

*Faculty of Commerce*

*Faculty of Commerce - Papers*

---

*University of Wollongong*

*Year 2006*

---

Using accounting information for  
financial institution analysis in an  
evolving environment

H. W. Collier\*

D. A. Harjito<sup>†</sup>

C. B. McGowan<sup>‡</sup>

\*University of Wollongong, collier@uow.edu.au

<sup>†</sup>Universiti Kebangsaan Malaysia

<sup>‡</sup>Norfolk State University, USA

This article was originally published as Collier, HW, Harjito, DA and McGowan, CB, Using accounting information for financial institution analysis in an evolving environment, Proceedings of the American Accounting Association Southwest Region Conference, Oklahoma City, 1-4 March 2006.

This paper is posted at Research Online.

<http://ro.uow.edu.au/commpapers/28>

# USING ACCOUNTING INFORMATION FOR FINANCIAL INSTITUTION ANALYSIS IN AN EVOLVING ENVIRONMENT

Henry W. Collier, University of Wollongong  
D. Agus Harjito, Universiti Kebangsaan Malaysia  
Carl B. McGowan, Jr., Norfolk State University

## Introduction

Corporate financial management can be defined as the efficient acquisition and allocation of funds. The objective of corporate financial management is to maximize the value of the firm. The value of the firm is determined by the risk and return characteristics of the firm. The risk and return characteristics of a firm are determined by the decisions made by the corporate financial managers. The decisions made by corporate, financial, managers fall into one of two categories: investment decisions and financing decisions. The dividend decision involves the allocation of funds but is not an investment decision and affects the financing of the firm but is not a financing decision.

Investment decisions determine the left-hand side of the balance sheet through asset purchases. Investment decisions determine the nature of the assets of the firm and the industry as well as the degree of operating leverage of the firm. Financing decisions determine the right-hand side of the balance sheet, the financial structure of the firm, through securities issues and retained earning. Financing decisions determine the capital structure of the firm and the degree of financial leverage.

The effects of the decisions made by corporate financial managers determine the future cash flows of the firm. A corporate financial manager can estimate the probability distribution including the expected value and the standard deviation of the future cash flows based on these decisions.. Using these estimates of future cash flows, a decision maker can calculate the value of the firm and analyse the impact of decisions, on the value of the firm.

Decision makers estimate the probability distribution of future cash flows based on information provided by accounting and financial managers. To be useful, accounting information must have information content and therefore be able to influence and change decisions. Beaver, Kennelly and Voss (1968) argue that accounting information is useful if the information has predictive ability.

Managerial accounting information is available to corporate insiders and includes material, non-public information. Individuals who have access to material, non-public information such as commercial loan officers, investment bankers, attorneys, and auditors are constructive insiders. Because of access to inside information, these individuals are *de facto* insiders. The sub-set of information that is provided to external decision makers constitutes financial accounting information. External decision makers include customers, suppliers, bond holders, and stock holders. Each group must determine whether to provide credit, and to buy, sell or hold bonds (debentures) or stock (shares). We use the terms stocks and shares, and bonds and debentures as 'equivalents'. There are some international differences in terminology and we will adopt the usual North American language for this paper.

Bank managers follow the same model as corporate financial managers, except that the product is different. Banks provide financial services. The stock price of a bank is

determined by the risk and return characteristics of the bank. The risk and return characteristics of the bank are determined by the decisions made by the bank managers. Bank asset investment decisions determine the portfolio of loans and other assets held by the bank. Bank financing decisions determine the capital structure of the bank. A financial analyst determines the prices of a share of bank stock from the estimated probability distribution of future cash flows based on the financial information provided in the financial statements of the bank.

Bank stock price is influenced by environmental factors such as current economic conditions, market demand, the political environment, and the legal environment, Fraser, Gup, and Kolari (2001). The legal and political environments determine the regulatory environment and public confidence in the banking structure. Economic conditions and market demand influence a bank's market share. These are external environmental factors over which bank managers have no control. Bank planning, the use of technology, personnel development, and bank condition are internal performance factors over which bank managers do have control. These factors are controlled by investment and financing decisions that attempt to maximize the value of the firm. The goal of financial information reporting is to insure that complete information is provided to external decision makers who can properly value the firm.

### **The Malayan Bank, Sdn Bhd**

The Malayan Bank, Sdn Bhd (Maybank) was incorporated in the Federation of Malaya on 31 May 1960 and began operations on September 12, 1960. Maybank started with an authorized share capital of RM20 million and an issued and paid-up share capital of RM7.5 million. As of 20 November 2000, Maybank has an authorized share capital RM4 billion and issued and paid-up share capital of RM2.35 billion. Maybank's current shareholders' funds are RM9.6 billion, with total assets exceeding RM160 billion (as at June 30, 2003). It is the largest bank in Malaysia and is ranked 127 among 1,000 banks in the world. Maybank continues to maintain its role as a dynamic change agent in financing business expansion and assisting nationwide growth. Maybank is engaged in commercial banking business and merchant banking, leasing, hire-purchase, general and life insurance, discount house business, factoring, stock markets (broker), venture capital, trustee, nominee service, property trust, unit trust, and futures broking. Maybank has the largest service network in Malaysia and branches in the international centres and correspondent relations worldwide.

In 1979 Maybank became the first Malaysian bank to adapt computerization and has since maintained its position as a leader in innovative financial services. Maybank began the use of ATMs in Malaysia and was the first financial institution in Malaysia to introduce internet banking services through its internet financial portal at website [Maybank2u.com](http://Maybank2u.com). Maybank has introduced many innovative products such as MAS Electronic Ticketing and a B2B e-commerce trading hub. Maybank continuously enhances as well as leverages any group synergy to adapt needs of its clients and the environment to provide seamless financial service and sales as well as banking convenience to its customers. Maybank continues to build on technology for banking conveniences to customers with ATMs, telephone banking, passbook update machines, cash deposit/cheque machines, desktop banking and internet banking service.

## **A Financial Analysis Model for Financial Institutions**

A model of financial analysis for financial institutions based on the Du Pont system of financial analysis return on equity model is provided by Saunders (2000). The Du Pont formula shows that the rate of return on assets can be found as the product of the profit margin times the total assets turnover. Du Pont system implies that the return on equity model disaggregates performance into three components: net profit margin, total asset turnover, and the equity multiplier. The profit margin allows the financial analyst to evaluate the income statement and the components of the income statement. Total asset turnover allows the financial analyst to evaluate the left-hand side of the balance sheet. The equity multiplier allows the financial analyst to evaluate the right-hand side of balance sheet. The bank decision maker can use the return on equity model to project financial needs and the external financial analyst can use the return on equity model to evaluate the performance of the financial institution. Thus, the Du Pont system of financial analysis can be used to construct a financial plan for the bank. The DuPont system of financial analysis provides a means for the firm to monitor performance through the planning period and to post-audit the planning process.

### **Financial Analysis of Malayan Bank – Balance Sheet Items<sup>1</sup>**

Maybank has eleven major categories of assets. Cash and short-term funds have increased from 1998 to 2000 and have decreased on 2001. They have fluctuated from a high of RM13.038 billion in 2000 to a low of RM10.449 billion in 2001 and return to RM13.218 billion in 2003. Securities purchased under resale agreement ranged from a low of RM87.007 million in 1999 to a high of RM582 million in 2003. Deposit and placements with financial institutions have increased from a low of RM4.449 billion in 1999 to a high of RM72.559 billion in 2003. Securities tradings have decreased steadily from 1988 to 2000 to a low of RM1.402 million, then it fluctuated from a high of RM295.528 million 2001 to a low of RM38.397 million in 2002. Investment securities have increased steadily from 1988 of RM10.123 billion to a high of RM18.735 in 2003. Loans and advances have also increased steadily from 1988 to 2003 to a high of RM80.160 billion. Investment in associated companies was stable condition from 1988 to 2000 of RM6.180 million, then increased to 2003 to RM9.740 million. Investment in subsidiary companies has increased steadily from 1988 of RM1.650 billion to high of RM2.087 in 2001, then, decreased to RM1.868 billion in 2003. Other assets have fluctuated from a high of RM1.063 billion in 2000 to a low of RM743.313 million in 2002. Statutory deposits with central banks have also fluctuated from a high of RM4.542 billion in 1998 to a low of RM1.855 billion in 2000. Finally, fixed assets have increased steadily from 1988 to 2001 to a high of RM984.903 million.

Maybank has six major liability accounts over 1988 to 2001. There are two additional accounts added since 2002: recourse obligation on loans sold to Cagamas and provision for taxation and zakat. Deposits from customers have steadily increased from 1998 to 2003 to high of RM86.695 billion. Deposits and placements of banks have fluctuated from a high of RM15.851 billion in 2000 to a low of RM10.845 in 2002. Obligations on securities sold under repurchase agreements have decreased from a high of RM2.652 billion in 1998 to a low of RM2.471 in 1999 and have increased steadily from 2000 to 2003 of RM5.209 billion. Bills and acceptances payable have fluctuated

---

<sup>1</sup> The financial statements are available from [cbmcgowan@yahoo.com](mailto:cbmcgowan@yahoo.com)

from a high of RM6.131 billion in 1998 to a low of RM2.645 billion in 2002. Other liabilities have also fluctuated every year over 1998 to 2003 from a high of RM2.463 billion in 2001 to a low of RM1.489 billion in 2002. Subordinated obligations have decreased from 1998 of RM1.743 billion to 2000 of RM950 million, and have increased to 2003 of RM3.004 billion. Recourse obligations on loans sold to Cagamas and provision for taxation and zakat have been recorded only in 2002 and 2003.

Maybank has two sources capital from shareholders' funds i.e. share capital and reserves. Share capital has increased steadily from 1998 to 2003 to a high of RM3.589 billion. While reserves have also increased steadily from 1998 to 2003, except for a decline in 2000 to 2001, to a high of RM7.686 billion in 2003.

### **Financial Analysis of Malayan Bank – Income Statement Items**

Maybank has four major sources of income – interest, operations, non-interest income, and dividends from subsidiary. Interest income has decreased steadily from 1998 of RM8.706 billion to 2003 of RM5.248. Income from SPI operation has also increased steadily from 1998 of RM48.815 million to 2003 of RM252.301 million. Non-interest income has fluctuated from 1998 to 2003. A high of RM1.257 billion in 2001 has fluctuated to a low of RM779 million in 1998. Finally, dividends from subsidiaries have increased from RM224 million in 2002 to RM1.237 billion in 2003. The dividend income from subsidiaries source has started in June, 2002.

Maybank's expense items fall into five categories – interest expense, overhead expenses, loan losses and provisions, taxation and zakat, and transfers to statutory reserves. Interest expense has fluctuated from a high of RM5.656 billion in 1998 to a low of RM2.415 billion in 2003. Overhead expenses have increased steadily from a low RM996 million in 1998 to a high of RM1.728 billion in 2003. Loan loss and provision have fluctuated from a high of RM2.137 in 1998 to a low of RM784 million in 2003. Finally, taxation and zakat has increase steadily from a lowest of RM58.958 million in 1999 to a highest of RM682 million in 2003.

### **Discussion of Financial Ratio**

Assets as a percent of total assets such as cash and short-term funds average 10.34% with a high of 13.47% in 2000 and a low of 8.03% in 1998. Securities purchases average 0.24% of total assets with a high of 0.46% in 2003 and a low of 0.10% in 1999. Deposit and placements average 5.39% of total assets with a high of 6.10% in 1998 and a low of 4.73% in 2002. Dealing securities average 0.12% of total assets with a high of 0.27% in 1998 and 2001 and in low of 0.001% in 2000. Investment securities average 12.97% of total assets with a high of 14.68% in 2003 and a low of 11.64% in 1998. Loans and advances average 64.68% of total assets with a high of 66.90% in 2001 and a low of 62.79% in 2003. Investment in associated companies average 0.01% of total assets with same level of 0.1% for all years. Investment in subsidiaries companies average 1.79% of total assets with a high of 1.99% in 1999 and a low of 1.46% in 2003. Other assets average 0.92% of total assets with a high of 1.10% in 1998 and 2000 and a low of 0.63% in 2002. Statutory deposits with central banks average 2.69% of total assets with a high of 5.22% in 1998 and a low of 1.92% in 2000. Fixed assets average 0.83% of total assets with a high of 0.88% in 2001 and a low of 0.80 in 1988. Finally, deferred tax assets average 0.67% of total assets with same level between 2002 and 2003.

Liabilities as a percent of total assets such as deposits from customers average 65.79% with a high of 69.72% in 2002 and a low of 59.69% in 1998. Deposits and placements in banks average 12.89% with a high of 17.66% in 1988 and a low of 9.22% in 2002. Obligations on securities sold average 3.45% with a high of 4.08% in 2003 and a low of 2.82% in 1999. Bills and acceptance payable average 4.75% with a high of 7.05% in 1988 and a low of 2.25% in 2002. Other liabilities average 1.81% with a high of 2.23% in 1988 and a low of 1.27% in 2002. Subordinated obligations average 1.86% with a high of 2.55% in 2002 and a low of 0.98% in 2000. Both recourse obligations to Cagamas and provision for taxation and zakat average 1.86% and 0.61%. Equity accounts as a percent of total assets, such as share capital average 2.60% with a high of 3.02% in 2002 and a low of 2.11% in 2001. Reserves average 6.03% with a high of 6.63% in 2000 and a low of 5.64% in 2001. Shareholders' funds average 8.63% with a high of 9.04% in 2000 and a low of 7.75% in 2001.

Income statement accounts as a percent of sales such as interest expense average 43.15% with a high of 59.33% in 1998 and a low of 31.51% in 2003. Overhead expenses average 17.87% with a high of 23.14% in 2002 and a low of 11.72% in 1998. Loan losses and provisions average 16.96% with a high of 22.42% in 1998 and a low of 10.23% in 2003. Finally, taxation and zakat average 5.70% with a high of 8.91% in 2003 and a low of 0.78% in 1999.

### **DuPont Analysis of Maybank**

Return on equity (ROE) for Maybank for the study period averages 12.65% but with a range from 3.60% in 1998 to 23.08% in 2000. Return on assets (ROA) is lower average, 1.11%, with a low of 0.30% in 1998 to a high of 2.09% in 2000. The profit margin (PM) averages 16.32% with range from a high of 26.53% in 2002 and a low of 2.73% in 1998. The asset utilization ratio (TAT) averages 7.46% with a high of 10.97% in 1988 and a low of 5.65% in 2002. The equity multiplier (EM) averages 11.63 times with a range from 11.06 times in 2000 and 12.90 times in 2001. The current ratio averages 1.09% with a range of 1.07 to 1.09%. The equity ratio averages 0.09% with a range 0.08% to 0.09%.

Return on equity volatility results significant variability in all three input variables – net profit margin, total asset turnover, and equity multiplier. The equity multiplier has variability with a range 0.97 times. This ratio has decreased slowly from 12.03 times in 1998 to 11.06 times in 2000 and increased to 12.90 times in 2001, but decreased to 11.39 times in 2003. The net profit margin has a significant variability with a range 25.8% from a low of 2.73% in 1998 to a high 28.53% in 2000. Total asset turnover has variability with a range 5.32% from 5.65% in 2002 to 10.97% in 1998. The figures show that the volatility in return on equity primarily results from the volatility of profit margin. The most dramatic effect in return on equity and profit margin occur just after the economic crisis of 1998. Both return on equity and profit margin increased sharply from 1998 to 1999. The return on equity increased from a low of 3.6% in 1998 to 10.25% and 23.08% in 1999 and 2000 respectively. The profit margin increased from a low of 2.73% in 1998 to 10.77% and 28.53% in 1999 and 2000.

Table 4 presents selected data for Maybank stock over 1998 to 2003. Total trading volume for Maybank stock price from, 1998 to 2003, has fluctuated from a high of RM1,130,421 million in ringgit value from 73,404,000 units in 2000 to a low of RM298,199 million in ringgit value from 34,665,000 units in 2003. Because economic crisis in 1997, the trading volume fell dramatically from 69,297,00 units in 1998 to

35,336,000 units in 1999. The price to book value (P/BV) ratio has fluctuated from a high of 3.87 in 2000 to a low of 0.58 in 1998. The price earnings (PE) ratio has fluctuated from a high of 36.67 times in 2000 to a low of 3.60 times in 1998. Dividend payments are very strange, because in the economic crisis Maybank paid dividends of 5.74% in 1998, then reduced dividends returns dramatically to a lowest level of 0.78% in 2000 and to 0.92% in 1999.

Table 3 shows selected data for the Malaysian economy over the study period. The economic crisis of 1997 caused the GDP to fall from RM77,157 billion in 1997 to RM70,271 billion in 1998. Malaysia recovered from this economic crisis in 1998. GDP has increased steadily from RM70,271 billion in 1998 to RM107,603 billion in mid 2003. But, inflation – and we use the CPI as a proxy for inflation – has also increased steadily from 95.8 in 1998 to 104.8 in 2003.

### **Summary and Conclusions**

Return on equity analysis provides a system for planning as well as analyzing financial institution performance. In the case of Malaysia, Bank Negara Malaysia has successfully implemented a merger program for Malaysian banks in order to compete in the face of financial deregulation brought about by globalization. The purpose of this paper is to provide additional insights into the improvement of a bank's financial situation, i.e. commercial banks, due to the recent series of bank mergers in Malaysia. This paper presents an application of the model for the financial analysis of a bank based on the DuPont system of financial analysis presented in Saunders (2000). Bank return on equity is decomposed into net profit margin, total asset turnover and the equity multiplier. This model is applied to Maybank in Malaysia which is one of the ten anchor banks in Malaysia that must satisfy the requirement of having a minimum RM2 billion shareholders fund and a minimum total assets of RM25 billion.

Over the period of study from 1998 to 2003, during which substantial financial difficulties existed, Maybank's assets rose gradually. Both income and expenses dropped during the study period with unusually large decreases in expenses in 2000 because decreases in both interest expense and loan loss and provision. This combination leads to an increase in net profit margin and a subsequent increase in return on equity leading to an increase in the stock price. Maybank appears to have benefited from the financial crisis in Malaysia and the subsequent restructuring of the banking industry.

### **REFERENCES**

Beaver, W, Kennelly and Voss [1968], Predictive Ability, *The Accounting Review*, October, 1968

Fraser, Donald R., Benton E. Gup, and James W. Kolari. *Commercial Banking*, Second Edition, South-Western College Publishing, Cincinnati, 2001, pp. 60-65.

Investor Digest Journal, various issues.

Maybank, Annual Reports, 1998 to 2003.

Saunders, Anthony. *Management of Financial Institutions*, Third Edition, McGraw Hill, 2000.