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Financial analysis of financial institutions in an evolving environment

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Abstract

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Disciplines

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Financial Analysis of Financial Institutions in an Evolving Environment

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ABSTRACT

This paper presents a model for the financial analysis of a bank based on the DuPont system of financial analysis. The bank return on equity is decomposed into net profit margin, total asset turnover and the equity multiplier. This model is applied to AFFIN Bank Malaysia of which is one of the largest banks in Malaysia for the period from 1999 to 2005. The DuPont system of financial analysis shows the impact of the Asian financial crisis on the financial performance of AFFIN Bank that affected the region in 1997-98. The impact of the financial crisis on AFFIN Bank share prices is clearly visible.

INTRODUCTION

We can define corporate financial management as the efficient acquisition and allocation of funds. By efficient acquisition of funds, we mean that the firm will acquire funds at the lowest possible cost and by efficient allocation of funds, we mean that the firm will invest funds at the highest possible return. The objective of corporate financial management is to maximize the value of the firm where the value of the firm is the total market capitalization of the firm and is determined by the risk and return characteristics of the firm. The risk and return characteristics of a firm are the result of decisions made by corporate financial managers which decision fall into two categories: investment decisions and financing decisions.

Investment decisions affect the left-hand side of the balance sheet through asset purchases. Investment decisions determine the type of assets used by the firm, the industry in which the firm operates, and the degree of operating leverage of the firm. Financing decisions affect the right-hand side of the balance sheet which shows the financial structure of the firm through security 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. Based the outcome of these decisions, a corporate financial manager can estimate the probability distribution of future cash flows – both the expected value and the standard deviation of the future cash flows. Using the estimates of future cash flows, a decision maker can calculate the value of the firm and analyze the impact of changes in assets and financing have on the value of the firm. Assuming that cash flows are no-growth perpetuities, the value of the firm is the expected cash flow divided by the required rate of return.

Decision makers estimate the probability distribution of future cash flows based on financial accounting information provided by the firm's financial managers. To be useful, accounting information must influence 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, in addition to financial information, 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, that is, 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 and suppliers, bond holders, and stock holders. Each group must decide whether to provide credit, buy bonds, or buy stock, respectively.

Bank managers follow the same model as corporate financial managers, except that the product is different - banks provide lending 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 the banks 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 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.

AFFIN BANK

In 1975, several Malaysian parties got together with Habib Bank Ltd. of Pakistan (HBL) with the idea of creating a bank in Malaysia. In October of the same year, Perwira Habib Bank (PHB) was incorporated, with HBL holding a 33% stake in the new bank. From that point on, PHB

charted its course through the Malaysian financial landscape, as it witnessed the growth of Malaysia. Then in 1992, a capital restructuring exercise was conducted in an effort to reposition PHB in the bank market in Malaysia. The exercise saw Affin Holdings Berhad emerging as the biggest shareholder of PHB.

It was not until April 1994 that PHB became PAB, or Perwira Afffin Bank. This was a reflection of the 100% stake that AFFIN Holdings now has in PAB. This restructuring marked the beginning of a new chapter in the history of PAB. Along with other companies under the AFFIN group, AFFIN now became a complete financial services provider.

On April 5, 1999 Perwira Affin Merchant Bank Berhad (PAMB) announced the signing of memorandum of understanding for the proposed merger between Perwira Affin Bank Berhad and BSN Commercial Bank (M) Berhad. A year later, on August 30, 2000, the agreement for the merger between PAB and BSN Commercial Bank (M) BHD was signed, paving the way for the formation of the new entity AFFIN Bank. AFFIN Bank commenced operations in January 2001 with a network of 110 branches nationwide.

A FINANCIAL ANALYSIS MODEL FOR FINANCIAL INSTITUTIONS

Saunders (2000) provides a model of financial analysis for financial institutions based on the Dupont system of financial analysis return on equity model. 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: assets. The equity multiplier allows the financial analyst to evaluate the right-hand side of the balance sheet: liabilities and owners equity.

Return on equity analysis provides a system for planning as well as analyzing financial institution performance. The profit margin allows the analyst to develop a pro forma income statement. That is, net income is equal to revenues less expenses. Thus, the financial planner can determine the revenue level necessary to achieve the net income target. The total asset turnover ratio allows the analyst to project the total asset level necessary to generate the projected revenue level. The total asset requirement can be used to project the pro forma levels of all of the asset accounts. The fundamental equation of accounting is that assets equal liabilities plus owners equity. Thus, the equity multiplier ratio can be used to project the *pro forma* financial needs and the financial structure of the financial institution.

Return on equity, ROE, is first decomposed into return on asset, ROA, and the equity multiplier, EM. Return on assets is decomposed into net profit margin and total asset turnover:

ROE = (ROA) (EM)
ROA = (NPM) (TAT)
Where,
ROE   =   return on equity   ROA =   return on assets
EM   =   the equity multiplier   NPM =   net profit margin

TAT   =   total asset turnover

Return on equity is net income divided by total equity capital and return on assets is net income divided by total assets. The equity multiplier is the ratio of total assets and total equity capital.

ROE   =   (NI) / (TEC)
ROA   =   (NI) / (TA)
EM   =   (TA) / (TEC)
Where,
NI   =   net income
TA   =   total asset
TEC   =   total equity capital

Net profit margin can be decomposed into both the income and expense components. Total asset turnover can be decomposed into interest and non-interest income components

The net profit margin ratio can be used to develop a *pro forma* income statement. The total asset turnover ratio can be used to estimate the pro forma left-hand side of the balance sheet. The equity multiplier ratio can be used to estimate the pro forma right-hand side of the balance sheet. Thus, the DuPont 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.

Balance Sheet Items

Affin Bank has four major categories of assets – cash, customer loans, securities and fixed/other assets. Cash has fluctuated from RM1.65 billion in 1999 to a low of RM1.27 in 2001 and returned to RM1.50 billion in 2002. The customer loan account has increased from a low of RM9.6 billion in 1999 to the highest RM13.6 billion in 2001 and fell to RM10.1 billion in 2005. Securities and deposits are lowest, at RM3.5 billion, in 1999 and increased steadily to RM6.4 billion in 2003 efore falling to RM4.9 billion in 2004. Fixed assets increased steadily from a low of RM0.26 billion in 1999 to RM0.21 billion in 2003 and RM0.23 in 2004.

Affin Bank has three major liability accounts – corporate and retail deposits, other liabilities and shareholder funds. Corporate and retail deposits increased from RM 12.4 billion in 1999 to the highest RM 15.4 billion in 2002 before falling to RM 13.0 in 2004. Other liabilities increased from RM 1.2 billion in 1999 to RM 4.5 billion in 2003 but decreased to RM 3.5 billion in 2004. Shareholder funds decreased from RM 1.4 billion in 1999 to RM 1.0 billion and increased to RM 1.5 billion in 2004.

Income Statement Items

Affin bank has two major sources of income – interest income, non-interest income and gains, and net income from Islamic banking. Interest income has fluctuated from RM 832 million in 1999 to RM 9313 million in 2002 and fell in 2003 to RM 885 million and fell in 2004 to RM 776 million. Net income from non-interest income and gains decreased from RM 128 million in

1999 to RM 95 million in 2001 and fluctuated during 2002 to 2004 ending at RM 171 million. Net income from Islamic banking increased from RM 28 million in 1999 to RM 83.7 million in 2001 decreased in 2001 and ended the period at RM 73.8 million in 2004.

Affin bank has four expense categories – interest expense, provisions for bad loans, overhead costs, adjustments to owners equity, and income tax and zakat. Interest expense has fluctuated from RM 513 million in 1999 to RM 366 million in 2000 to RM 518 million in 2001 and ending at RM 398 million in 2004. Provision for bad loans increased from RM 153 million in 1999 to RM 826 million in 2001 and decreased in 2002 and 2003 before decreasing to RM 57 million in 2004. Overhead costs increased from RM 232 million in 1999 to RM 432 million in 2001 and decreased to RM 341 million in 2004. Income tax and zakat were negative in every year except 2002 an 2003.

Discussion of Financial Ratios

As a percent of total assets, cash averages 10.7% with a high of 17.5% in 1999 and a low of 6.3% in 2001. Customer loans average 60.2% of total assets with a high of 67.4% in 2001 and a low of 50.6% in 2000. Net securities average 27.6% with a high of 30.9% in 2002 and a low of 23.1% in 1999. Fixed assets average 1.5% with a high of 1.7% in 1999 and 2000 and with a low of 1.3% in 2004.

Corporate and retail deposits average 71.9% with a low of 5.47% in 2004 and with a high of 83.1% in 2000. Other liabilities average 16.2% with a low of 8.1% in 1999 and with a high of 21.3% in 2003. Shareholder funds average 7.3% with a low of 5.1% in 2001 and with a high of 9.6% in 1999.

DuPont Analysis of Affin Bank

Return on equity for Affin Bank for the study period averages -9.3% but with a range from -72% in 2001 to 10.5% in 2004. Net profit margin averages -7.6% with a range of -68.2% in 2003 to 9.2% in 1999. Total asset turnover averages 0.057 times with a range from 0.052 times in 2000 to 0.066 times in 1999. Equity multiplier averages 14.4 times with a range from 10.4 times in 1999 to 19.5 times in 2001.

Return on equity volatility results from significant variability in net profit margin and the equity multiplier. The equity multiplier has increased steadily from 10.44 times in 1999 to 19.5 times in 2001 but decreased to 14.4 times in 2004. Net profit margin fluctuates from the lowest – 68.2% in 2001 to 15.8% n 2004. The most dramatic effect in total asset turnover occurs during the recovery period after the economic crisis in 1997-1998.

Affin bank Malaysia is not listed on Kuala Lumpur Stock Exchange (KLSE), but Affin Holdings began trading in 1996. Figure 6 shows the stock price performance of Affin Holdings share. Affin Holdings stock started to increase from about RM 95 in early 1996 to the highest of almost RM 300 in the middle of 1997, that was during the crisis period. The stock price started to drop to the lowest of almost RM 18 in early 1998. The stock price started to bounce back to RM 128

in early 2000 and decreased to RM 41 in early 2001. Affin Holdings stock price fluctuated but quite stable since early 2001 until December 2003.

SUMMARY AND CONCLUSIONS

This paper presents a model for the financial analysis of a bank based on the DuPont system of financial analysis as presented in Saunders (2000). The bank return on equity is decomposed into net profit margin, total asset turnover and the equity multiplier. This model is applied to AFFIN Bank of Malaysia which is one of the largest banks in Malaysia. The DuPont system of financial analysis shows the impact of the Asian financial crisis on the financial performance of AFFIN that hit the region in 1997-98. The negative impact of the financial crisis is apparent on the AFFIN share prices.

Table 1
Affin Bank Berhad
Financial Statements (RM'000)

Income Statement - Income	1999	2000	2001	2002	2003	2004
Interest income	832175	753342	916970	931291	885031	775798
Non-interest Income and Gains	128640	110242	95140	179095	134518	171167
Net income from Islamic banking	28075	33724	83658	52232	79943	73826
Income statement - Expenses						
Interest Expense	-513041	-365743	-518165	-484287	-446504	-398403
Provisions for bad loans	-152647	-363085	-826301	-242105	-260891	-56984
Overhead	-232363	-268471	-431625	-409493	-385389	-341001
Adjustments to Owners' Equity			-67115	-6645	6645	-44207
Income tax and zakat	-236	-2124	-67	1252	65225	-18465
Net Income	90603	-102115	-747505	21340	78578	161731
Balance Sheet - Assets	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Cash	1649925	1553543	1274752	1498098	3701139	2206070
Customer loans	9636154	9295361	13639197	12365091	10698851	10689274
Securities and deposits	3469827	4524382	5010934	6355135	6440799	4903202
Fixed and other assets	255793	270565	323644	324626	297179	228036
Total assets	15011699	15643851	20248527	20542950	21137968	18026582
Balance Sheet - Liabilities						
Deposits	12359176	13007787	15089250	15391093	15252926	12952948
Other liabilities	1214856	1300512	4122776	3984454	4499597	3526458
Shareholder funds	1437667	1335552	1036501	1167403	1385445	1547176

Total L & S/Holders fund	15011699	15643851	20248527	20542950	21137968	18026582

Table 2
Affin Bank Berhad
Ratio Computations

Balance Sheets Assets	1999	2000	2001	2002	2003	2004
Cash	11.0%	9.9%	6.3%	7.3%	17.5%	12.2%
Customer loans	64.2%	59.4%	67.4%	60.2%	50.6%	59.3%
Securities, net	23.1%	28.9%	24.7%	30.9%	30.5%	27.2%
Fixed and other assets	1.7%	1.7%	1.6%	1.6%	1.4%	1.3%
Total assets	100%	100%	100%	100%	100%	100%

Balance Sheet - Liabilities	1999	2000	2001	2002	2003	2004
Deposits	82.3%	83.1%	74.5%	74.9%	72.2%	71.9%
Other liabilities	8.1%	8.3%	20.4%	19.4%	21.3%	19.6%
Shareholder funds	9.6%	8.5%	5.1%	5.7%	6.6%	8.6%
Total L & S/Holders Fund	100%	100%	100%	100%	100%	100%

Income Statement Items	1999	2000	2001	2002	2003	2004
Interest expense	51.9%	40.8%	47.3%	41.7%	40.6%	39.0%
Provision for loan losses	15.4%	40.5%	75.4%	20.8%	23.7%	5.6%
Staff and overhead	23.5%	29.9%	39.4%	35.2%	35.1%	33.4%
Adjustments to Owners' Equity	0.0%	0.0%	6.1%	0.6%	-0.6%	4.3%
Taxes	0.0%	0.2%	0.0%	-0.1%	-5.9%	1.8%
Profit margin	9.2%	-11.4%	-68.2%	1.8%	7.1%	15.8%
Total - Income Statement	100%	100%	100%	100%	100%	100%

Dupont Ratios	1999	2000	2001	2002	2003	2004
Profit Margin (PM)	0.092	-0.114	-0.682	0.018	0.071	0.158
Asset Utilization (TAT)	0.066	0.057	0.054	0.057	0.052	0.057
Equity Multiplier (EM)	10.442	11.713	19.535	17.597	15.257	11.651
Return on Equity (ROE)	0.063	-0.076	-0.721	0.018	0.057	0.105
Return on equity (ROE)	0.063	-0.076	-0.721	0.018	0.057	0.105

Affin Bank Berhad

Affin Bank Berhad

Affin Bank Berhad

Affin Holdings Stock Price
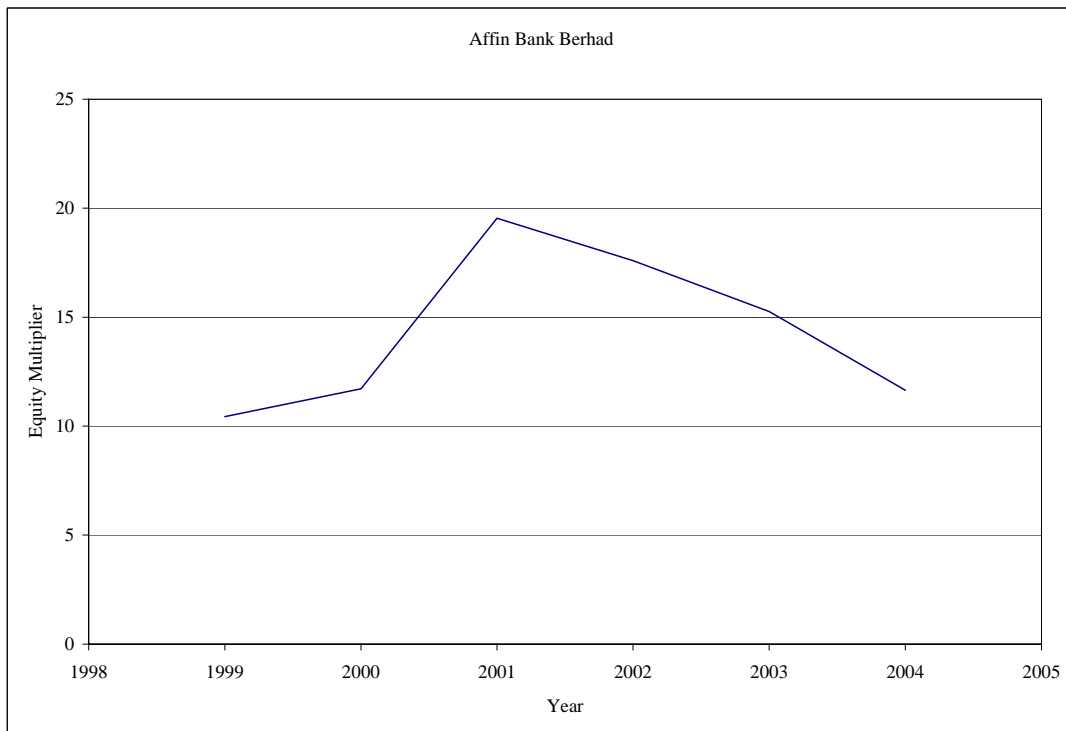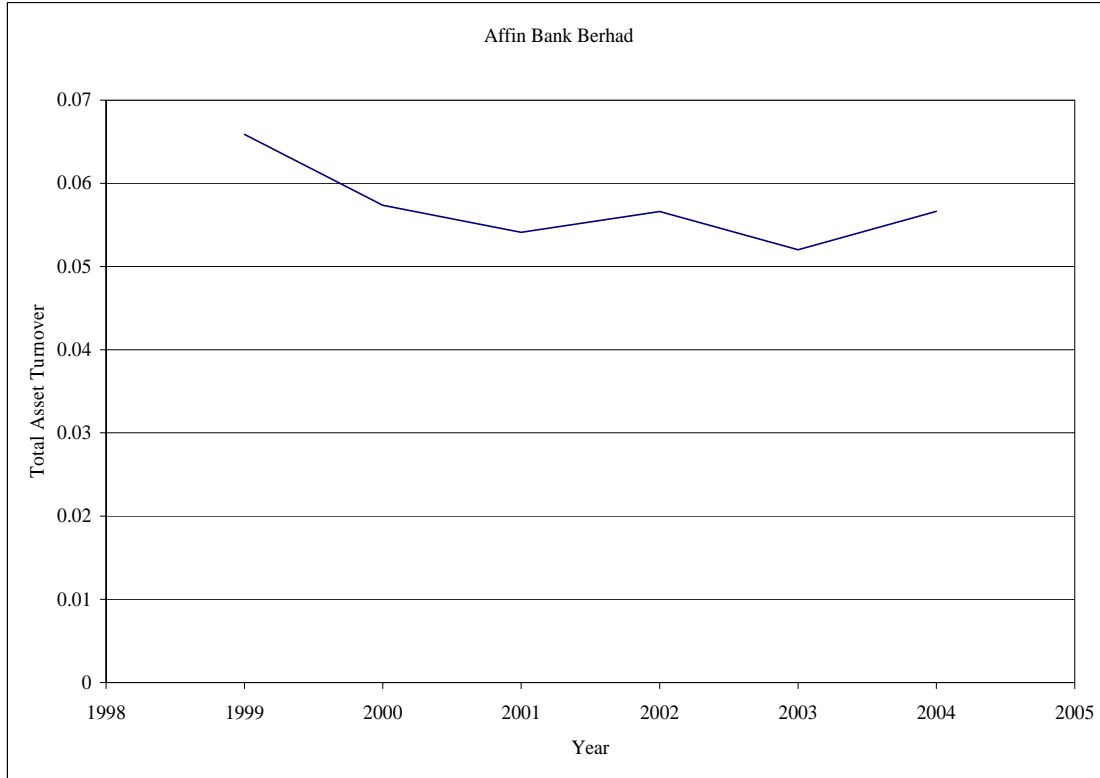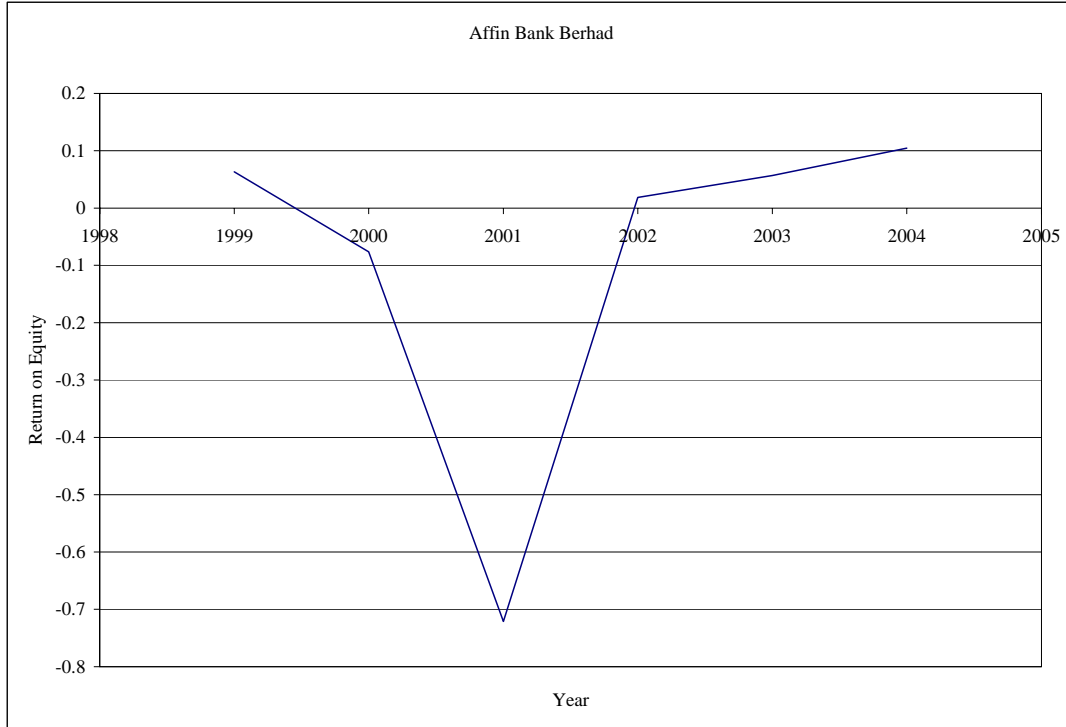
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