### Appendix D

Credit risk rating (CRR) score sheet - with financials

(business loans)

Name of customer:	CRR			
Account number:	Branch:			
Factors	Score	Weight age	Total score (to circle)	
(A)	(B)	(C)	(D) = (B) x (C)	
<b>Customer Credit Rating</b>				
Years in business/ Management experience				
Commenced business since:.....				
10 years and above	4	15	60	
5 to less than 10 years	3		45	
3 to less than 5 years	2		30	
Less than 3 years	1		15	
Years of good conduct of account with VCB				
Public Bank/ other bank (*)				
Non-delinquent status since:....				
5 years and above	4	25	100	
3 to less than 5 years	3		75	
1 to less than 3 years	2		50	
Less than 1 year	1		25	
Type of industry per bank's prevailing				
direction of lending				
Encouraged	4	10	40	
Selective	2		20	

Cautious/ Alert	1		10
Avoid	0		0
Financial profile (**)			
a) % Growth turnover			
30% and above	4	4	16
20 to < 30%	3		12
10 to < 20%	2		8
Below 10%	1		4
Negative	0		0
b) % Growth net profit			
15% and above/ turnaround	4	4	16
10% to < 15%	3		12
5% to < 10%	2		8
Below 5%	1		4
Net loss/ negative	0		0
c) Current ratio (CR = CA/CL)			
1.5 and above	4	4	16
1.01 to < 1.5	3		12
0.5 to < 1.0	2		8
0.1 to 0.5	1		4
Below 0.1	0		0
d) Leverage ratio (LR = TL/NW)			
Below 1.0	4	4	16
1.0 to < 3.0	3		12
3.0 to < 5.0	2		8

Above 5.0	1			4
Insolvent	0			0
e) Interest coverage ratio				
1.51 and above	4	4		16
1.1 to 1.5	3			12
0.51 to 1.0	2			8
0.5 and below	1			4
Negative/ zero cover	0			0
g) Average collection period (days)				
90 and below	4	5		20
> 90 to 120	3			15
> 120 to 150	2			10
> 150 to 180	1			5
Above 180 days	0			0
<b>Security rating - Margin of advance (***)</b>				
Either - Category I (.....%)				Grade
Residential/ Shop house/Factory/ Industrial				
70% and below	4	25	100	1
More than 70% to 150%	3		75	2
More than 150% to 200%	2		50	3
More than 200% or clean	1		25	4
Or - Category II (.....%)				
Vacant/ /Office/ Shop lot/Others				
50% and below	4	25	100	1
More than 50% to 100%	3		75	2

More than 100% to 200%	2		50	3
More than 200% or clean	1		25	4
	Total CRR score:			
Overall CRR score (combined)	Customer credit rating without MA security score		Security rating	
(Total score x 100%)/400 = -----%	(Total score – MA score) X 100%			
Grade = -----	/300 = -----%		Grade = ---	
CRR grades:				
80 to 100 : A				
65 to < 80: B				
< 65: C	Name of officer		Date:	

*Notes:*

(\*) Years of good conduct with Vietcombank/ other bank is defined as the last 12 months record without default such as 5 or more returned cheques /Claim on BG/SG/SBLC/ Frequent OD excess/ Habitual overdue bills (>14 days) or installments (>30 days). Other banks conduct must be supported by last 6 months documentary evidence.

(\*\*) To score zero for each financial factors if unable to furnish latest final account for more than 2 years from date of year end closing. If financial year end is 31/12/2003 and latest final account available is 31/12/2001, the branch is to zero.

(\*\*\*) Mix type of security (Categories I and II above)

a) If the total values of securities are mainly (i.e. 50% and above) of Category I, then branch is to use Category I security rating scores.

b) If the total values of securities are mainly (i.e. 50% and above) of Category II, then branch is to use Category II security rating scores.

Appendix E

XYZ Company

Balance sheet

Unit: VND' 000

<b>Assets</b>	<b>31/12/2002</b>	<b>31/12/2003</b>
Cash	19,380,912	31,315,030
Account receivable	77,487,380	254,334,208
Raw materials	61,679,658	236,611,260
Finished goods	62,853,374	128,463,892
Other inventories	3,094,946	8,005,524
Other current assets	7,296,486	5,171,848
<b>Total current assets</b>	<b>231,792,756</b>	<b>663,901,762</b>
<b>Fixed assets</b>		
Tangible assets - Net Book Value	241,293,412	324,491,110
Intangible assets - Net Book Value	102,579,602	97,765,576
<b>Fixed assets - Net Book Value</b>	<b>343,873,014</b>	<b>422,256,686</b>
<b>Long term investment</b>	0	<b>61,300</b>
<b>Construction in progress</b>	30,435,270	<b>17,843,464</b>
<b>Total Assets</b>	<b>606,101,040</b>	<b>1,104,063,212</b>

<b>Liabilities and Equity</b>	<b>31/12/2002</b>	<b>31/12/2003</b>
Short - term loans	90,666,400	222,247,460
Accounts payable	5,144,564	58,672,642
Customers' advances	6,061,070	3,750,398
Payable to Budget	13,254,006	40,535,642
Inter - company payables	213,133,122	291,647,874
Other payables	11,103,664	1,881,420
Other liabilities	11,532,192	77,713,916
<b>Total current liabilities</b>	<b>350,895,018</b>	<b>696,449,352</b>
Long-term liabilities	277,390	277,390
<b>Total liabilities</b>	<b>351,172,408</b>	<b>696,726,742</b>
<b>Equities</b>		
Legal capital	277,994,298	277,994,298
Statutory reserve	0	7,573,374
Accumulated loss	(23,065,666)	121,768,798
<b>Total equities</b>	<b>254,928,632</b>	<b>407,336,470</b>
<b>Total liabilities &amp; equity</b>	<b>606,101,040</b>	<b>1,104,063,212</b>

Appendix e

Statement of income and retained earnings

Unit: VND'000

Items	2002	2003
<b>Gross sales</b>	<b>750,728,604</b>	<b>1,854,080,442</b>
Turnover tax & other discount items	40,417,908	16,799,052
<b>Net Sales</b>	<b>710,310,696</b>	<b>1,837,281,390</b>
Cost of goods sold	638,817,792	1,481,022,642
<b>Gross profit</b>	<b>71,492,904</b>	<b>356,258,748</b>
Selling expenses	30,659,116	126,657,804
Administrative expenses	26,111,360	59,257,090
<b>Operating income/ (loss)</b>	<b>14,722,428</b>	<b>170,343,854</b>
Net financial income/ (loss)	(36,373,082)	(17,614,424)
<b>Profit/ (loss) before tax</b>	<b>(21,650,654)</b>	<b>452,729,430</b>
Profit tax	0	0
Transfer to statutory reserve	0	7,573,374
<b>Profit/ (loss) brought forward</b>	<b>0</b>	<b>(21,650,654)</b>
<b>Profit/ (loss) carried forward</b>	<b>(21,650,654)</b>	<b>123,505,402</b>

## Appendix e

### Brief financial profile

Items	Unit	2002	2003
Turnover/ Total revenue	VND'000	750,728,604	1,854,080,442
Pre-tax net profit/ (Net loss)	VND'000	(21,650,654)	452,729,430
Paid-up capital/Capital employed	VND'000	277,994,298	277,994,298
Net worth (NW)	VND'000	254,928,632	407,336,470
Total current assets (CA)	VND'000	231,792,756	663,901,762
Total fixed assets (FA)	VND'000	343,873,014	422,256,686
Total current liabilities (CL)	VND'000	350,895,018	696,449,352
Total liabilities (TL)	VND'000	351,172,408	696,726,742
Net working capital (CA-CL)	VND'000	(119,102,262)	(32,547,590)
Current ratio (CA/CL)		<b>0.66</b>	<b>0.95</b>
Gearing (TL/NW)		<b>1.38</b>	<b>1.71</b>
Average collection period	days	<b>28</b>	<b>50</b>
Interest coverage ratio		-	<b>9.67</b>

Brief customer's profile:

Economic sector: joint venture

Principal business activities: Manufacturing of consumer goods

Date of establishment: 1997

Brief information of the loan:

Purpose: Working capital

Type of facility: Revolving credit

Credit limit: US\$ 1,000,000

Collateral: None

## Appendix e

### XYZ Company

#### **1. Analysis of financial performance for December 31<sup>st</sup>, 2003**

##### ***1.1. Turnover and profitability***

Turnover increased sharply by 2.5 times from 750,728,604,000 VND (2002) to 1,854,080,442,000 (2003). Reasons are increasing volume of sales, market expansion fostered by high demand.

Cost of good sold (COGS) only rose by 2.3 times over the same period, reportedly due to stable price of material in the world market. As a result, gross profit margin improved from 9.2% to 19.5%.

The rise in overheads in 2003 was under good control, only increased by 2.3 times compared to 2002. Meanwhile, selling expenses increased drastically, mainly for advertising, promotion and sale commission to capture more market share.

Financial result: the company still managed to turn around with an encouraging pretax profit in 2003 against a loss in 2002. No profit tax was they were enjoying tax holidays as licensed.

##### ***1.2. Liquidity***

Though having improved from 0.66 (2002) to 0.95 (2003), current ratio still below 1, it is indicating deficit working capital. This supports their

request for a higher loan limit to finance the expected business expansion.

Current assets mainly comprised of trade debtors (38%) and inventory (56%). Average collection period increased from 28 days (2002) to 50 days (2003) as an incentive to their new agents but it is still within their normal credit term of 60 days. No problem in debt collection was reported. Meanwhile, more inventories were needed to prepare for the peak season (i.e. New Year festival) when production output and sales were expected to increase.

The above rises in current assets were either financed by short term bank loans, trade creditors and especially the foreign partner's related companies (who supplied most of the raw materials). This was clearly reflected in significant increases in the respective liability accounts by end of 2003 against 2002.

Overall, the company still appeared liquid, even with a low current ratio, which was due to their ability to arrange sufficient cash flows (either from standby credit lines with banks or credit term granted by the suppliers) to meet due payments without much difficulties.

### **1.3. Leverage**

The company was adequately levered with leverage ratio at 1.38

(2002) and 1.71 (2003). The sharp rise in current liabilities as explained above was partly absorbed by improved net work as a result of the pretax profit in 2003.

## **2. Comments on the analysis**

Analysis of changes in turnover and profitability was reasonably explained. Good prospect was expected in view of high sales growth and favorable market demand. However, COGS can be affected by the international market (as most raw materials are presently imported). In addition, forecast of future trend is difficult due to short time span.

Analysis of liquidity seemed inadequate. Stock turnover was not mentioned while calculation of collection period is distorted by the formula (i.e. based on closing balance) and seasonal factor.

Analysis of leverage position is also limited. Calculation of interest coverage is incorrect as financial expenses were consolidated to work out net financial income/ (loss). A detailed breakdown of this account is required to reflect more truly their repayment capacity.

Appendix g

Audited financial statement of ABC Company

Profit and loss account

		US\$	US\$
	Notes	2003	2002
for the year ended march 31 <sup>st</sup> , 2003			
Turnover	3	4,508,664	5,905,266
Operating expenses	4	<u>(6,522,670)</u>	<u>(6,997,750)</u>
Operating loss		<u>(2,014,006)</u>	<u>(1,092,484)</u>
Other income	5	<u>14,056</u>	<u>9,454</u>
Net loss for the year		(1,999,950)	(1,083,030)
Acc. loss at the beginning of the year		<u>(11,439,016)</u>	<u>(10,355,986)</u>
Acc. Loss at the end of the year		(13,438,966)	(11,439,016)

Statement of Total Recognized Gains and Losses during the year other than those reflected in the profit and loss account above.

Appendix g

Audited financial statement of ABC Company

Income statement

For the year ended March 31<sup>st</sup>, 2003

Currency: usd

Items	Note	Code	2003	2002
<b>Gross sales</b>		<b>01</b>	<b>4,588,554</b>	<b>5,081,686</b>
Including export		02	-	-
<b>Less deductions</b>		<b>03</b>	-	-
Sales discounts		04	-	-
Sales allowances		05	-	-
Sales returns		06	-	-
Excise tax and export duty		07	-	-
<b>1. Net sales</b>		<b>10</b>	<b>4,588,554</b>	<b>5,081,686</b>
<b>2. Cost of goods sold</b>	<b>3,7</b>	<b>11</b>	<b>1,697,690</b>	<b>1135498</b>
<b>3. Gross margin</b>		<b>20</b>	<b>2,890,864</b>	<b>3,946,188</b>
<b>4. Selling expenses</b>		<b>21</b>	-	-
<b>5. General and administration expenses</b>	<b>3,8</b>	<b>22</b>	<b>1,697,016</b>	<b>5,550,290</b>
<b>6. Operating loss</b>		<b>30</b>	<b>(503,168)</b>	<b>(1,604,102)</b>
7. Income from financial activities		31	16,344	3,676
8. Expenses from financial activities		32	27,438	-
<b>9. Profit from financial activities</b>		<b>40</b>	<b>(11,094)</b>	<b>3,676</b>
10. Other income		41	259,024	27,986
11. Other expenses		42	58,184	32,920
<b>12. Other (loss)/ gains</b>		<b>50</b>	<b>200,840</b>	<b>(4,934)</b>
<b>13. Net loss before tax</b>		<b>60</b>	<b>(313,422)</b>	<b>(1,605,360)</b>
<b>14. Business income tax</b>		<b>70</b>	-	-
<b>15. Net loss after tax</b>		<b>80</b>	<b>(313,422)</b>	<b>(1,605,360)</b>

**Appendix H**

**Cic report form K02**

It institution.....**Scope of application:** all credit institutions, their  
.....transactions centers and branches

**Reporting frequency:**

- Latest by 3 working days from the customer's establishment of credit relation for the first time. For quarterly update: on the 20<sup>th</sup> of the first month of the following year.

- If necessary, CIC can require credit institutions to provide customer's financial statements (balance sheet, P&L, cash flow statement and notes to financial statements)

**Borrower's financial position**

(up to date .....month .....year.....)

Customer's name:

Customer code:

1. Net sales

Accumulate to quarter:.....year:.....

2. Pretax profit

Accumulate to quarter:.....year:.....

3. After tax profit

Accumulate to quarter:.....year:.....

4. Cash (including cash in hand, at bank and in transit)

5. Short term financial investment

6. Receivable accounts

6.1. Trade debtors

6.2. Advances to sellers

6.3. Internal receivable

7. Inventory

7.1. Raw materials

7.2. Finished products

- 7.3. Goods in stock
- 8. Other current assets
- 9. Fixed assets
  - 9.1. Tangible fixed assets (residual value)
    - 9.1. Accumulated depreciation of tangible fixed assets
- 10. Long term financial investment
  - 10.1. Capital contribution in joint ventures
- 11. Construction in progress
- 12. Long term deposits
- 13. Liabilities
  - 13.1. Current liabilities
    - 13.1.1. Short term loan
    - 13.1.2. Trade creditors
    - 13.1.3. Tax and other payable to State budget
    - 13.1.4. Current portion of long term loans
  - 13.2. Long term liabilities
    - 13.2.1. Long term loan
  - 13.3. Other liabilities
- 14. Owner's equity
  - 14.1. Owners' capital
    - 14.1.1. Owners' capital
    - 14.1.2. Retained earnings
    - 14.1.3. Investment funds
  - 14.2. Allocated budget

Dated this .....

Prepared by

Checked by

Approved by

## **Appendix I**

### **Companies listed on hochiminh city securities trading center (hstc)**

1. REE Corp.
2. SaiGon Cable and telecommunication Materials JS Company (SACOM)
3. Hai Phong Paper JS Company (HAPACO)
4. Transportation and Storage IS Company (TRANSIMEX)
5. Long An Export Food Processing IS Company (LAFOOCO)
6. Sai Gon Hotel IS Company
7. Ha Long Canned Foods IS Company (CANFOOCO)
8. Da Nang Plastics JS Company (DANAPLAST)
9. Bien Hoa Biscuits and Candies JS Company (BIBICA)
10. Sai Gon Soft drink JS Company (TRBECO)
11. Binh Thanh Manufacturing, Trading & Im-Ex JS Company (GILIMEX)
12. Binh Trieu Mechanical and Construction JS Company
13. Bim Son Packaging JS Company
14. An Giang Seafood Import Export JS Company (AGIFISH)
15. Chau Thoi Concrete 620 JS Company
16. Transportation Union Agent JS Company (GERMADEPT)
17. Economic Cooperation and Import Export JS Company (SAVIMEX)
18. Sea food No. 4 JS Company (SEAPREXCO)
19. Khanh Hoi Import Export JS Company (KHAHOMEX)
20. Hanoi Post Information System JS Company (HACISCO)
21. Vietnam Telecommunication JS Company (VTC)

### **authorized securities trading companies**

1. Bao Viet Securities Company

2. BIDV Securities Company (BSC)
3. ACB Securities JS Company
4. Thang Long Securities Company
- 5.irst Securities JS Company
6. Sai Gon Securities Company
7. ICB Securities Company
8. Agriculture bank Securities Company

Source: web site address: [www.stockmarket.vnn.vn](http://www.stockmarket.vnn.vn)

## Appendix K

### Consolidated credit rating score sheet

Factor	Weight	Rating scale				
		A	B	C	D	<D
<b>Liquidity ratios</b>						
1. Current ratio	2	5	4	3	2	1
2. Acid test ratio	1	5	4	3	2	1
<b>Activity ratios</b>						
3. Inventory turn over	3	5	4	3	2	1
4. Average collection period	3	5	4	3	2	1
5. Total asset turnover	3	5	4	3	2	1
<b>Financial leverage ratios</b>						
6. Debt to total assets ratio	3	5	4	3	2	1
7. Debt to equity ratio	3	5	4	3	2	1
8. Overdue loan/Total outstanding loans	3	5	4	3	2	1
<b>Profitability ratio</b>						
9. Pretax profit/ Net sales (Net margin)	2	5	4	3	2	1
10. Pretax profit/ Total asset (ROA)	2	5	4	3	2	1
11. Pretax profit/ Equity (ROE)	4	5	4	3	2	1

To compare total score with the classification, there are 6 rating grades:

AA From 117 to 135      BB from 79 to 97      CC from 41 to 59  
A From 98 to 116      B from 60 to 78      C Lower than 41

#### Credit rating grades at CIC

Grade	Description
AA	Very good performance with high effectiveness. Good growth prospect. Low risk.
A	Good business performance with healthy financial position and growth potential. Low risk
BB	Good business performance with growth potential. Facing certain financial constraints and potential threats. Low risk.
B	Facing operation inefficiency. Low financial profile with potential threats. Medium risk.
CC	Low operation efficiency. Weak financial position, lack of financial means. High risk
C	Consecutive loss making situation. Weak financial position. No financial means. High threats of being bankrupt. Very high time.

Source: Nguyen Huu Duong, 2003 "Experimental implement of and credit rating of enterprises at CIC "; Banking review No 5/2003, p. 52-56

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