Chapter 5

LITERATURE REVIEW

5.1   Introduction

In the last three decades many studies have been undertaken to investigate the determinants of profitability of conventional banks.   These studies have not been confined to national boundaries but have expanded using cross-country data.   In addition to dividing the profitability determinants into two categories, i.e. internal and external, these studies have been able to postulate some profitability theories related to banking.   Among the theories in the bank profitability literature are the structure-conduct-performance theory, the efficient-structure theory, the expense-preference theory, and the risk-aversion theory.

To date there has been no similar research on Islamic banks, and thus there is no literature available for comparative purposes.   Since this study is concerned with the profitability determinants of Islamic banks in various Muslim countries, it is worth exploring the literature of profitability determinants of conventional banks, especially those using international data.   Accordingly, the objective of this chapter is to review the relevant literature as a precursor to testing the applicability of conventional bank profitability theories to the Islamic banking system. Since this study involves international data, it is appropriate for this section to have a separate section dealing specifically with cross-country studies. Such a discussion is covered in Section 5.3.

5.2 Profitability Determinants of Conventional Banks

This section will be divided into the following sub-headings:

1. internal determinants,
2. external determinants.

5.2.1 Internal Determinants

Internal determinants of profitability which are within the control of bank management can be broadly classified into two categories, namely, financial statement variables and non-financial statement variables. While financial statement variables relate to the decisions which directly involve the items in the balance sheet and income statement, non-financial statement variables involve factors that have no direct relation to the financial statements.

5.2.1.1 *Financial Statement Variables*

Financial statement variables are variables which relate to the management of the balance sheet and income statement. The balance sheet management is directly related to assets and liabilities management. Assets and liabilities management or balance sheet management can also be described as comprising a series of techniques whereby, on the one hand, holdings of remunerative assets (loans, advances and investments of various kinds) are funded (or financed) by related (but not necessarily matched) liabilities and, on the other, liabilities may be accepted in advance of commitments and these liabilities subsequently deployed in the acquisition of remunerative assets (Wilson, 1986). Income statement management is directly related to income and expense management or return and cost management. Areas such as managing interest sensitivity and margin, allocation of expenses, and priority

in expenditures are considered to have an impact on a bank's total incomes and expenses. There is an abundance of literature on assets-liabilities management, portfolio management, and managing interest rates and margin (since the focus of this study is on profitability no attempt will be made to review this literature).

Among the researchers who have studied the effect of financial statement variables on bank profitability are Hester and Zoellner (1966), Haslem (1968), Fraser and Rose (1971), Fraser, Philips and Rose (1974), Heggested (1977), Mullineaux (1978), Kwast and Rose (1982), and Smirlock (1985).

Hester and Zoellner (1966) were the pioneers of bank profitability studies. In their work, they measured the relationship between items in the balance sheet and earnings of 300 banks in Kansas City and Connecticut, USA, for a period from 1956 to 1959. They used net current operating income, net profit before income taxes, and net profit after taxes as dependent variables. They found that the changes in portfolio (items in the balance sheet) produced both positive and negative results on bank's earnings. While all asset items had a significant positive relationship, all liability items, which include demand, time and savings deposits, were negatively significant to profits.

Haslem (1968) examined the differential effects of management on commercial bank profitability. Haslem believed that management effects occurred as the results of differences in bank management objectives, policies, decisions, and actions, reflected in the differences in bank operating relationships, including profitability. The operating relationships are represented by 64 operating ratios. These operating ratios belong to four key areas, (i) overall profitability and gross revenue, (ii) fund-use measures (asset-management measures, including 'returns' on the uses), (iii) fund-source measures (deposit and capital measures, including 'costs' of the sources), and (iv) expense measures. Haslem found that, in order to improve profit, the management should first emphasise expense management, then fund-source management and lastly

fund-use management. Haslem also suggested that the following areas are critical and need particular attention.

Gross and net returns on loans, including net losses or recoveries.

Gross and net returns on securities, including the net losses, recoveries, and profits.

Capital ratios (to total assets, risk assets, and deposits).

Interest paid on time and savings deposits.

Proportion of loans to individuals in the loan portfolio.

Proportion of 'other' securities (including tax-exempt bonds) to total assets.

All expense items, individual and conglomerate, but especially salaries and wages.

Fraser and Rose (1971) in their study used loan composition, and total annual wage and salary payments (cost measures) to average assets ratio as independent variables, and regressed them with the index of bank operating performance. Loan composition comprises four separate ratios, i.e. the ratios of (i) commercial and industrial loans, (ii) real estate loans, (iii) consumer loans, and (iv) agricultural loans to total loans. The index of bank operating performance consisted of six ratios, one of which was directly related to profitability (net current earnings to average total capitals). Fraser and Rose found that both loan composition and cost measures had no effect on profitability.

Fraser, et al. (1974) used canonical correlation analysis to measure the relationship between the performance of banks and determinant factors. Among the financial statement variables included in their studies were bank costs, composition of bank deposits and composition of bank credit. They found that the factor which had the biggest influence on bank performance was bank costs, followed by composition of deposits and composition of loans.

Heggested (1977) believed that banks with a high percentage of time and savings deposits incurred high cost and thus had less profit. Heggested used the average of the ratio of net income after taxes to total assets as a proxy for profitability and average ratio of time and savings deposits to total deposits as a proxy for balance sheet management. His findings indicated that the ratio of time and savings deposits had a significant negative relationship with profitability. This supported his claim that banks which were heavily committed to time and savings deposit earned considerably lower returns.

Mullineaux (1978) used a profit-function approach in his study. By definition, the profit function expresses the maximised profit for a firm in a competitive situation as a function of prices of output, variable factor inputs and quantities of the fixed factors of production. The theory of profit function suggests that output prices will have a positive relationship with profit, a negative relationship with input prices and a positive relationship with fixed factors of production. While both prices of output and variable factor inputs are considered financial statement variables, fixed factors of production are non-financial statement variables. Mullineaux used real estate loan rate, consumer instalment loan rate, commercial and agricultural loan rate and safe-deposit rental fee as output price variables, whereas input factor variables consist of officers and employees' wage rate, demand-deposit rate, savings and time deposits rate, certificate deposit rate, and computer hardware rental rate. Mullineaux's findings, however, indicated that output price variables (rates for various types of loans) were negatively significant to profits. In the case of input price variables (expense items) mixed results were obtained.

Kwast and Rose (1982) studied both the relationship between bank earnings and various aspects of bank operating performance, and the relationship between bank

earnings performance and balance sheet structure. They divided their samples into two groups, i.e. high profit banks and low profit banks. Kwast and Rose's (1982) study proved that operating efficiency had nothing to do with profitability. They found that there was no compelling evidence to support the notion that high-profit banks were characterised by greater operating efficiency than low-profit banks.

Smirlock (1985) used the ratio of demand deposits to total deposits as one of the independent variables in his profitability study. His findings indicated that demand deposits had a significant positive relationship with profits.

5.2.1.2 Non-financial Statement Variables

Non-financial statement variables comprise variables that have an indirect relationship with items in the financial statements. The examples of variables within this category are number of branches, status of the branch (e.g., limited or full-service branch, unit branch or multiple branches), location and size of the bank. Number of branches, status of branches, and location are considered controllable variables when decisions on those matters are within the discretion of management. In the case of a decision to establish new branches or services available where the locality is restricted by regulations, these variables are considered external to the bank. Similarly with the size of the bank. Some researchers (Short, 1979 and Bourke, 1989) therefore considered size as an external variable.

Hester and Zoellner (1966) included number of branches as one of the independent variables in their profitability study. They found that number of branches had no effect on profitability. Emery (1971) studied the relationship between the status of the branch and profitability. He divided his sample into three categories, unit branch, limited branch and statewide branch. Using analysis of variance, Emery found that there was a significant difference in terms of return among these three categories of

branches. Vernon (1971) included location as one of the profitability determinants in his study and found that location had a significant relationship with profitability. Kwast and Rose (1982) also included location as one of the independent variables. The findings of Kwast and Rose revealed that location had a significant relationship with profitability, and their results confirmed the finding of Vernon (1971) (further explanation will be given under the sub-heading of 'Regulation').

The size of a bank is considered an internal determinant on the assumption that management of the bank is responsible for expanding their organisation by acquiring additional assets and liabilities. The size of a bank is also associated with the concept of economies of scale. Economic theory suggests that if an industry is subject to economies of scale, larger institutions would be more efficient and could provide services at a lower cost, *ceteris paribus*. Since large banks are assumed to enjoy economies of scale, they are able to produce their outputs or services more cheaply and efficiently than can smaller banks. As a result, large banks will earn higher rates of profit if entry is restricted. Although much work has been done on the existence of economies of scale in banking, not too many researchers have worked on economies of scale with respect to bank profitability. Koch (1974) believed that economies-of-scale studies are actually not profitability studies because they strictly relate unit costs to output levels, whereas profitability studies relate firm size to firm profit rates.

The study which measured empirically the existence of the economies of scale in banking was pioneered by Alhadeff (1954). Since then, researchers in banking not only compared the existing economies of scale between various types of banks but also banks within various localities. Among these are studies by Schweiger and McGee (1961), Gramley (1962), Horvitz (1963), Benston (1965), Greenbaum (1967), Bell and Murphy (1967), Benston (1972), Longbrake and Haslem (1975), Mullineaux (1975), Benston et al. (1982), Clark (1984), Gilligan et al. (1984), Gilligan and Smirlock (1984), Smirlock (1985), Nelson (1985), Buono and Eakin (1990), and

Noulas et al. (1990). Studies which involved data outside the United States were conducted by Murray and White (1980, 1983), Crapp (1987), and Zardkoohi and Kolari (1994). The findings of these studies were mixed; some studies found supporting evidence and others rejected the existence of economies-of-scale theory in the banking industry. Since these studies only investigated economies of scale and did not link it to profitability, these studies will not be discussed in detail.

Emery (1971) and Vernon (1971) were among the earliest researchers who linked bank size with profitability. Emery (1971) divided his samples into five categories and found that the larger banks were able to capture a greater amount of returns. Using analysis of variance, Emery (1971) found that the size effect was statistically significant to profitability among the various categories of banks. Vernon (1971) used total assets as a proxy for size and found that there was no significant relationship between size and profitability. Heggested (1977) believed that any differences resulting from scale of economies or differing product mixes for banks of different size would be captured by the size of the deposit held by the banks. Using 238 independent banks operating in medium-sized metropolitan areas, Heggested also found that bank size had no apparent effect on bank profitability.

Mullineaux (1978) was the first researcher who linked bank size with both profitability and efficiency. He found that size had a significant relationship with profitability and bigger banks were more profitable than smaller banks. He also found that unit banks were more profitable than branch banking. Kwast and Rose (1982) also used total assets as one of the independent variables in their profitability study. They divided their samples into two categories, high-profit banks and low-profit banks, and found that total assets had no significant impact on profitability for both categories of banks. Smirlock (1985) also used total assets as one of the independent variables in his study. He believed that large banks were likely to have greater product and loan diversification. This increased diversification implies less risk and

hence a lower required rate of return. Smirlock's finding indicated that total assets had no significant relationship with profitability, thus confirming Kwast and Rose's (1982) findings.

Molyneux et al. (1994), who examined the competitive conditions of European banking for a four-year period from 1986 to 1989, also included bank assets as an independent variable. The countries included in their study were Germany, UK, France, Italy and Spain. The regression results, however, were inconsistent, not only from one country to another but within countries on a time-series basis. In general, internal determinants of bank profitability are important and contribute significantly towards the profitability of commercial banks. The summary of the findings of research in these areas is given in Table 5.1.

Table 5.1
Summary of the Profitability Studies Which Used Internal Determinants.

Author(s)	Determinants	Profitability Measures	Effects on Profitability
Financial Statements:			
Hester and Zoellner(1966)	All items in balance sheets	a. Net current operating income b. Net profit before taxes c. Net profit after taxes	Assets items had a significant positive relationship and negative significant relationship for liability items
Haslem(1968)	64 operating ratios from these four key areas: a. Overall profitability b. Fund-use management c. Fund-source management d. Expense management	Value of means of the selected ratios	Management aspect is important and focus should be given to expense management
Fraser and Rose (1971)	a. Loan composition b. Staff expenses	Net current earnings to average total capital	No effect on profitability
Fraser, Philips, and Rose (1974)	a. Bank costs (staff) b. Composition of deposits c. Composition of bank credit	Five performance indexes	All factors were highly correlated and costs had the biggest influence, followed by the composition of deposits and bank credit
Heggested (1977)	Time and savings deposits to total assets	Net income after taxes to total assets	A significant negative relationship
Mullineaux(1978)	a. Rates for various types of loans (output prices) b. Rates for various types of expenses (input prices)	Operating revenue less operating expenses	Output prices had a negatively significant relationship to profit and mixed results for input prices
Kwast and Rose (1982)	Items in balance sheet	a. Total incomes b. Net operating income c. Net income	No effect on profitability
Smirlock(1985)	Demand deposits to total assets	a. Return on total assets b. Return on total capital c. Return on equity	Significant positive relationship with all profitability measures
Non-Financial Statements			
Hester and Zoellner(1966)	Number of branches	a. Net current operating income b. Net profit before taxes c. Net profit after taxes	No effect on profitability
Emery (1971)	Location and size	Annual rate of return	A significant relationship with profitability for both variables
Vernon (1971)	Location and size	Average rate of return after taxes on average invested capital	Location had a significant relationship but size had no effect on profitability
Kwast and Rose(1982)	Location and size	a. Total incomes b. Net operating income c. Net income	Both variables had no effect on profitability
Heggested (1977)	Size	Net income after taxes to total assets	No effect on profitability
Mullineaux (1978)	Size	Operating revenue less operating expenses	A significant relationship with profitability
Smirlock (1985)	Size	a. Return on total assets b. Return on total capital c. Return on equity	No effect on profitability

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5.2.2 External Determinants

Several external factors have been suggested as impacting on profitability, as follows:

i.   Regulation,

ii.   Competition,

iii.   Concentration,

iv.   Market share,

v.   Ownership,

vi.   Scarcity of capital,

vii.   Inflation.

5.2.2.1 Regulation

The banking industry is among the most heavily regulated industries. Theoretically, regulations in banking are based on standard propositions in the theory of price, i.e. (i) a maximising monopolist restricts output and raises price, and (ii) in an industry subject to economies of scale, profit-maximising behaviour eliminates independent firms until only a monopolist remains. There are, however, other important reasons why regulations have been imposed on the banking industry. Firstly, regulation is designed to maintain bank soundness. Public confidence in the strength of a particular bank and the soundness of the overall banking system is believed to be critical to the economy. Secondly, it is to achieve an efficient intermediation process, and finally to provide desired levels of specific bank products or services. To achieve these goals, regulations are imposed on both bank management and the banking system. Direct regulations on bank management basically cover the lending policy, deposit policy,

interest rates, and liquidity requirements. Regulations on the banking system include the condition of entry, establishment of new ventures, mergers and acquisitions.

However, the effect of regulation on bank profitability is not widely discussed by most researchers. Gilbert (1984) in his survey of bank market structure literature found that many researchers failed to recognise regulation as one of the bank profitability determinants. For example, several studies (Fraser and Rose, 1972; Fraser and Alvis, 1975; Rose and Fraser, 1976; and Rhoades, 1979) found that market concentration had no effect on the interest rate paid on time and saving deposits but offer no explanation, and Gilbert (1984) believed that the results were caused by the Regulation Q (the USA Federal Reserve's regulation that sets interest rate ceilings payable on deposits. The regulation, however, has been used collectively to refer to the interest rate ceiling regardless of the regulatory agency imposing them. The Monetary Act of 1980 called for the phasing out of these regulations by 1986).

In fact, the potential for adverse effects on bank profitability of an increased interest rate variability was noted long ago by Samuelson (1945). This comment was also made by Bierwag and Kaufman (1977). Flannery (1981) studied the impact of the regulation which caused the changes in interest rate on commercial bank profitability and found that intra-period rate variability had no significant effect on bank revenues or costs. Hancock's (1985) finding, however, supported the study conducted by Samuelson (1945) which showed that profits of the banks increased with the rise of the interest rate.

Fraser and Rose (1972$_b$) studied whether the opening of new branches in New York State by commercial banks, mutual savings banks, and savings and loan associations had significantly adverse effects on the growth and profitability of competing institutions. They found that, despite some evidence of slowing in the growth rate of deposits, the profitability of existing institutions was not adversely affected by the

opening of new branches by their competitors. Fraser and Rose's (1972$_b$) finding, however, was not shared by McCall and Peterson (1977). McCall and Peterson (1977) examined the impact of *de novo* bank entry in isolated markets served by one, two or three banks, markets in which the potential benefits, as well as costs of entry, would appear to be greatest. They found that *de novo* unit-bank entry into rural, non-metropolitan, monopoly or oligopoly markets in restrictive branching states has a significant impact on profitability. Similarly, Mullineaux (1978) studied the differences in profitability between banks of only-bank holding companies (OBHC) and banks of multi-bank holding companies (MBHC). He found that OBHC banks were more profitable that their counterparts.

The findings of McCall and Peterson (1977) and Mullineaux (1978) actually confirmed earlier studies conducted by Vernon (1971) and Emery (1971). Vernon (1971) examined the effects of regulation on performance by examining the profitability of 85 large commercial banks which operate in two environments, i.e. states which permit banks to have branches and states which prohibit branching. He found that banks which operate in states in which branching was permitted were more profitable than those which operate in the other environment. Similarly, Emery (1971) examined the returns received by banks in various states whose statutes either permit or prohibit branching. He found that a significant difference in mean income exists among statewide-branch, limited-branch and unit banks. A similar approach was used by Smirlock (1985) and his findings also confirmed Vernon's and Emery's findings.

5.2.2.2 Competition

Traditional economic theory suggests that a new entrant will increase rivalry in the market. Although competition is considered as one of the determinants of bank profitability, this area is not fully covered by the literature. As Bourke (1989)

remarked, "like the elephant, competition is difficult to describe but you know one when you see one." The impact of competition is normally discussed by researchers from the angle of regulations or market structure. Philips (1964) believed that public regulation, private organisation and institutional market characteristics made the performance of the industry insensitive to differences in market structure and made competition difficult to observe. He identified low failure rates as one aspect of lack of competition in addition to discriminatory pricing policies.

Emery (1971) was among the first researchers who measured the effects of competition on bank profitability by using entry to the market as a proxy for competition. Entry was measured by the percentage increase or decrease in the number of commercial banking firms between 1962 and 1968 and Emery's findings were that it had no significant impact on profits.

Heggestad and Mingo (1976) believed that market structure influenced the bank's desire to compete for customers. When the degree of monopoly in a market is greater, they believed that bank prices will be higher and fewer facilities will be provided by the bank. They tested the relationship between concentration and eleven performance measures. These performance measures include facilities available to customers and charges for using those facilities. Heggested and Mingo (1976) found that eight of the 11 performance measures are significantly affected by at least one specification of concentration. This indicated that the market power of an individual bank increases with the degree of monopoly and its market by its size relative to the market. The greater the market share, the greater will be its control over its prices and the services it offers.

5.2.2.3 Concentration

Concentration is defined as the number and size of the distribution of firms in the market. The term 'concentration' emerged from the structure-conduct-performance theory (SCP theory) which is based on the proposition that market concentration fosters collusion among firms in the market. The assumption of this theory is that the degree of concentration of a market exerts a direct influence on the degree of competition among its firms. Highly concentrated markets will lower the cost of collusion and foster tacit and/or explicit collusion on the part of firms. As a result of this collusion, all firms in the market earn monopoly incomes (or monopoly rents). This theory was first used by researchers using manufacturing-firm data. The first empirical study relating return and concentration was published by Bain (1951) and SCP studies gained popularity among researchers in banking studies in the 1960s.

The two most widely used concentration measures are the concentration ratio and the Herfindahl Index. The concentration ratio (C) measures the sum of the shares of the top n firms, that is,

$$C = \sum_{i=1}^{n} P_i$$

where P_i is the market share of firm i. All the firms included in the measure are treated equally; in other words, they are all given a weight of one. The choice of n is rather arbitrary and in fact is dictated by the availability of information. Therefore, 'one-bank concentration ratio' means the amount of market share belonging to one particular bank (usually the biggest bank in the market) selected as a sample in measuring the market-power of that particular bank. Similarly, 'two-bank concentration ratio' means the total market shares of two banks in the market.

The Herfindahl index or H concentration measure (so designated because it was independently devised by Herfindahl and Hirshmann) is one of a number of summary concentration indices that take into account all the firms in an industry. It can be defined as:

$$H = \sum_{i=1}^{n} P_i^2$$

where P_i is the share of the i th firm and n is the total number of firms in the industry. The maximum value of the index equals 1 and occurs where there is only one firm. The minimum value (where firms are of equal size) depends on the number of firms and is the reciprocal of n. Thus, when $n = 100$, the value of the index = 0.01.

In banking, the concentration ratio was first used to measure the effect of concentration on performance among banks in local market areas. The variables in measuring performance include bank profit rates, interest rate charges on loans, and interest rates they pay on deposits. Among the pioneer researchers who measured the effect of concentrations on interest rates were Schweiger and McGee (1961), Edwards (1964), Holland (1964), Edwards (1965), Flechsig (1965), Kaufman (1966), Meyer (1967), Philips (1967), Brucker (1970), and Aspinwell (1970). Researchers who studied the effect of concentration on deposit services were Edwards (1965), Kaufman (1966), Weiss (1969), and Bell and Murphy (1966).

Schweiger and McGee (1961), Edwards (1964), Holland (1964), Edwards (1965), Flechsig (1965), Kaufman (1966), Meyer (1967), Philips (1967) and Brucker (1970) studied the effect of concentration on gross interest rates on business loans, and found that the greater the concentration ratio in a market and/or the smaller the number of

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banks, the higher the average rate charged on loans. Although the findings support the SCP theory, there are some limitations. As stated by Benston (1973), most of these studies have serious conceptual and statistical shortcomings which means the results are of limited value.

The effects of concentration on the banking structure were further explored by many researchers in the 1970s and the 1980s. Heggested (1979), in his survey of 44 studies from 1961-1976, found that concentration had either a significant or small effect on dependent variables such as profitability, loan rates, deposit rates, and the number of bank offices in only 26 of the studies. Similarly, Gilbert (1984) summarised the response of the bank performance measures to a change in market concentration and found that in only 27 of the 56 studies reviewed does concentration significantly affect performance in the predicted direction.

Among researchers who studies the effect of concentration on profitability are Emery (1971), Fraser and Rose (1971), Vernon (1971), Heggested (1977), Kwast and Rose (1982), and Smirlock (1985). Emery (1971) used total bank assets possessed by the five largest banks in the state as a measure for concentration. He found that the concentration had no effect on profitability. Fraser and Rose (1971) studied the structure and performance of banks in Texas. They used both the percentage of total deposits held by the largest bank in the city, and the number of banks in the community as proxies to concentration. The findings indicated that concentration had a small effect on profitability. Vernon's (1971) study, however, indicated that concentration had an adverse significant impact on profitability. Heggested (1977) examined the effects of concentration on the bank's profit and on risk-adjusted profits. Using a three-bank concentration ratio of total deposits in the bank's market, he found that the concentration has a significant relationship with both profits and risk-adjusted profits but with a greater coefficient value on the latter.

Kwast and Rose (1982) divided their samples into two categories, high profit banks and low profit banks, and used the H Index as a measure for concentration. They found that concentration had a significant relationship with both high and low profit banks. Smirlock (1985) used a three-bank deposit concentration ratio in his study and found that concentration did not have a significant relationship with profitability when market share was included in the equation. Without market share, the finding indicated that concentration did have a significant relationship with profitability.

5.2.2.4 Market Share

Market share is considered as one of the determinants of profitability since the bigger the market, the larger the firm's potential profits. Bigger market share also means more power to the bank in controlling the prices and services it offers to customers (Heggested and Mingo, 1976). Heggested (1977) believed that the net effect of growth in the market on profitability could be negative or positive. Increase in demand would push prices higher and at the same time would affect bank costs. Heggested (1977) found a weak adverse relationship between market growth and profitability. Similar results were produced on equations that took a risk factor into consideration. He believed that the weak inverse relationship, due to the effect of market growth on costs, was much stronger that the effect on the prices of bank services.

Smirlock (1985) strongly believed that instead of concentration, market share was more dominant in influencing banks' profitability. He investigated 2,700 unit banks and found that market share had a significant relationship with profitability and not concentration. Smirlock (1985) not only believed that market share influenced profitability but growth in the market created more opportunities for the bank, thus generating more profits. He also found that growth in the market had a significant relationship with profits.

5.2.2.5 Ownership

The effect of ownership on bank profitability is not fully discussed in the literature. The first attempt to differentiate the performance related to ownership was made by Vernon (1971). In his study, Vernon examined the performance of management-controlled banks and owner-controlled banks. He found that owner-controlled banks did not realise a higher rate of return on invested capital relative to management-controlled banks. Mullineaux (1978) divided his sample into two, only-bank holding company banks (the company owned one-branch bank only) and multi-bank holding company banks. He found that only-bank holding company banks were more profitable than their counterpart.

5.2.2.6 Scarcity of Capital and Inflation

Since the usage of scarcity of capital and inflation as determinants of profitability was introduced by researchers who used international data, the review of literature on these areas will be covered under the sub-heading "International Comparative Studies".

The summary of the findings of research using external determinant variables is given in Table 5.2.

Table 5.2
Summary of the Profitability Studies Which Used External Determinants.

Author(s)	Determinants	Profitability Measures	Effects on Profitability
Regulation			
Emery (1971)	Branching	Annual rate of return	A significant difference in mean income among branches of various status
Vernon (1971)	Branching	Average rate of return after taxes on average invested capital	Profit were higher for banks which were permitted by statute to branch
Fraser and Rose (1972b)	Changes in branching law	a. Net current earnings to total capital b. Net current earnings to total assets	The profitability of existing institutions was not adversely affected by the opening of new branches by other institutions
McCall and Peterson (1977)	Changes in branching law	a. Net current earnings to total capital b. Net current earnings to total assets c. Net income to total assets d. Net income to total capital	One unit-bank entry into rural, non-metropolitan, monopoly or oligopoly markets in restrictive branching states has a significant negative impact on profitability
Mullineaux (1978)	Status of branch	Operating revenue less operating expenses	Only-branch banks were more profitable than multi-branch banks
Flannery (1981)	Changes in interest rate	Net current operating earnings	No effect on earnings
Hancock (1985)	Changes in interest rate	Net revenue less expenses	Profit and interest rate positively correlated
Smirlock (1985)	Status of branch	a. Return on total assets b. Return on total capital c. Return on equity	Unit bank is less profitable than statewide banks
Competition			
Emery (1971)	Market entry	Annual rate of return	No significant impact on profitability
Heggested and Mingo (1976)	Market structure	Eleven performance measures	Market power of individual bank increases with the degree of monopoly
Concentration			
Emery (1971)	Total assets of 5 largest banks	Annual rate of return	No effect on profitability
Vernon (1971)	Total deposits of 3 largest banks	Average rate of return after taxes on average invested capital	Adverse significant impact on profitability
Heggested (1977)	Total deposits of 3 largest banks	Average of the ratios of net income after taxes to total assets	A significant positive relationship
Kwast and Rose (1982)	H index	a. Total income b. Net operating income c. Net income	A significant positive relationship
Smirlock (1985)	3-banks deposit concentration	a. Return on total assets b. Return on total capital c. Return on equity	No effect when market share is included in the equation. Without market share it has significant positive relationship with profitability
Market share			
Heggested (1977)	Growth in bank's retail sales	Average of the ratios of net income after taxes to total assets	Insignificant negative relationship
Smirlock (1985)	a. Bank's deposit over total market deposits b. Growth in deposits	a. Return on total assets b. Return on total capital c. Return on equity	A Significant positive relation-ship with profit-ability
Ownership			
Vernon(1971)	Management controlled vs. Owner controlled banks	Average rate of return after taxes on average invested capital	Management controlled banks are more profitable than owner-controlled
Mullineaux (1978)	Only-banks vs. Multi-banks	Operating revenue less operating expenses	Only-banks are more profitable than multi-banks

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5.3 Theories Related to Bank Profitability

This section will focus on the theories related to a bank's profitability that have been developed over the years by researchers in banking. The traditional theory of the firm assumes that a firm's objective is simply to maximise profits, and on the basis of this assumption a large number of testable predictions about how profit-maximising firms will behave, and the resultant performance of the industry, can be derived. The assumption of profit maximisation, however. is criticised on two grounds. Firstly, this assumption may appear to be simple and unambiguously objective in theory, but it is not so in practice. This theory is only applicable for owner-managed firms with only one product. The owner-manager is equipped with all the information and is free to choose the level of output and price that would maximise his profits. This assumption is not applicable for an industry which is involved in a variety of products, and is faced with much more complex decisions to be taken in a dynamic and uncertain environment. Secondly, today's firms are not managed by their owners. The decisions about how the firm should behave are taken by managers, who may be interested in motives other than profits.

In banking, the following theories are most widely discussed by profitability studies literature:

    a.   Structure-Conduct-Performance Theory (SCP-theory)

    b.   Efficient-Structure Theory

    c.   Expense-Preference Theory

    d.   Risk-Aversion Theory

5.3.1 Structure-Conduct-Performance Theory

This theory postulates that conduct or rivalry in a market is determined by market structure conditions, especially the number and size distribution of firms and the condition of entry. This rivalry leads to unique levels of prices, profits and other aspects of market performance. Through the linkage of conduct, the performance of firms in a market is tied to the structure of the market.

The assumption of this theory is that the degree of concentration of a market, i.e. the number and size distribution of firms in the market, exerts a direct influence on the degree of competition among its firms. Highly concentrated markets will lower the cost of collusion and foster tacit and/or explicit collusion on the part of firms. As a result of this collusion, all firms in the market earn monopoly income. This theory was first used by researchers using manufacturing-firm data and gained popularity among banking researchers during the 1960s. Weiss (1974) made a comprehensive review of SCP literature for the manufacturing industry. His study involved 46 research works, starting with the work of Bain (1951) and finishing with Uekusa (1973). Almost all studies confirmed a positive relationship between concentration and profitability.

In banking, the SCP relationship was first used to measure concentration and performance which was represented by the amount of deposits of banks in local market areas. Other proxies for performance include bank profit rates, interest rate charges on loans, and interest rates paid on deposits. The effects of concentration on bank profitability started receiving attention from researchers in banking studies in the 1970s. Both the concentration ratio and the Herfindahl Index were used but unfortunately there was no consistency in the findings.

5.3.2 Efficient-Structure Theory

This theory was introduced by Demsetz (1973) and expanded by Peltzman (1977). According to Demsetz, profits do not arise because firms create 'artificial scarcity' through a reduction of output. Nor does profit arise because of collusion as in SCP theory. Superior performance or high profit can be attributed to the combination of great uncertainty plus luck or a typical insight of the management of a firm. Firms with a competitive advantage become large and obtain a market share and as a consequence earn more profit. Even though the profits that arise from the firm's activities may be eroded by competitive imitation, since information is costly to obtain and techniques are difficult to duplicate, Demsetz believed that the firm may enjoy growth and a superior rate of return for some time. This theory was first applied in banking by Smirlock (1985) and labelled it as efficient-structure-theory. In his study, Smirlock (1985) found that market share rather than concentration had a significant and positive impact on bank profit rates.

5.3.3 Expense-Preference Theory

In contrast to profit-maximising policy, this theory envisaged the firm as a utility maximising unit through the pursuit of non-profit-maximising policies. In particular, the manager increased staff expenditures, managerial emoluments and discretionary profit for which they have a positive preference. This theory was introduced by Becker (1957), further developed by Williamson (1963), and first used in banking by Edwards (1977). In his study, Edwards (1977) found that wage and salary expenditures in banking increased with monopoly power and this indicated the existence of expense-preference behaviour. Edwards' findings were confirmed by Hannan (1979) and Hannan and Mavinga (1980), who found that the number of employees in banks operating in markets exhibiting monopoly power was higher than the number of employees in banks in competitive markets. Smirlock and Marshall

(1983), however, argued against these findings and claimed that any ostensible deviation from profit maximisation is because of the costs involved in an organisational structure that separates ownership from management and requires hierarchy.

5.3.4 Risk-Aversion Theory

The risk-aversion hypothesis was first introduced in the manufacturing industry by Galbraith (1967) and expanded by Cave (1970). The Galbraith-Cave hypothesis posits that uncertainty avoidance by large firms varies directly with the degree of market power that these firms possess. Edwards and Heggested (1973) tested this hypothesis in banking and believed that banks with monopoly power may choose to forgo some of their potential profits by choosing safer portfolios than banks in more competitive markets. The findings of Edwards and Heggested (1973) supported the hypothesis that the degree of uncertainty avoidance in banks increases with their monopoly power. As firms gain monopoly power they may become more risk-averse. Heggested (1977) expanded this theory by introducing the impact on risk in his study and found that risk was an important determinant of bank profits. The introduction of risk had increased both the coefficient and the level of significant concentration, demonstrating that banks with monopoly power were trading off some of their potential profits for less risk.

5.4 International Studies

The study of bank profitability using international data was pioneered by Short (1979). Since then only three other major studies have been conducted. These were by Bourke (1989), Molyneux and Thornton (1992), and Steinherr and Huveneers (1994).

Short (1989) examined the relationship between concentration and the profit rates of 60 banks in Canada, Western Europe, and Japan. The profit rates of the banks were measured by the annual average ratio for the years 1972 to 1974 of after-tax to total shareholders' funds including retained earnings and general reserves. Concentration was measured country by country in terms of deposits at the end of 1973 by the H concentration index, its inverse and concentration ratio.

Beside measuring the effects of concentration on profitability, Short had introduced additional variables which he classified into two categories: those that were unique to each country and those that were unique to each bank. Capital scarcity was considered one of the variables unique to each country and Short believed that both a central bank discount rate and an interest rate on long-term government securities were the genuine proxies for this variable. Higher rates for central bank discount rates and long-term government security rates mean higher profitability for commercial banks as this was a signal for commercial banks to increase their lending rates.

Unique to each bank were variables comprising bank ownership, leverage, bank size, and growth of assets. Short believed that due to government policy, government-owned banks may not be a profit maximiser. In the case of leverage, those banks having relatively the same rate of returns on assets have the highest leverage and would have the highest rate of return on equity. Banks usually want to maximise leverage in order to maximise profits. Short used bank size as a proxy for economies of scale and growth of assets was included with the thought that some banks might

sacrifice profits to grow faster in order to earn higher profits in the future as a result of increasing their market share, or alternatively to gratify managers. Table 5.3 is the summary of regression resulting from Short's study.

Although Short mentioned that both bank size and leverage were unique to each bank's variables, his results did not indicate the figures for these two variables. Based on the figures given in Table 5.3, government ownership and growth of assets are adversely significant with profit which means Short's perceptions on the effects of these variables are true. Variables which measure the effect of concentration also have a significant relationship, thus supporting the view that greater market power leads to higher bank profit rates.

Table 5.3
The Relation Between Bank Profit Rates and Profitability Determinants of Short's (1979) Study

	Constant	G	H	1/H	3BCR	2BCR	1BCR	DR	LR	RGA	R^2
1.	2.88507 (0.99850)	-2.26307 (0.99999)	10.55727 (0.99640)	-	-	-	-	1.03569 (>0.99999)	-	-0.10024 (0.99788)	0.66258
2.	2.52348 (0.96378)	-2.33599 (0.99990)	7.78083 (0.93352)	-	-	-	-	-	0.67927 (>0.99999)	-	0.50300
3.	5.12904 (>0.99999)	-2.56129 (>0.99999)	-	-0.05739 (0.98808)	-	-	-	0.94179 (>0.99999)	-	-0.08549 (0.99103)	0.64899
4.	4.71981 (0.99939)	-2.65128 (0.99998)	-	-0.06234 (0.98190)	-	-	-	-	0.62138 (>0.99999)	-	0.52246
5.	2.46934 (0.99211)	-2.29772 (0.99999)	-	-	0.03475 (0.99827)	-	-	0.98517 (>0.99999)	-	-0.08854 (0.99466)	0.67074
6.	2.04139 (0.91103)	-2.36106 (0.99994)	-	-	0.03249 (0.98754)	-	-	-	0.653333 (>0.99999)	-	0.52809
7.	2.65215 (0.99623)	-2.34426 (>0.99999)	-	-	-	0.04680 (0.99793)	-	0.96069 (.99999)	-	-0.08699 (0.99371)	0.66879
8.	2.17001 (0.93484)	-2.40972 (0.99999)	-	-	-	0.04623 (0.99075)	-	-	0.63441 (>0.99999)	-	0.53258
9.	2.89183 (0.99843)	-2.38957 (0.99999)	-	-	-	-	0.07792 (0.99527)	0.95020 (>0.99999)	-	-0.08838 (0.99382)	0.65951
10.	2.34881 (0.95490)	-2.46099 (0.99996)	-	-	-	-	0.07936 (0.98654)	-	0.62572 (>0.99999)	-	0.52693

Notes:

The significance level of the t-tests is in parentheses and ' > ' signifies greater than

G   : dummy variable for government ownership, equal to one when a bank is owned by the government and zero otherwise

H   : H index, and 1/H is an inverse of H index

DR   : central bank discount rate, in per cent

LR   : long-term government bond rate, in per cent

RGA : rate of growth of assets, in per cent

3BCR : three-bank concentration ratio, in per cent; 2BCR is for two-bank, and 1BCR is for one-bank concentration ratio

Bourke (1989) used annual financial statements of 90 banks from 1972 to 1981 for 12 countries and territories, namely, Australia, California, Massachusetts, New York, Canada, Ireland, England and Wales, Belgium, Holland, Denmark, Norway and Spain. He made a few new contributions to the study of profitability. Bourke was the first researcher who empirically tested Revel's opinion about inflation. Revell (1980), in his costs and margins in banking study, believed that inflation was the single all-pervasive cause behind nearly all factors causing pressures to widen margins. According to Revell (1980), inflation affected banks through a number of different routes, such as interest rates and asset prices, exchange rates, operating costs, needs of customers, and general environment. Revell did not clearly specify the effects of inflation on profitability, and Bourke (1989) was the first to examine them in detail. The consumer price index was used by Bourke as a proxy for inflation.

Bourke's second contribution was the introduction of two value-added measures as dependent variables in his profitability model. These value-added measures were introduced by Bourke for the purpose of testing for the existence of some profitability theories in banking. First, he used net income before tax + staff expenses ratio to test the existence of an expense-preference theory. Second, he used net income before tax + staff expenses + loan losses ratio to test the existence of a risk-aversion theory. Bourke's dependent and independent variables were as follows:

Dependent variables:

BTCR   : Net profit before tax as a percentage of capital and reserves,

ATCR   : Net profit after tax as a percentage of capital and reserves,

BTCRTB   : Net profit before tax as a percentage of capital and reserves + total borrowing,

BTTA   : Net profit before tax as a percentage of total assets,

BTSETA   : Net profit before tax + staff expenses as a percentage of total assets,

BTSEPLTA   : Net profit before tax + staff expenses + provision for loan losses as a percentage of total assets.

Independent variables:

GOVT   : A dummy variable representing government ownership, 1 - when a bank is owned by a government, national or provincial; zero - otherwise,

CONC   : Three bank concentration ratio,

INT   : The long-term bond rate for each country for each year (IMF),

MON   : Growth in money supply for each country for each year (IMF),

CRTA   : Capital and reserves as a percentage of total assets,

CBINVTA   : Cash and bank deposits + investment securities as a percentage of total assets,

CPI   : Percentage increase in consumer price index for each country for each year (IMF),

SE   : Staff expenses as a percentage of total assets.

Although Bourke's methodology was quite similar to Short's, instead of focusing on net profit after tax as a percentage of capital and reserves, he concentrated his attention on the effects of independent variables on net profit before tax as a percentage of total assets. The usage of net profit after tax as a dependent variable was limited to a single equation which included GOVT, CONC and INT as independent variables (equation 4 in Table 5.4). Among Short's variables used by Bourke for his study were government ownership, concentration ratio, capital scarcity, and market growth. Bourke, however, made some changes by using different measurements. For example, he used only a three-bank concentration ratio to measure the effects of concentration, whereas Short used an H index and three other concentration ratios. Long-term bond rate was used by Bourke but Short used a

central bank discount rate and long-term government bond rate. To measure the market growth, Short used the growth of assets, but Bourke used the growth in money supply (no explanation was given by Bourke as to why he chose money supply as a proxy for market growth).

The new independent variables introduced by Bourke were CRTA (capital and reserves as percentage of total assets), CBINVTA (cash and bank deposits + investment securities as percentage of total assets), CPI (percentage increase in the consumer price index), and SE (staff expenses).

CRTA, CBINVTA and SE were used by Bourke as internal determinants. CRTA was used by Bourke to validate the theory which suggests that capital and reserves have a positive relationship with profitability. This theory also postulates that both liquidity (CBINVTA) and staff expenses (SE) were inversely related with profits. The relationship between return on capital and selected independent variables of Bourke's study is shown in Table 5.4 below.

Table 5.4
The Relation Between Return on Capital and Selected Determinants of
Bourke's (1989) Study[a]

	GOVT	CONC	INT	MON	R^2(adj)
1. BTCR	-0.03	0.71^b	0.10	0.30^b	0.100
2. BTCR	-0.10	0.15^b	-	-	0.060
3. BTCR	-0.09	0.17^b	-	0.30^b	0.100
4. ATCR	-0.27	0.04^b	0.10	-	0.010
5. BTCRTB	-0.60	0.05^b	-	0.25^b	0.040
6. BTCRTB	-0.60	0.03	0.07	-	0.003

Notes:
a: Number of observations for each equation is 116
b: Significant at 5% level

Both Short and Bourke found that government ownership was adversely related to profits, and there was a positive relationship for concentration and capital scarcity. Short found that concentration had a significant relationship with profits and so did Bourke. The study by Short indicated all independent variables as having a significant relationship with profitability, whereas GOVT and INT variables were not significant in Bourke's study. Another variation was the variable which measures the market growth, which was adversely significant in Short's study, whereas Bourke's findings indicated a significant relationship in a positive direction. Bourke (1989) believed that the lack of correspondence between his results and Short's results was due to factors such as the source of data, the number of countries included in the study, and the reliability of data.

The estimates of the relationship between returns of assets and selected independent variables from Bourke's study is shown in Table 5.5. The results indicated that capital ratio (CRTA), liquidity ratio (CBINVTA) and interest rate (INT) had a significant positive relationship with profits. While results for CRTA and INT were in line with the general theory, the liquidity ratio indicated the opposite (the theory posits that the more the bank holds of liquid assets, the less profit the bank will receive). Bourke believed that, in order to support the existence of an expense-preference theory, concentration should continue to have a positive relationship with value-added variables. The change in sign indicated that as concentration increases, staff expenses were squeezed. Therefore, the negative sign provided no evidence for this theory. Bourke, however, believed that an adverse relationship between concentration and BTSEPLTA indicated the existence of a risk-aversion theory. It implied that higher levels of concentration were associated with lower levels of services (presumably lower staffing costs) and lower loan loss costs (lower levels of loan portfolio risk).

Table 5.5
The Relation Between Return on Assets and Selected Determinants of Bourke's (1989) Study[a]

	CRTA	CBINVTA	GOVT	CONC	INT	MON	CPI	SE	R^2(adj)
1. BTTA	0.10[b]	0.01[b]	-0.10	0.00[b]	0.29[b]	-	-	-	0.53
2. BTTA	0.10[b]	0.01[b]	-0.01	0.01[b]	-	-	0.03[b]	-	0.53
3. BTTA	0.10[b]	0.01[b]	-0.01	0.01[b]	-	-	-	-	0.52
4. BTTA	0.10[b]	0.01[b]	0.01	-	-	-	-	0.01[b]	0.49
5. BTTA	0.11[b]	-	-	-	-	-	-	-	0.46
6. BTSETA	0.12[b]	0.01[b]	0.11	-0.02[b]	-	-	-	-	0.32
7. BTSETA	0.10[b]	0.01[b]	0.21	-0.02[b]	-	0.02	-	-	0.37
8. BTSETA	0.10[b]	0.01[b]	0.21	-0.02[b]	-	0.02	-0.00	-	0.37
9. BTSETA	0.10[b]	0.01[b]	0.23	-0.02[b]	0.40[b]	-	-	-	0.37
10. BTSEPLTA	0.13[b]	0.00[b]	0.12	-	-	-	-	-	0.28
11. BTSEPLTA	0.12[b]	0.00[b]	0.21	-0.01[b]	-	0.02	-	-	0.31
12. BTSEPLTA	0.13[b]	0.00[b]	0.14	-	-	0.02	-0.01	-	0.29
13. BTSEPLTA	0.11[b]	0.00[b]	0.24	-0.16[b]	0.57[b]	-	-	-	0.32

Notes:

a: Number of observations for each equation is 116
b: Significant at 5% level

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Molyneux and Thornton (1992) duplicated Bourke's (1989) study by using a sample of banks in 18 European countries. Their findings are presented in Table 5.6 and Table 5.7.

Table 5.6
The Relation Between Return on Capital and Selected Determinants of
Molyneux and Thornton's (1992) Study

	Intercept	GOVT	CONC	INT	MON	R^2(adj)	F
1. BTCR	-90.0629	0.0007	0.0007^a	0.0019^a	-0.0007^a	27.6	246.25
	(-0.74)	(0.02)	(3.44)	(24.42)	(-3.93)		
2. BTCR	-0.2830^a	0.0070	0.0092^a	-	-	1.1	18.59
	(-3.10)	(0.14)	(5.99)				
3. BTCR	-0.1630	-0.0297	0.0071	-	0.0025^a	10.8	105.29
	(-1.76)	(-0.64)	(4.80)		(16.53)		
4. ATCR	-0.3090^a	0.0905^a	0.0075^a	0.0010^a	-	10.9	125.60
	(-4.49)	(2.238)	(6.47)	17.56)			
5. BTCRTB	-0.8150^a	0.4050^a	0.0618^a	-	0.0003	2.2	20.32
	(-5.41)	(5.34)	(7.01)		(1.19)		
6. BTCRTB	-0.6620^a	0.2990^a	0.0156^a	0.0003^a	-	2.4	26.45
	(-5.47)	(4.54)	(7.77)	(2.61)			

Notes:
a: Significant at the 5% level
t statistics in parentheses

For European banks, Molyneux and Thornton found a statistically significant positive relationship between return on capital and concentration (CONC) and this finding was similar to the findings of Bourke. In contrast to Bourke, however, a significant relationship was found between return on capital and government ownership, suggesting that government-owned banks were more profitable than their counterparts. With regard to the capital-scarcity variable, they found a significant positive relationship, whereas Bourke found a weak positive relationship. Finally, Molyneux and Thornton found two different results when it came to the market growth variable (MON). When the capital scarcity variable (INT) was included in the equation, it had a significant adverse relationship and without INT, MON had an

insignificant relationship with profits. Bourke found significant relationships in all equations.

The findings in Table 5.7 rest on asset-based returns (total assets were used as denominator). Both capital ratio (CRTA) and capital scarcity variables were positively related with profitability and these results are similar to Bourke's findings. Other similarities were also recorded for staff expenses (SE) and inflation (CPI). Like Bourke, Molyneux and Thornton found a significant positive relationship for those two variables. In the case of government ownership (GOVT), Molyneux and Thornton found a positive relationship and this was in contrast to Bourke's result. Another contradictory finding between the two studies is in term of the liquidity ratio (CBINVTA). While Bourke's study indicated a significant positive relationship, a significant adverse relationship was found in Molyneux and Thornton's study.

Unlike Bourke, who found support for the expense-preference theory, Molyneux and Thornton's study found evidence to support both expense-preference theory and risk-aversion theory in European banking. The positive sign of regression coefficients for concentration (CONC) against the value added measures was further evidence for the existence of these theories.

Table 5.7
The Relation Between Return on Assets and Selected Determinants of Molyneux and Thornton's (1992) Study

	Intercept	CRTA	CBINVTA	GOVT	CONC	INT	MON	CPI	SE	R²	F
1. BTTA	-0.0146[a] (-6.18)	0.1200[a] (14.23)	-0.0122[a] (-4.66)	0.0056[a] (5.05)	0.0004[a] (12.07)	0.00002[a] (10.41)	-	-	-	13.6	93.39
2. BTTA	-0.0153[a] (-6.44)	0.1150[a] (13.35)	-0.0113[a] (-4.25)	0.0050[a] (4.47)	0.0004[a] (11.90)	-	-	0.0003[a] (3.32)	-	10.8	75.46
3. BTTA	-0.0153[a] (-6.43)	0.1190[a] (13.92)	-0.0125[a] (-4.70)	0.0052[a] (4.63)	0.0004[a] (12.92)	-	-	-	-	10.5	91.27
4. BTTA	0.0064[a] (4.22)	0.1200[a] (13.67)	-0.0107[a] (-3.93)	0.0021 (1.89)	-	-	-	-	0.00002[a] (12.14)	9.9	84.27
5. BTTA	0.0051[a] (6.35)	0.1120[a] (12.69)	-	-	-	-	-	-	-	4.9	160.99
6. BTSETA	0.0664[a] (2.96)	0.0930 (0.70)	-0.0353 (-0.85)	-0.0333 (-1.94)	-	-	-	-	-	0.1	1.65
7. BTSETA	-0.1570[a] (-3.25)	0.1390 (0.88)	-0.0420 (-0.81)	0.0051 (0.23)	0.0039[a] (5.56)	-	0.00004 (0.53)	-	-	1.2	7.34
8. BTSETA	-0.0739[a] (1.37)	0.2150[a] (2.36)	-0.0615 (-1.18)	-0.0236 (-1.00)	0.0036[a] (5.12)	-	0.00003 (0.38)	-0.0128[a] (-3.42)	-	1.7	8.09
9. BTSETA	-0.1160[a] (-3.10)	0.1250[a] (2.94)	-0.0344 (-0.83)	-0.0060 (-0.34)	0.0032[a] (5.94)	0.00006[a] (2.30)	-	-	-	1.4	9.70
10. BTSEPLTA	-0.1890[a] (-3.74)	0.0540[a] (2.32)	-0.1630[a] (-2.73)	0.0686[a] (2.41)	0.0059[a] (8.47)	-	-	-	-	3.4	20.86
11. BTSEPLTA	-0.2710[a] (-4.12)	0.1120[a] (2.55)	-0.1870[a] (-2.32)	0.1200[a] (3.49)	0.0068[a] (7.23)	-	0.00001 (0.10)	-	-	3.0	12.06
12. BTSEPLTA	-0.3410[a] (-3.98)	0.1090 (0.54)	-0.1750[a] (-2.16)	0.1200[a] (3.50)	0.0073[a] (7.21)	-	0.00001 (0.17)	0.0076 (1.27)	-	3.0	10.33
13. BTSEPLTA	-0.1860[a] (-3.68)	0.0520 (0.31)	-0.1620[a] (-2.70)	0.0695[a] (2.44)	0.0583[a] (8.30)	0.00005 (2.17)	-	-	-	3.4	16.96

Notes:
a: Significant at the 5% level
t-statistics in parentheses

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Stienherr and Huveneers (1994) studied the performance of 88 financial institutions in the United States, the United Kingdom, Western Europe and Japan. They divided their samples into two categories, i.e. universal banks (31 samples) and other banks (57 samples). Universal banks or mixed banks comprise those institutions which combine the short-term retail banking business with corporate finance and long-term investment banking business. Most of the universal banks included in their samples were from Austria, Finland, France, Germany, Japan, Spain and Switzerland. Samples from countries such as Belgium, Denmark, Great Britain, Greece, Italy, Luxembourg, Norway, Netherlands, and the United States were considered as other banks. Dependent and independent variables used in their study are listed below.

Dependent variables:

GIN : Gross income less provisions and losses over total assets,

NIN : Net income or gross income less operating expenditures, less provisions and losses over total assets,

INTN : Net interest income less loan losses and provisions over total assets.

Independent variables:

OE : Operating expenditures over total assets,

LIQ : Coefficient of liquidity,

FK : Coefficient of solvability or capital ratio,

SIZE : Total assets in common currency,

DRE : Discrete variable for the intensity of deregulation,

SOPH : Variable for the degree of sophistication,

REL : Relationship banking, equity investment as a proportion of total net loans,

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MSA (1-FOR):   :   Market share, individual bank's total assets as a percentage of each national bank system's total assets (FOR = Market share of foreign institutions in percentage of total assets),

SAB   :   Number of inhabitants per branch.

Regression results are shown in Table 5.8 and Table 5.9. Overhead expenditures (OE) for both universal and other banks had a positive significant relationship with gross income less provisions and losses, and this finding was similar to the findings of Bourke (1989) and Molyneux and Thornton (1992). Liquidity (LIQ) did not have any significant impact on universal banks but was significantly adverse at a 10 per cent level for other banks. Capital ratio had a significant positive relationship for universal banks and not for other banks. Similarly for size, there was no significant impact for other banks but the relationship was significantly positive for universal banks. Deregulation (DRE) and financial innovation (SOPH) had some positive effects on other banks. The existence of foreign banks had a significant adverse relationship with universal banks, which means they prosper in the absence of foreign competition. Finally, universal banks' profitability was not affected by the extent of the distribution network (SAB), which had a weakly positive effect on the profits of other banks.

Table 5.8
Measures of Profitability: Universal Banks

	OE	LIQ	FK	LogSIZE	DRE	SOPS	REL	MAS(1-FOR)	SAB	R²	F
1. GIN	1.05 ***	ns	0.07 ***	1.55 ***	-9.02 ***	-0.10 ***	-0.10 ***	-0.002 ****	ns	0.97	106.36
2. NIN	-	ns	0.08 ***	1.95 ***	-10.78 ***	-0.13 ***	-0.10 ***	-0.003 ****	ns	0.79	13.47
3. INTN	ns	-0.019 **	0.17 ***	4.87 ***	-12.94 ***	-0.31 ***	ns	-0.006 ****	ns	0.82	114.44

* significant at 0.10 level, **significant at 0.05 level, *** significant at 0.025 level, and **** significant at 0.001 level.

Table 5.9
Measures of Profitability: Other Banks

	OE	LIQ	FK	LogSIZE	DRE	SOPS	REL	MAS(1-FOR)	SAB	R²	F
1. GIN	0.66 ***	-0.01 *	ns	ns	ns	0.12 *	0.23 **	ns	0.56 **	0.67	11.95
2. NIN	-	ns	ns	ns	ns	0.15 ***	ns	ns	0.37 **	0.72	12.78
3. INTN	0.41 ***	-0.03 *	ns	ns	ns	0.12 *	0.33 ***	ns	0.63 **	0.41	3.76

* significant at 0.10 level, **significant at 0.05 level, *** significant at 0.025 level, and **** significant at 0.001 level.

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The summary of the profitability studies which used international data is shown in

Table 5.10 below.

Table 5.10
Summary of International Studies

Author (s)	Determinants	Profitability Measures	Effects on Profitability
Short (1979)	Internal variables: Growth on assets External variables: Concentration Interest rate Government ownership	Profit after taxes as a percentage of capital and reserves	Internal variables: An adverse relationship External variables: A positive relationship for concentration and interest rate, but an inverse relationship for government ownership
Bourke (1989)	Internal variables: Capital structure Liquidity Staff expenses External variables: Concentration Interest rate Market growth Inflation Government ownership	a. Net profit before tax as percentage of capital and reserves b. Net profit after tax as percentage of capital and reserves c. Net profit after tax as percentage of capital and reserves + total borrowing d. Net profit before tax as percentage of total assets	Internal variables: A positive relationship for all variables External variables: A positive relationship for concentration, interest rate, market growth, and inflation, but mixed results for government ownership
Molyneux and Thornton (1992)	Internal variables: Capital structure Liquidity Staff expenses External variables: Concentration Interest rate Market growth Inflation Government ownership	a. Net profit before tax as percentage of capital and reserves b. Net profit after tax as percentage of capital and reserves c. Net profit after tax as percentage of capital and reserves + total borrowing d. Net profit before tax as percentage of total assets	Internal variables: A positive relationship for capital structure and staff expenses. An inverse relationship for liquidity External variables: A positive relationship for concentration, interest rate, government ownership and inflation, but mixed results for market growth
Stienheer and Huveneers (1994)	Internal variables: Operating expenditures Liquidity Capital structure Size Technology Investment structure Efficiency External variables: Regulation Market share	a. Gross income less provisions and losses over total assets b. Net income over total assets c. Net interest income less loan losses and provisions over total assets	Internal variables: A positive relationship for operating expenditures, capital structure, size and efficiency. An inverse relationship for liquidity, and mixed results for other variables External variables: An inverse relationship for market share and mixed results for regulation

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Chapter 6

INVESTIGATION TOOLS

6.1 Introduction

In general, the findings of conventional bank profitability research have indicated that internal and external determinants contribute significantly towards banks' profitability. Although the review of the literature in Chapter 5 highlighted the importance of internal and external variables and their effects on bank performance, this does not mean that the same variables can be used in this study. Reexamination is needed of their suitability and applicability in an Islamic banking context. This revision is necessary because of the doctrinal differences between Islamic and conventional banks. Hassan (1993) suggested that Islamic banks should be considered as a different industry when compared with conventional banks. These two types of banks have different objectives, rely on different economically-based concepts and have different sets of operations.

This chapter will examine the profitability determinants which have been highlighted in Chapter 5 for their suitability and applicability in affecting the performance of Islamic banks. The statistical models which will be used to measure the relationship between the independent and dependent variables, and the sources and types of data used for this study, will also be discussed in this chapter.

6.2 Selection of Variables

The variables for this study are classified into three categories: (i) profitability determinant variables, (ii) profitability measure variables, and (iii) profitability theory measure variables. Profitability determinant variables are considered as independent variables, while both profitability measure variables and profitability theory measure variables are the dependent variables.

6.2.1 Profitability Determinant Variables

In line with previous studies, this study also divides profitability determinants into two categories, namely, internal and external variables.

6.2.1.1 Internal Variables

These variables are comprised of both balance sheet and income statement items (which are within the control of bank management). Balance sheet items are directly related to portfolio management while income statement items are directly related to income and expenditure management. Contrary to Hassan's (1993) notion, Islamic banks are commercial banks but operate on an interest-free basis. Therefore, variables such as liquidity, capital structure, deposits structure, financing structure, profit-sharing ratio, mark-up policies, and expenditure items which influence the profitability of conventional banks are hypothesised to have a similar impact on the performance of Islamic banks. Since the interest rate variable is replaced by the profit-sharing and mark-up ratios, these two elements are expected to influence the profitability of Islamic banks. These variables are therefore included in this study.

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The internal variables related to this study are shown in Table 6.1.

Table 6.1
Internal Variables Related to This Study

Variables	Researchers
Replicated variables (used by earlier researchers)	
1. Liquidity	Bourke (1989), Molyneux and Thornton (1992), and Stienherr and Huveneers (1994).
2. Capital structure	Bourke (1989), and Molyneux and Thornton (1992).
3. Deposits structure	Hester and Zoellner (1966), Haslem (1968), Fraser et al. (1974), Heggested (1977), Kwast and Rose (1982), and Smirlock (1985).
4. Assets structure	Hester and Zoellner (1966), Haslem (1968), Fraser et al. (1974), and Kwast and Rose (1982).
5. Expenditure items	Haslem (1968), Fraser et al. (1974), Bourke (1989), Molyneux and Thornton (1992), and Stienherr and Huveneers (1994).
New variables (specifically for Islamic banks)	
1. Profit-sharing and mark-up ratios with borrowers **2. Profit-sharing ratios with depositors**	
Unused variables (not included in this study)	
1. Number of branches	Hester and Zoellner (1966).
2. Location	Emery (1971), Vernon (1971), Kwast and Rose (1982).
3. Output and input prices	Mullineaux (1978).

The justification for the inclusion and exclusion of the above variables is highlighted below.

a. Liquidity

As is the case with conventional banks, most deposit facilities at Islamic banks carry the unqualified obligation to repay cash or its equivalent whenever it is requested. For notice and investment account facilities, a short period of grace is normally required prior to any withdrawal. If the bulk of a bank's liabilities are subject to payment on call, it is essential that the resources of the bank be managed so as to provide the means at all times for meeting demands for cash. If a bank is unable to meet those demands, customer confidence will be shattered and ultimately the bank will be left with no alternative but to close its doors.

The rate of return on assets tends to vary inversely with their degree of liquidity and risk. Thus, the more suitable an asset is to fulfil a bank's liquidity needs, the less likely it is to contribute much to bank earnings, and vice versa. By adapting this concept into an Islamic banking context, any Islamic bank which holds an excessive amount of liquid assets will be able to meet all of its obligations, but will make less profit. On the other hand, if the bulk of funds go into high yielding assets and are therefore illiquid and risky, the bank will make more profits but at the same time might not be able to fulfil its promises to pay cash when needed by customers. Therefore, the effect of liquidity will be measured and included in this study.

Bourke (1989) believed that the effect of liquidity on profitability can be measured by two ratios: (i) total liquid assets to total assets ratio, and (ii) total loans to total deposits ratio. While the ratio of liquid assets to total assets is said to have an inverse relationship with profitability, the converse is true for the second ratio. Since only financing (loans) and deposit figures are available for all samples used in this study, this study chose the second ratio as a proxy for liquidity. Therefore the variable incorporated in the model is presented as:

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LIQ   :   Total financing as a percentage of total deposits.

As explained in Chapter 1, the term financing includes all funds provided by Islamic banks, i.e. profit-loss sharing funds, mark-up funds, and interest-free loans.

b. Capital Structure

Like conventional banks, the capital structure of Islamic banks comprises the following: paid-up capital, surplus, reserves and retained profits. The paid-up capital consists primarily of the par or stated value of all outstanding shares subscribed and paid by members (usually in the form of ordinary shares). The surplus account usually derives from premiums over par value at which common shares were sold to the public. The reserve accounts comprise various funds which are established by the bank to either fulfil the requirements of a monetary authority or for other specific purposes such as those required by its by-laws or by the management of the bank. Retained profits or retained earnings are the net profits carried forward from previous years.

The amount of capital maintained by a conventional bank serves two main purposes. First, it represents the owners' stake in the business and it is assumed that bank management will undertake a careful policy not only to safeguard this stake, but to ensure sufficient returns for the investment made by these owners. Second, it serves as a buffer to protect depositors. In case of loss or liquidation, the claims of depositors are satisfied before those of the shareholders. Thus, the higher the amount of capital injected by the owners, the more confident customers will be and the more deposits that will be placed at the bank.

The research involving a firm's capital structure was pioneered by Modigliani and Miller (1958). They believed that, with the existence of full information and complete markets, capital structure would have no effect on a firm's value. Since then, many other researchers in banking studies have tried to measure the relationship between bank capital and profitability. The findings of these studies, however, vary from one to another (Bhala, 1992; and Berger et al., 1995 have made a comprehensive review of this area).

Therefore, the inclusion of capital structure in the model may provide some indication on the impact of the capital of Islamic banks on their profitability. Like the ratio in Bourke (1989), the following ratio is a proxy for measuring the impact of capital structure on profitability.

CRTA : Capital and reserves as a percentage of total assets.

c. Deposits structure

As explained in Chapter 2, there are three types of deposit facilities available at Islamic banks: current, savings, and investment accounts. No reward is given to current account holders. In the case of savings and investment accounts, rewards are generally influenced by two factors: the pre-arranged profit-loss sharing ratio and the annual profit made by the bank. Therefore, while funds in current accounts are considered cost-free funds, the more funds deposited in savings and investment accounts, the greater the cost to the bank.

Researchers who used conventional bank data found that savings and time deposits were inversely related to profitability (Hester and Zoellner, 1966; and Heggested, 1977). In the case of current accounts, more funds deposited into this account meant more profits to the bank (Smirlock, 1985).

The following deposits structure variables are included in this study.

DECA   :   Total deposits in current accounts as a percentage of total deposits.

DESA   :   Total deposits in savings accounts as a percentage of total deposits.

DEIA   :   Total deposits in investment accounts as a percentage of total deposits.

d. Assets structure

A deviation from the classical theory of a firm -which posits that firms aim simply to maximise profits-is that conventional banks are expected to consider three important factors when acquiring earning assets: profitability, liquidity and safety (Cohen and Hammer, 1967). In view of their similarity in operations, Islamic banks are also expected to conform to these three principles in their procurement of assets.

The bulk of earning assets of Islamic banks are in the form of financing and investment (as shown in Table 4.7 of Chapter 4). The findings of previous research was that asset items had a positive relationship with profitability (Hester and Zoellner, 1966). In the case of Islamic banks, the inclusion of items within the category of earning assets as independent variables in the model is considered appropriate for two reasons. Firstly, the results would measure the strength of relationship of individual assets with profitability, and secondly, it would indicate if Islamic banks are indeed justified in their decision to allocate a major portion of their earning asstes into 'mark-up' facilities. The following are the variables for earning assets.

FIPS   :   Total funds deployed using profit-loss sharing principles as a percentage of total assets.

FIMK   :   Total funds deployed using mark-up principles as a percentage of total assets.

FIIV   :   Total funds in investment activities as a percentage of total assets.

The balance sheets of Islamic banks present their composition of assets in terms of the principles (profit-sharing, mark-up, etc.) employed. This enabled convenient acquisition of the above-mentioned data for this study. Since the amount of financing extended using the interest-free principle is not significant (not more than 1% of total assets), this item is not included in the model.

e. Expenditure items

The expenditure items that fall within the control of Islamic bank management can be broadly divided into three categories: staff expenses, provision for loan losses, and other general expenses. Expenses, such as payment for the *zakat* and payments for income tax, are considered statutory expenses and beyond the control of management. The effectiveness and efficiency of the management in managing a bank are reflected by the amount of expenditure incurred in a particular reporting period. In the case of making provisions for loan losses, for example, the amount set aside for these expenses is reflected in the quality of the existing financing or in the investments undertaken by the bank. Similarly for staff and other expenses, the more expenses incurred by the bank, the less profit the bank will get.

While Fraser et al. (1974), Bourke (1989), and Molyneux and Thornton (1992) used staff expenses as a proxy for total expenditures, Stienherr and Huveneers (1994) applied total operating expenditures in their study. Based on the availability of data, this study also uses total operating expenditure instead of staff expenses as a proxy for expenditure items. The variable used in the model is given below.

TEXP : Total expenditures as a percentage of total assets.

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f. Profit-sharing ratio and mark-up policy

An interest margin is one of the most common measures used by the management of a conventional bank for maximising returns. The interest margin is basically the difference between interest revenues on banks assets and interest expenses on bank funds. The wider the margin, the more profits for the bank (Flannery, 1981; Hancock, 1985). Competitive markets for both sources of funds and uses of funds, however, constrain the bank's ability to earn a higher interest margin. Contrary to conventional bank practices, the use of an interest margin as a measure to increase profitability is not applicable to Islamic banks. Instead, a profit-sharing ratio margin is the appropriate measure that can be used by Islamic banks in maximising returns. This profit-sharing ratio is one of the key elements in the principle of *mudaraba* and the principle of *musharaka*. This ratio will determine the share of profits received or losses to be borne by both parties; that is, the bank and its customers. In the case of investment deposits that operate on the basis of *mudaraba*, the higher the ratio for the depositors, the higher is the portion of profits the depositors will get, and vice versa. As with the financing facilities that operate based on the principles of *mudaraba* and *musharaka*, if the ratio is to the advantage of customer, a bigger portion of the profits will go into their pockets, and vice versa as well.

A similar principle applies for mark-up policies. The mark-up is a process in which Islamic banks will require their customers to pay a certain amount of money over and above the cost of goods sold to them by the banks. The mark-up amount is basically comprised of two elements: profits for the bank and the reimbursement of whatever expenses were incurred (as pre-agreed by both the customer and the bank). This mark-up process is usually based on a percentage and is used by Islamic banks in delivering services or products that are based on the principles of *murabaha, bai mua'zzal, ijara,* and *ijara wa-iktina*. Therefore, the higher the percentage of mark-up imposed by the bank, the higher the level of profit that Islamic banks will receive.

Since profit-loss sharing and mark-up ratios are factors which influence the profit earned by the bank, it would be interesting to observe whether the ratios established by the banks are advantageous or otherwise. In some countries such as Iran and Pakistan (both excluded from this study), the ratios are fixed by their Central Bank. The Central Bank usually establishes a minimum and maximum percentage and the individual bank is free to determine its own figure (all sample banks were asked about the practice of fixing both profit-sharing and mark-up ratios, but no replies were received). The following variables are considered appropriate to capture the bank action in fixing ratios for both depositors and the users of funds.

IFIN   :   Incomes from financing activities as a percentage of total financing.

IBNK   :   Bank's share of financing income (incomes other than 'income from bank services' and 'other incomes') as a percentage of total savings and investment deposits.

IFIN is a variable which captures the effect of profit-loss sharing and mark-up ratios imposed by the banks on the users of funds. The higher the ratio to the bank's advantage means more profit to the bank, and vice versa. In the case of IBNK, this variable will capture the effect of the profit-sharing ratio between bank and depositors.

g. Number of branches, location and input and output prices

Number of branches, location, and input and output prices are excluded from the model. There are two reasons for this exclusion. First, data for these variables is not available, and second, these variables are unused by all previous researchers who undertook international comparative studies. These variables are more useful in domestic investigations.

6.2.1.2 External Variables

External variables are outside the control of bank management. Variables such as competition, regulation, size and economies of scale, concentration, market share, ownership, money supply and inflation are considered external to the bank. A reexamination is also needed for their suitability as profitability determinants of Islamic banks.

The external variables related to this study are given in Table 6.2. No new variable is introduced in this model, relative to earlier researchers.

Table 6.2
External Variables Related to This Study

Variables	Researchers
Replicated variables (used by earlier researchers)	
1. Regulation and competition	Emery (1971), Vernon (1971), Fraser and Rose (1972b), McCall and Peterson (1971), Heggested and Mingo (1976), Mullineaux (1978), Flannery (1981), Hancock (1985), Smirlock (1985), and Stienherr and Huveneers (1994).
2. Market share	Heggested (1977), Smirlock (1985), and Stienherr and Huveneers (1994).
3. Money supply	Bourke (1989), and Molyneux and Thornton (1992).
4. Interest rate	Short (1979), Flannery (1981), Hancock (1985), Bourke (1989), and Molyneux and Thornton (1992).
5. Inflation	Bourke (1989), and Molyneux and Thornton (1992).
6. Size	Emery (1971), Vernon (1971), Kwast and Rose (1971), Heggested (1977), Mullineaux (1978), Short (1979), Smirlock (1985), Bourke (1989), Molyneux and Thornton (1992), and Stienherr and Huveneers (1994).
Unused variables	
1. Concentration	Emery (1971), Vernon (1971), Heggested (1977), Short (1979), Kwast and Rose (1982), Smirlock (1985), Bourke (1989), and Molyneux and Thornton (1992).
2. Ownership	Emery (1971), Vernon (1971), Short (1979), Bourke (1989), and Molyneux and Thornton (1992).

The justification for the inclusion and exclusion of the above variables is highlighted under the following separate headings.

a. Regulation and competition

As mentioned in Chapter 1, one of the objectives of this study is to examine the impact of competition on the profitability of Islamic banks. The extent to which conventional banks become competitors for Islamic banks is yet to be explored. In the case of deposits, however, the level of deposits at Islamic banks is very much influenced by the level of deposits of the conventional banks (Haron and Shanmugam,1994).

This study, however, will not examine the effect of competition between conventional and Islamic banks. Instead, this study will measure the effect of competition among themselves on Islamic banks. The effect of regulation and competition on profitability will be measured simultaneously using a single variable called 'market place' (MKTPL). Although there are various elements within the ambit of regulation, the focus of this study is limited only to the 'barrier to entry' regulation. Islamic banks in a monopolistic market are protected by law or other forms of government intervention which prohibit other Islamic banks from operating. In the case of competative markets, the existence of more than one Islamic bank in operation serves as an indicator that there is little or no entry barrier for the establishment of other Islamic banks. The variable included in the model is given below.

MKTPL   :   A dummy variable representing two different markets, 1-when a bank operates in a monopolistic market; and 0-otherwise.

6.2.2 Profitability Measure Variables

As explained in Chapter 4, there is no standardisation among Islamic banks in presenting their final accounts. For the purpose of establishing a standard profitability measure variable, income statements of all sample banks are restructured according to the format below.

INCOMES:

Income from financing	xxxxxxx
Income from banking services	xxxxxxx
Other incomes	xxxxxxx
Total Incomes (TI)	**xxxxxx**
Less: Depositors' portion of income	xxxxxxx
Bank's portion of income (BI)	**xxxxxx**
Less: Expenditures	xxxxxxx
Net profit before taxes (BT)	**xxxxxx**
Less: Income taxes	xxxxxxx
Net profit after taxes	**xxxxxx**

Income from financing comprises incomes from all financing activities, i.e. financing using all modes of *Shariah* principles within the category of profit and loss sharing and mark-up activities. Income from banking services includes income derived from service activities in the form of commissions and fixed charges such as income from foreign exchange and charges received from remittance services. Income from subsidiaries and from other sources which have not been defined in the annual report are categorised as other incomes.

Expenditures include items such as staff expenses, provision for bad debt and loan losses, and other general and administrative expenses. Payment for *zakat* (alms tax) is considered as one of the expense items.

Based on the above format, this study will use the following variables as proxies for profitability:

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TITA   : Total incomes (TI) as a percentage of total assets,

BITA   : Bank's portion of incomes (BI) as a percentage of total assets,

BTTA   : Net profit before taxes (BT) as a percentage of total assets,

BTCR   : Net profit before taxes (BT) as a percentage of capital and reserves,

ATCR   : Net profit after taxes (AT) as a percentage of capital and reserves.

Total incomes as a percentage of total assets ratio (TITA) is used to capture the effects of internal and external determinants on a bank's profitability. In the case of BITA (bank's portion of incomes as a percentage of total assets), this ratio will also capture the effect of determinants on profitability. It is expected that all determinants will have similar impacts on both TITA and BITA. BTTA (net profit before taxes as a percentage of total assets) is used to measure the effect of total expenditures on a bank's profitability. The effects of profitability determinants on returns to shareholders is measured by two ratios, net profit before taxes as a percentage of total capital and reserves (BTCR) and net profit after taxes as a percentage of capital and reserves (ATCR). Islamic banks in Bahrain, Dubai and Kuwait are not required to pay income tax, thus BTCR and ATCR will be represented by the same figures.

6.2.3 Profitability Theory Measure Variables

Bourke's (1989) methodology will be used for examining the existence of expense-preference theory and risk-aversion theory in Islamic banks. Bourke (1989) introduced value added variables in his study, namely: (i) BTSETA (net profit before tax + staff expenses as a percentage of total assets), and (ii) BTSEPLTA (net profit before tax + staff expenses + provision for loan losses as a percentage of total assets). Bourke (1989) believed that the sign of the coefficient between concentration and value added variables is an indicator for the existence of the expense-preference theory and the risk-aversion theory. A positive sign between concentration and

BTSETA implies the existence of the expense-preference theory, while a positive sign between concentration and BTSEPLTA implies the non-existence of the risk-aversion theory.

For this study, the existence of these two theories is measured using the market share variable. There are two reasons for this application. Firstly, the concentration ratio is not being used in this study for reasons explained in Section (g). Secondly, as explained by Smirlock (1985), market expansion tends to generate more income for banks. Thus, the relationship between market share and Bourke's value-added variables (BTSETA and BTSEPLTA) is considered appropriate to measure the existence of both theories.

The existence of efficient-structure theory is measured by the sign of coefficient between the market share variable and profitability measures variables. A positive sign between these variables implies the existence of the efficient-structure theory, and vice versa.

6.3 Data

The data for this study are a pooled time-series cross-section taken from the annual reports of Islamic banks from various Islamic countries. Islamic banks from Bangladesh, Jordan, Kuwait, Malaysia, Tunisia and the United Arab Emirates are labelled as monopolistic banks, whereas Islamic banks from Bahrain, Sudan and Turkey are competitive banks. Islamic banks from Pakistan and Iran are excluded from this study. The list of participating banks and periods under study is provided in Appendix 5. Although some of the annual reports were less than ten years, the effect of sample sizes were the same for each cross-sectional unit.

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6.4 Application of Models

The data for study are panel data and it is assumed that all behavioural differences between individual banks are captured by the intercept. Therefore, a dummy variable approach will be applied (Griffiths, et al, 1993). An advantage of using panel data is that more observations on the explanatory variables are available. This has the effect of helping overcome the inherent multicollinearity which probably exists between the X variables. A general statement of the model for this study is as follows.

$$y_{it} = \beta_0 + \gamma_2 D_{2t} + \gamma_3 D_{3t} + ... + \gamma_J D_{Jt} + \beta_1 X_{it,1} + \beta_2 X_{it,2} + ... + \beta_k X_{it,k} + \varepsilon_{it}$$

$$i = 1, 2, ..., J$$
$$t = 1, 2, ..., T$$

where:

y_{it}	=	the dependent variable,
β_0	=	the intercept for Bank 1,
$D_{2t}, D_{3t} ... D_{J-1t}$	=	the dummy variables
$X_{it,1}, X_{it,2} ... X_{it,k}$	=	the independent variables (1,2......k),
k	=	the total number of independent variables,
J	=	the total number of banks,
T	=	the total number of observations for each bank,
ε_{it}	=	an error term.

The dummy variable for each bank is represented by:

D_{2t} = 1 for bank number 2 and 0 otherwise,

D_{3t} = 1 for bank number 3 and 0 otherwise,

D_{13t} =   1 for bank number 13 and 0 otherwise.

The above model implies that marginal effects β_k are the same across all banks. That is, a one unit change in variable X_k has the same effect on profit for all banks.

However, if the dummies are included, it means that a different intercept applies to each bank. Therefore, the equation for each bank is given below:

Bank 1: $y_{it} = \beta_0 + \beta_1 X_{it.1} + \beta_2 X_{it.2} + \ldots + \beta_k X_{it.k} + \varepsilon_{it}$

Bank 2: $y_{it} = (\beta_0 + \gamma_2) + \beta_1 X_{it.1} + \beta_2 X_{it.2} + \ldots + \beta_k X_{it.k} + \varepsilon_{it}$

Bank 3: $y_{it} = (\beta_0 + \gamma_3) + \beta_1 X_{it.1} + \beta_2 X_{it.2} + \ldots + \beta_k X_{it.k} + \varepsilon_{it}$

$\cdot$

$\cdot$

$\cdot$

Bank 13: $y_{it} = (\beta_0 + \gamma_{13}) + \beta_1 X_{it.1} + \beta_2 X_{it.2} + \ldots + \beta_k X_{it.k} + \varepsilon_{it}$

This mean that for a given value of each regressor $X_1, X_2, \ldots, X_k$, the average level of profit is different for each bank. Therefore, the relevant hypothesis for this model is given below:

H_0 :   average level of profit is the same for each bank ($\gamma_2 = \gamma_3 = \ldots = \gamma_{12} = 0$).

H_1 :   average level of profit is not the same for all banks ($\gamma_2, \gamma_3, \ldots, \gamma_{12}$ not all zero).

If it is true that $\gamma_2 = \gamma_3 = \ldots = \gamma_{12} = 0$, then the average level of profit is same for all banks and the data can be pooled. In this case the following model is applied.

$y_{it} = \beta_0 + \beta_1 X_{it.1} + \beta_2 X_{it.2} + \ldots + \beta_k X_{it.k} + \varepsilon_{it}$

If H_0 is rejected, dummies should be included in the model.

The structural models for this study are as follows:

a) A Complete Model

$$y_{it} = \beta_0 + \gamma_2 D_{2t} + \gamma_3 D_{3t} + \ldots + \gamma_{13} D_{13t} + \beta_1 \mathbf{LIQ}_{it} + \beta_2 \mathbf{CRTA}_{it} +$$
$$\beta_3 \mathbf{DECA}_{it} + \beta_4 \mathbf{DESA}_{it} + \beta_5 \mathbf{DEIA}_{it} + \beta_6 \mathbf{FIPS}_{it} + \beta_7 \mathbf{FIMK}_{it} +$$
$$\beta_8 \mathbf{FIIV}_{it} + \beta_9 \mathbf{IFIN}_{it} + \beta_{10} \mathbf{IDEP}_{it} + \beta_{11} \mathbf{TEXP}_{it} + \beta_{12} \mathbf{MKTPL}_{it}$$
$$+ \beta_{13} \mathbf{MKTSH}_{it} + \beta_{14} \mathbf{MON}_{it} + \beta_{15} \mathbf{INT}_{it} + \beta_{16} \mathbf{CPI}_{it} + \beta_{17} \mathbf{LogSIZE}_{it}$$
$$+ \varepsilon_{it}$$

b) Internal Variable Model

$$y_{it} = \beta_0 + \gamma_2 D_{2t} + \gamma_3 D_{3t} + \ldots + \gamma_{13} D_{13t} + \beta_1 \mathbf{LIQ}_{it} + \beta_2 \mathbf{CRTA}_{it} +$$
$$\beta_3 \mathbf{DECA}_{it} + \beta_4 \mathbf{DESA}_{it} + \beta_5 \mathbf{DEIA}_{it} + \beta_6 \mathbf{FIPS}_{it} + \beta_7 \mathbf{FIMK}_{it} +$$
$$\beta_8 \mathbf{FIIV}_{it} + \beta_9 \mathbf{IFIN}_{it} + \beta_{10} \mathbf{IDEP}_{it} + \beta_{11} \mathbf{TEXP}_{it} + \varepsilon_{it}$$

c) External Variable Model

$$y_{it} = \beta_0 + \gamma_2 D_{2t} + \gamma_3 D_{3t} + \ldots + \gamma_{13} D_{13t} + \beta_1 \mathbf{MKTPL}_{it} + \beta_2 \mathbf{MKTSH}_{it} +$$
$$\beta_3 \mathbf{MON}_{it} + \beta_4 \mathbf{INT}_{it} + \beta_5 \mathbf{CPI}_{it} + \beta_6 \mathbf{LogSIZE}_{it} + \varepsilon_{it}$$

Model (a) is considered the most appropriate model for this study because the effects of selected determinants on profitability are measured simultaneously. Models (b) and (c) are introduced to find whether each group of variables could stand on its own as determinants towards the profitability of Islamic banks.

The above structural models can be re-written as follows:

A complete model:

$$y = \beta_0 + \sum \gamma_J D_J + X_1\beta^{(1)} + X_2\beta^{(2)} + u \quad\text{...........................(1)}$$

where $\sum \gamma_J D_J$ is an element for dummy variables, $X_1\beta^{(1)}$ represents internal variables

and $X_2\beta^{(2)}$ is for the external variables.

Internal variable model:

$$y = \beta_0 + \sum \gamma_J D_J + X_1\beta^{(1)} + u \quad\text{.......................(2)}$$

External variable model:

$$y = \beta_0 + \sum \gamma_J D_J + X_2\beta^{(2)} + u \quad\text{.......................(3)}$$

The applicability of model (2) and model (3) will be examined using the following F-
test formula (Doran and Guise, 1984)

$$F = \frac{[\,RSS\,(H_0) - RSS\,(H_1)\,]\,/\,M}{RSS\,(H_1)\,/\,(N\text{-}K\text{-}1)}$$

Where,

RSS (H_0)   =   Sum of squares of a constrained model,

RSS (H_1)   =   Sum of squares of an unconstrained model,

M   =   Number of constraints,

(N-K-1)   =   Degrees of freedom of a constrained model.

The test for the applicability of the internal variable model i.e. to test model   (2) against model (1), involves the following hypothesis:

H_0 : Internal variable model can stand on its own ($\beta_2 = 0$)

H_1 : Internal variable model can not stand on its own ($\beta_2 \neq 0$)

Rejection of H_0 means the internal variable model is inadequate and can not stand on its own as a profitability model for this study.

The test for the applicability of the external variable model, i.e. to test model   (3) against model (1), involves the following hypothesis:

H_0 : External variable model can stand on its own ($\beta_1 = 0$)

H_1 : Internal variable model can not stand on its own ($\beta_1 \neq 0$)

If H_0 is rejected,   the external variable model   can not stand on its own as a profitability model for this study.

Chapter 7

FINDINGS

7.1 Introduction

The objective of this chapter is to present the findings of the various regression equations and statistical tests conducted for the models described in Chapter 6. The data for independent and dependent variables are given in Appendix 6. The detailed regression results for models with and without dummy variables are presented in Appendix 7. SHAZAM statistical package was used for analysing the data with a total of 121 observations.

7.2 Results of Various Statistical Tests

As explained in Chapter 6, the following statistical tests are relevant to this study:

    a.   Tests which validate the inclusion of dummy variables in the models.

    b.   Tests which measure the adequacy of internal and external variables in the models.

7.2.1 Test Results for the Inclusion of Dummies

The inclusion of dummies is based on the outcome of a test using the following hypotheses:

H_0 :   average level of profit is the same for all banks ($\gamma_2 = \gamma_3 = \ldots\ldots = \gamma_{12} = 0$).

H_1 :   average level of profit is not the same for all banks ($\gamma_2, \gamma_3, \ldots\ldots, \gamma_{12}$ not all zero).

Rejection of H_0 means dummies should be included in future models.

The summary of results for these tests is shown in Table 7.1 (details of results in Appendix 8). Except for equations 2 and 5 of the internal variables model and Equation 5 of a complete model, other F-test results rejected the hypothesis that $\gamma_2 = \gamma_3 = \ldots\ldots = \gamma_{12} = 0$. Thus, dummies are relevant to the equations used in this study.

Table 7.1
The Summary of Results for Statistical Tests Which Validate
the Inclusion of Dummy Variables

Equation	F-value	Critical value at 5%	Results
A Complete Model			
Equation 1 (TITA)	4.49	≈ 1.88	Reject H_0
Equation 2 (BITA)	2.04	≈ 1.88	Reject H_0
Equation 3 (BTTA)	3.09	≈ 1.88	Reject H_0
Equation 4 (BTCR)	2.39	≈ 1.88	Reject H_0
Equation 5 (ATCR)	1.53	≈ 1.88	Accept H_0
Internal Variables Model			
Equation 1 (TITA)	12.54	≈ 1.89	Reject H_0
Equation 2 (BITA)	1.63	≈ 1.89	Accept H_0
Equation 3 (BTTA)	2.46	≈ 1.89	Reject H_0
Equation 4 (BTCR)	1.48	≈ 1.89	Accept H_0
Equation 5 (ATCR)	0.35	≈ 1.89	Accept H_0
External Variable Model			
Equation 1 (TITA)	8.10	≈ 1.90	Reject H_0
Equation 2 (BITA)	6.84	≈ 1.90	Reject H_0
Equation 3 (BTTA)	16.25	≈ 1.90	Reject H_0
Equation 4 (BTCR)	2.98	≈ 1.90	Reject H_0
Equation 5 (ATCR)	2.27	≈ 1.90	Reject H_0

As indicated in Table 7.1, the average level of profit in four equations of a complete model, that is, TITA, BITA, BTTA and BTCR, are not the same, therefore the usage of dummy variables is considered appropriate in producing efficient results. In the case of ATCR, however, a model which does not include dummy variables is sufficient in predicting the relationship between dependent and independent variables.

In the case of the internal variables model, dummies are to be included in equations involving TITA and BITA, whereas a model without dummies is appropriate for BITA, BTCR and ATCR. As indicated in Table 7.1, dummies are to be included in all external variable model equations.

7.2.2 Test Results for the Adequacy of Internal and External Models

As explained in Chapter 6, the purpose of these tests is to identify whether each internal and external model can individually be used as a model which predicts the effects of internal and external determinants towards the profitability of Islamic banks. Each equation in the complete model, therefore, is tested using the following hypothesis:

H_0 : Internal or external variable models can stand on their own.

H_1 : Internal or external variable models can not stand on their own.

The results for tests involving internal variables are reported in Table 7.2 below (detailed results in Appendix 8):

Table 7.2
The Summary of Results Which Validate the Adequacy of
the Internal Variable Model

Equation	F-value	Critical value at 5%	Results
Equation 1 (TITA)	2.90	≈2.33	Reject H_0
Equation 2 (BITA)	2.83	≈2.33	Reject H_0
Equation 3 (BTTA)	2.11	≈2.33	Accept H_0
Equation 4 (BTCR)	8.06	≈2.33	Reject H_0
Equation 5 (ATCR)	39.45	≈2.33	Reject H_0

As indicated in Table 7.2, except for Equation 3 (BTTA) where the H_0 is accepted, other hypotheses are to be rejected. This finding indicates that almost all equations involving internal determinants can not be used as a model alone in predicting the relationship between internal variables and profitability.

The summary of results for tests involving external variables is given in Table 7.3 below (details of results in Appendix 3):

Table 7.3
The Summary of Results Which Validate the Adequacy of
the External Variable Model

Equation	F-value	Critical value at 5%	Results
Equation 1 (TITA)	13.91	≈1.92	Reject H_0
Equation 2 (BITA)	15.09	≈1.92	Reject H_0
Equation 3 (BTTA)	4.90	≈1.92	Reject H_0
Equation 4 (BTCR)	2.42	≈1.92	Reject H_0
Equation 5 (ATCR)	1.89	≈1.92	Accept H_0

Table 7.3 indicates that except for equation 5 (ATCR), other equations in this model can not stand on their own. The rejection of a null hypothesis (H_0) means those equations in the model are misrepresented, i.e. their regression results do not provide a true picture of the effects of external determinants on the profitability of Islamic banks.

7.3 Findings on a Complete Profitability Model

The summary of regression results for a complete profitability model are given in Table 7.4. Except for Equation 5, results for equations 1 to 4 are based on the dummy variable model. The value of the adjusted coefficient of determination (adj R^2) for equations 1 and 2 is high in value, i.e. 0.8791 and 0.8943. Higher R^2 indicates that the variability in profitability of Islamic banks is well explained by the linear relationship with all internal variable items. In the case of TITA, about 88% of the variability in total income is explained by its linear association with variables included in the equation.

As for equations 3, 4 and 5, the corresponding values adjusted R^2 are 0.5817, 0.6189 and 0.3979. A relatively small value of adjusted R^2 does not necessarily mean that the model is inappropriate to measure the relationship between independent and dependent variables. The value of adjusted R^2 is usually influenced by a number of predictor variables relative to the sample size and it becomes smaller as we have fewer observations per predictor variable (Hair, et al., 1995). The adequacy of a model as a predicting tool is validated by the F-test. As indicated in Table 7.4, the value of all F-ratios are statistically significant, i.e. 203.349 for equation 1, and 153.58, 19.433, 14.886 and 14.217 for equations 2, 3, 4 and 5 respectively. The results of these tests confirmed that the models applied are useful for measuring the relationship between internal variable items and the profitability ratios.

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Table 7.4
The Summary of Regression Results of a Complete Profitability Model

Equation	Significant at 0.01	Significant at 0.05	Significant at 0.10	Not Significant
TITA Adj R^2 : 0.8791 F : 203.349 P : 0.000	FIIV (-0.041) IFIN (0.247) TEXP (0.898)	LIQ (0.032) MKTSH (-0.207) INT (0.076) LogSIZE (1.909)		CRTA, DECA, DESA,DEIA, FIPS, FIMK, IBNK, MKTPL, MON, CPI.
BITA Adj R^2 : 0.8943 F : 153.580 P : 0.000	CRTA (0.053) DECA (0.034) TEXP (0.940) INT (-0.046)	LIQ (0.018)	IFIN (0.046) MKTSH (-0.106) MON (0.011)	DESA,DEIA, FIPS, FIMK, FIIV, IBNK, MKTPL, CPI, LogSIZE
BTTA Adj R^2 : 0.5817 F : 19.433 P : 0.000	LIQ (0.030) CRTA (0.069) DECA (0.036) FIPS (-0.077)	IFIN (0.066)	INT (-0.032)	DESA, DEIA, FIMK, FIIV, IBNK, TEXP, MKTPL, MKTSH, MON, CPI, LogSIZE.
BTCR Adj R^2 : 0.6189 F : 14.886 P : 0.000	IBNK (0.265) MON (0.443)	INT (-0.806)	CRTA (-0.721) MKTPL (45.715)	LIQ, DECA, DESA, DEIA, FIPS, FIMK, FIIV, IFIN, TEXP, MKTSH, CPI, LogSIZE.
ATCR Adj R^2 : 0.3979 F : 14.217 P : 0.000	INT (-0.290) MON (0.278)		CRTA (-0.365) FIIV (-0.173)	LIQ, DECA, DESA, DEIA, FIPS, FIMK, IFIN, IBNK TEXP, MKTPL, MKTSH, CPI, LogSIZE.

The regression coefficients in parentheses
The coefficients for insignificant variables are omitted for reasons of space

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7.3.1 The Effects of Internal Variables

a. Liquidity (LIQ)

This study found that liquidity had a significant positive relationship with total incomes received by the bank (TITA), the bank's portion of income (BITA), and income before tax to total assets (BTTA). No significant relationship was found between liquidity and profitability measures which were deflated against total capital and reserves (BTCR and ATCR).

Since this study used the total financing to total deposits ratio as a proxy for liquidity, the result is in line with conventional banking theory, which postulates that an increase in financing is followed by an increase in profits The positive relationship between profitability ratios and liquidity is in line with the findings of Molyneux and Thornton (1992) and Stienherr and Huveneer (1994), but contradict the findings of Bourke (1989).

As indicated in Table 7.4, while other independent variables remain constant (this assumption hold for all other equations) each 1% increase in total financing increased TITA by 0.032%, BITA by 0.018% and BTTA by 0.026 %.

b. Capital Structure (CRTA)

In line with the findings of Bourke (1989), Molyneux and Thornton (1992), and Stienherr and Huveneers (1994), this study found a positive relationship between capital structure and profitability measures ratios which were deflated against the total assets. These relationships were at a significant level in two equations (BITA and BTTA). The capital structure, however, had no significant relationship with the total income (TITA). This means additional capital will not generate more income for the

bank. While CRTA had a positive significant relationship with BITA and BTTA, a significant inverse relationship was found between CRTA and profitability measures which were deflated by total capital and reserves (BTCR and ATCR). An inverse relationship means that any injection of capital into a bank's capital structure would reduce these profitability measures. In the case of BITA and BTTA, for every 1% increase in capital the percentage of BITA would increase by 0.053% and 0.069% for BTTA.

An inverse relationship between CRTA and BTCR and ATCR indicates that an increasing amount of capital does not lead to an increase in income to shareholders. Instead of producing more income, the existing level of income is shared by both present and new shareholders. In other words, the injection of 1% of capital will reduce BTCR by 0.721% and ATCR by 0.365%.

c. Deposits Structure (DECA, DESA, and DEIA)

Deposits structure was represented by three variables, i.e. current (DECA), savings (DESA) and investment (DEIA) accounts. Most previous studies have found that savings and time deposits have an inverse relationship with profitability, while a positive relationship has been found for current account deposits.

Almost all deposits structure variables had no significant relationship with the profitability ratios. DECA was the only variable which had a significant relationship with BITA and BTTA. Each 1% increase in current account holdings will increase the bank's portion of income by 0.034% and profit before tax by 0.036%. This result is in line with the findings of Smirlock (1985). Since a current account facility is considered a cost-free service, it is expected that the more funds deposited into this account, the more Islamic banks stand to profit. Interestingly, DECA had no significant relationship with TITA. This finding indicates that an increase in current

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accounts do not generate more income to the bank as a whole, but only function as a cost saving measure. That is, no rewards are paid to these depositors.

d. Assets Structure (FIPS, FIMK, and FIIV)

The assets structure was represented by three variables: funds in profit-sharing financing activities (FIPS), funds in mark-up (FIMK) and funds in investment (FIIV). The findings of previous studies indicate that asset items have a positive relationship with profitability. However, this study found that, where a relationship existed, asset items had an inverse relationship with profitability measures.

In the case of FIPS, for example, a significant inverse relationship was found only with BTTA. Each 1% increase in FIPS will decrease the percentage of net income before tax by 0.077%. No significant relationship was found between FIMK and the profitability measures. In the case of FIIV, the only significant relationship was with ATCR. Each 1% increase in FIIV will decrease ATCR by 0.173%.

f. Profit-sharing Ratios (IFIN and IBNK)

This study found that the percentage of incomes from financing activities (IFIN) had a positive significant relationship with all profitability measures deflated by total assets. Each 1% increase in the percentage of income from financing activities will result in an increase in the percentage of TITA, BITA and BTTA by 0.247%, 0.046% and 0.066% respectively. This finding indicates the incremental increase of Islamic banks' income from financing activities. Therefore, the result seems to suggest that the profit-sharing ratio between Islamic banks and the users of funds favours the bank.

In the case of a bank's share of financing income (IBNK), a significant positive relationship was recorded only with BTCR. Each 1% increase in the bank's share of

income from financing activities will increase BTCR by 0.265%. This result indicates that the percentage of the profit-sharing ratio between bank and depositors is to the advantage of the shareholders.

7.3.2 The Effects of External Variables

a. Regulation and Competition (MKTPL)

The effects of regulation and competition were not consistent across profitability measures. A significant relationship at a 10% level was found only with BTCR. This finding indicates that for any given scenario related to profit before tax, deflated by total capital and reserves, those Islamic banks in a monopolistic market are better off by 45.715% than banks in a competitive market. This finding is in line with the common belief that under monopoly conditions, welfare of the firm or shareholder is maximised.

With regard to other equations, though there were no significant relationships, further elaboration is needed. Equation 1 (TITA), for example, suggests that Islamic banks in a monopolistic market earned more than banks in the competitive market. For any given scenario, Islamic banks in monopolistic markets are better off by 0.823% than their counterparts in competitive markets. Interestingly, when it comes to Equation 2 (BITA), the income of monopolistic banks is less than the income of those banks which operate in a competitive market. This finding indicates that depositors in a competitive market are being rewarded less than depositors at banks in a monopolistic market. For given conditions, the income of competitive banks is higher by 1.474% than that of monopolistic banks. In the case of BTTA, i.e. the equation which measures the effect of expenditures on profitability, it seems that banks in a monopolistic environment earn more than their counterparts in a competitive market. Using total expenditures as an indicator for productivity and efficiency, this finding

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provides evidence to reject the common belief that any business organisation in a competitive environment is better managed than those which have a monopolistic status. In any given scenario, the net income of monopolistic banks is higher by 0.597% than their counterparts in a competitive environment.

b. Market Share (MKTSH)

The findings of earlier studies indicate that expansion in market share is not necessarily followed by an increase in a bank's profit. While Short (1979) and Smirlock (1985) found that market share had a significant positive relationship with profits, both Heggested (1977) and Mullineaux (1978) found otherwise.

This study found that market share had a significant inverse relationship with two profitability measures, i.e. TITA and BITA, and was not significant for other equations. These results indicate that an increase in market share will result in a decrease in the percentage of TITA and BITA. Each 1% increase in market share will decrease the percentage of TITA by 0.207% and 0.106% for BITA.

Like Smirlock (1985), this study used total deposits placed at an Islamic bank as a percentage of deposits in the country's banking system but found an inverse result. Among the possible explanations for this finding is an excess in liquidity, that is, an over-concentration in short-term financing. It is widely known that Islamic banks are facing problems in disposing of their surplus liquid funds (Ahmad, 1987). Islamic financial markets are non-existent in most countries and Central Banks in most countries do not issue Islamic securities (Bank Negara Malaysia is the only Central Bank to issue Islamic securities. The Kuwaiti government, however, through its Central Bank issued Islamic bonds for the purpose of constructing housing projects for people). In the case of Bank Islam Malaysia Berhad, the average annual percentage of total liquid assets (comprising cash, bank balance, balance with the

Central Bank, and marketable securities) against the total assets for the period under study was 35.51%. For other banks, the corresponding figures were 24% for Islami Bank Bangladesh Limited, 32% for Jordan Islamic Bank, 25.21% for Kuwait Finance House, 35.33% for Faisal Islamic Bank of Sudan, 41.39% for El-Gharab Bank of Sudan, 55.24% for Tadamon Islamic Bank of Sudan, and 30.03% for Faisal Finance Institution of Turkey. Therefore, there is a possibility that funds deposited by customers are lying idle as liquid assets, thus generating little or no income to the banks.

As explained in Chapter 4, all Islamic banks prefer to invest their funds in short-term activities which are governed by the principles within the mark-up category. As shown in Appendix 6, most banks have more than 75% of their assets in the form of marked-up financing. This kind of investment generates less return to the banks compared to long-term investments (Mirakhor, 1987).

c. Money Supply (MON)

Bourke (1989) and Molyneux and Thornton (1992) found that money supply had a positive relationship with net profit before tax at a significant level. This study also found a positive relationship between money supply and all profitability measures. While the relationship was insignificant with TITA and BTTA, a significant relationship at the 10% level was recorded with BITA and at a 1% level with profitability measures which were deflated by total capital and reserves. Each 1% increase in money supply will increase BITA, BTCR and ATCR by 0.011%, 0.443% and 0.278% respectively. This finding confirmed that growth in the economy as proxies by money supply is shared by Islamic banks.

d. Interest Rate (INT)

Interest rate figures for Dubai and Sudan were not available, thus elaboration for this sub-section was based on data of Bahrain, Bangladesh, Jordan, Kuwait, Malaysia, Turkey and Tunisia. Since total observations for these countries constitute more than half of the data-points, thefinding was considered reliable for statistical inference. While the findings of Bourke (1989) and Moluneux and Thornton (1992) indicated that interest rates had a positive significant relationship with net profit before taxes, the results here are mixed. This study found that the interest rate had a positive relationship with total incomes received by Islamic banks. Each 1% increase in the interest rate level tends to increase the percentage of total income by 0.076%. As for BITA, BTTA, BTCR and ATCR, a 1% increase reduces the percentage of these ratios by 0.046%, 0.032%, 0.806% and 0.29% respectively.

This finding indicates that Islamic banks are in fact using the interest rate as a benchmark in fixing their charges to the users of funds and the rewards given to their depositors. The allegation that Islamic banks are using market interest rates as their benchmark is, in fact, nothing new (Homoud, 1994). Incidentally it has been suggested that Islamic banks used it as a basis for calculating their profit-sharing ratio and recommended that the profit-sharing ratio be equivalent to the interest rate offered by the conventional banks (Nienhaus, 1983). This study confirms that Islamic banks will increase their charges to customers (e.g. the mark-up ratio and profit-sharing ratio to the bank's advantage), and thus increase their total incomes. At the same time, banks have to increase rewards to depositors and this will reduce their portion of income.

e. Inflation (CPI)

The findings of Bourke (1989) and Molyneux and Thornton (1992) indicate that the Consumer Price Index (CPI) had a significant positive relationship with profits. Although this study also found that the CPI had a positive relationship with all profitability measures, this relationship, however, was not statistically significant.

f. Size (SIZE)

There has been no consistency in the findings of previous studies with regard to size. This study has also given mixed results.   Size had a significant positive relationship with TITA but was not significant to other profitability measure variables. This finding indicates that the larger the bank's size, the higher the total income accruing to the bank.

7.4 Findings on the Existence of Profitability Theories

As stated in Chapter 6, this study sought to measure the existence of three profitability theories, i.e. efficient-structure theory, expense-preference theory, and risk-aversion theory. The measure for efficient-structure theory was based on Smirlock's (1985) study. The existence of efficient-structure theory was indicated by the sign of the regression coefficient between the market share and profitability measure variables. For expense-preference and risk-aversion theories, Bourke's (1989) methodology was applied.

As indicated in Table 7.4, the market share variable had an inverse significant relationship with TITA and BITA. This relationship rejected Smirlock's market-efficient theory that market expansion produces more profit for the bank. In Table 7.5, MKTSH too had an inverse relationship with the value added measures in all of the equations. The inverse relationship between MKTSH and BTSETA implied that no support for the expense-preference theory can be found in Islamic banks. As for the risk-aversion effect, evidence was found to support this theory. A negative relationship indicates that the expansion of market share will lower financing costs (BTSEPTA). This finding is in line with the current practices of Islamic banks that adopt a very conservative approach to their financing and investment activities, i.e. concentrating on mark-up activities which are known for their simplicity and low risk (Mirakhor, 1987).

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Table 7.5

Regression Results Which Measure the Existence of Profitability Theories

Dependent Variable	CRTA	LIQ	MKTSH	INT	MON	CPI	R²	F	p-value
BTSETA	**0.069**	**-0.005**	-	-	-	-	0.172	160.790	0.000
t-value	4.852	-1.358							
p-value	0.000	0.177							
BTSETA	**0.068**	**-0.001**	**-0.004**	-	**0.016**	-	0.355	128.294	0.000
t-value	5.355	-0.348	-0.245		4.876				
p-value	0.000	0.729	0.807		0.000				
BTSETA	**0.068**	**-0.000**	**-0.007**	-	**0.003**	**0.014**	0.383	111.730	0.000
t-value	5.355	-0.075	-0.386		0.452	2.296			
p-value	0.000	0.940	0.700		0.652	0.023			
BTSETA	**0.067**	**-0.005**	**-0.051**	**-0.421**	-	-	0.226	103.096	0.000
t-value	4.731	-1.421	-2.841	0.469					
p-value	0.000	0.158	0.005	0.469					
BTSEPLTA	**0.057**	**-0.002**	-	-	-	-	0.125	205.264	0.000
t-value	3.878	-0.617							
p-value	0.000	0.539							
BTSEPLTA	**0.055**	**0.000**	**-0.009**	-	**0.013**	-	0.261	147.794	0.000
t-value	4.096	0.214	-0.462		3.796				
p-value	0.000	0.831	0.645		0.000				
BTSEPLTA	**0.055**	**0.001**	**-0.010**	-	**0.003**	**0.011**	0.279	125.636	0.000
t-value	4.086	0.418	-0.566		0.412	1.697			
p-value	0.000	0.677	0.572		0.681	0.092			
BTSEPLTA	**0.067**	**-0.005**	**-0.051**	**-0.004**	-	-	0.226	103.96	0.000
t-value	4.731	-1.421	-2.841	-0.727					
p-value	0.000	0.158	0.005	0.469					

Chapter 8

SUMMARY AND CONCLUSIONS

8.1 Introduction

This chapter presents a summary of the study and discusses the conclusions, limitations, and implications of the research. Recommendations for future research are also outlined.

Section 8.2 summarises the contents of the thesis from Chapter 2 to Chapter 7. The conclusions in Section 8.3 are presented in line with the three prime objectives of this study. The first objective was to investigate factors that contribute towards the profitability of Islamic banks. The second objective was to determine the profitability of Islamic banks which operate in two separate markets, that is, monopolistic and competitive markets, and the final objective was to examine the existing profitability theories within the Islamic banking system.

In Section 8.4, the limitations of this study are elaborated. These limitations are caused by several factors. These factors are broadly classified as theoretical and conceptual considerations, data collection, and aspects of accounting and auditing. Section 8.5 highlights the implications of this research and finally the recommendations for future studies are discussed in Section 8.6.

8.2 Summary

In Chapter 2, the theoretical and conceptual aspects of Islamic banking were elaborated. Important concepts highlighted in this chapter included the philosophy of Islamic business, the objectives of Islamic banks, aspects of *riba*, sources and uses of funds and finally the relationship between Islamic banks and their suppliers and users of funds. One of the unique aspects of Islamic banks is that these institutions must conform to Islamic business principles and philosophies as highlighted in the Koran and *Hadith*. Therefore, Islamic banks are expected to establish objectives which include both profit and moral responsibilities. There are, however, inconsistencies among Islamic banks in establishing their objectives. While some banks indicate clearly that moral responsibility is one of their objectives, others are more inclined towards profit maximisation.

Another important issue highlighted by Chapter 2 concerns the relationship between Islamic banks and their customers. Theoretically, the relationship between Islamic banks and their customers is bound by principles which influence the behaviour of Muslims in matters relating to economics. In light of these principles, depositors with Islamic banks are not expected to be guided by profit motives.

Chapter 3 explains the laws and regulations to be followed by Islamic banks. These laws comprise *Shariah* (Islamic laws) and positive laws. Although there is sufficient literature describing the meaning and sources of *Shariah*, there is no literature which comprehensively outlines *Shariah* laws governing the entire banking system. The only element of *Shariah* which is widely discussed and applied in the Islamic banking system is the principles of *Shariah* for banking operations. These principles can be broadly divided into four categories, namely, profit-sharing principles, fees or charges based principles, a charge-free principle, and ancillary principles.

In the context of Islamic banking, positive laws are laws promulgated by authorities from regulatory bodies which govern and supervise the operations of Islamic banks in their country. In most cases the governing bodies for Islamic banks are the Central Banks of various countries. Rules and regulations imposed by the Central Bank on conventional banks are usually applied to Islamic banks too. The final part of Section 3 highlights another regulatory body called the *Shariah* Supervisory Board. There are however some differences in terms of appointments, functions and responsibilities between one board and another. The main function of this body is to ensure that the banking operations are conducted in accordance with the *Shariah*. Unlike ordinary external auditors whose functions, duties and responsibilities are prescribed by the International Auditing Standard, a standard for the *Shariah* Supervisory Board has yet to be established. Each *Shariah* board has its own functions and methods of discharging its duties.

Chapter 4 elaborates the operational aspects and practices of Islamic banks, including the usage of *Shariah* principles, services available and sources and uses of funds. As highlighted in the first section of this chapter, it appears that there is no standardisation in terms of usage of *Shariah* principles among the Islamic banks selected for this study. The differences occur in aspects such as the use of terminology, category of principles, number of principles and country-specific principles. The common deposit facilities comprise of current accounts, savings accounts and investment accounts and are available at most banks. Investment accounts are considered as the most preferred facilities by customers. It seems that Islamic banks tend to finance all sectors within the economy (as long as the sector is permissible by *Shariah*). The funds, however, are not equally distributed among these sectors. Although *Shariah* has laid down various principles for financing activities, Islamic banks in this study are more engrossed with the mark-up principles. The profit-sharing principles and charge-free principles are used on a limited scale. Various accounting policies adopted by Islamic banks in preparing their financial

statements are also highlighted in Chapter 4. There is no standardisation in accounting policies among the Islamic banks used in this study (the effect of these policies on profitability is discussed in Section 8.4).

Chapter 5 reviews the literature related to profitability studies in banking. This chapter is divided into two main sections. Section 5.1 highlights the determinants of profitability. These determinants are classified into two categories, namely, internal and external determinants. Theories related to bank profitability are also discussed in this first section. Section 5.2 discusses all profitability studies which have used international data.

Since there has been no profitability study of Islamic banking, no literature is available for review. The conventional banking profitability literature, however, is obtainable in abundance and is used as a guideline and foundation for this study. Profitability studies involving internal variables were pioneered by Hester and Zoellner (1966) and the latest study was conducted by Stienherr and Huveneers (1994). The internal variables are broadly classified into two categories, namely, financial statement and non-financial statement variables. The financial statement variables relate to the decisions which directly involved the items in balance sheets and income statements. Items in balance sheets consist of composition of assets such as types of loans, investments, composition of deposits, liquidity, and capital structure, whereas items related to income statements comprise types and composition of expenditures, rates of interest on loans, and staff costs. The examples of non-financial statement variables are number of branches, location, size of branches and banks, technology, and efficiency.

The first profitability study which used internal variables was conducted by Emery (1971). Since then many researchers have expanded the work of Emery by including more variables in their profitability models. The external variables comprise factors

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such as regulation, competition, concentration, market share, ownership, scarcity of capital and inflation. Short (1979) was the first researcher to use cross-country data in a profitability study. Since Short, there have been only three other studies which involved data from various countries. These studies are the works of Bourke (1989), Molyneux and Thornton (1992), and Stienherr and Huveneers (1994).

As in studies of other areas of banking, there is no consistency in the findings of the studies highlighted in Chapter 5. On the contrary, a range of conclusions can be made based on the cognate results of a number of researchers. For example, while the current account is likely to have a positive relationship with profitability, savings and fixed deposits indicate otherwise. In the case of expenses, most researchers found that this item had an inverse relationship with profitability. Like internal variables, no similar findings were discovered with regard to the effect of external variables on profitability.

Chapter 5 also discusses the profitability theories in banking studies. Among the theories in the bank profitability literature are the structure-conduct-performance theory, the efficient-structure theory, the expense-preference theory, and the risk-aversion theory. While structure-conduct-performance theory received the greatest attention among researchers, other theories were discussed by a select few. Findings on the existence of profitability theories in banking are varied among the researchers.

Chapter 6 elaborates an approach in developing the profitability model for this study in line with the objectives mentioned in Chapter 1. This chapter constitutes three sections, namely, selection of variables, data for the study, and the application of models. All determinants of profitability and theories related to profitability as elaborated in Chapter 5 were reviewed for their suitability and applicability in an Islamic banking context. Internal variables such as liquidity, capital structure, deposit structure, assets structure and expenditure items were found to be suitable and

applicable for this study, whereas factors such as number of branches, location, output and input prices were, for several reasons, excluded from the model. New variables, namely, profit-sharing and mark-up ratios with borrowers, and profit-sharing ratios with depositors, were included in the model. In the case of external variables, no new variables were introduced. While factors such as regulation, competition, market share, money supply, interest rate, inflation and size were included in the model, both concentration and ownership were not considered applicable to this study.

Just like the determinants of profitability, only selected profitability theories were considered in by this study. Since 'concentration' was not used as one of the external variables, the existence of structure-conduct-performance theory in the Islamic banking system could not be established. The existence of efficient-structure theory was measured using the method introduced by Smirlock (1985), whereas for the expense-preference and risk-aversion theories, Bourke's (1989) approach was adopted.

The effects of determinants on the profitability of Islamic banks and the existence of profitability within the environment of Islamic banking were measured using a dummy variable model (one of the branches in regression analysis). Regression analysis had been used by the majority of previous studies. While internal and external determinants were classified as independent variables, dependent variables were represented by five profitability ratios. Three of the ratios were deflated by total assets and the remaining ratios were deflated by total capital and reserves. Similarly, the existence of profitability theories was measured using the multiple regression technique.

Models for this study involve three structural equations, namely, an internal variables model, an external variables model, and a complete profitability model. While the internal variables model specifically measures the effects of internal determinants on

profitability without taking external determinants into consideration, the external model deals only with external determinants. A complete model is a model in which internal and external determinants are included in the equation and the effects of these variables are measured simultaneously.

Since the sample for this study were Islamic banks from nine Muslim countries, a dummy variable model was applied in order to identify whether all samples operate within a homogeneous environment. Although the statistical inferences are based on a complete profitability model, the F-test is, nevertheless, introduced in order to validate whether internal and external models could be used in evaluating the effects of each determinant on the profitability of an Islamic bank.

Chapter 7 presented the results of the models and statistical tests illustrated in Chapter 6. The inclusion of dummy variables was appropriate for the majority of equations in each respective model. Excepting the values of F for Equation 5 of a complete profitability model and equations 2 and 5 of an internal variables model, other results indicated that dummy variables are relevant for each equation. The results also mean that there is a significant difference in operating environment between one Islamic bank and another. The effects of these factors on the profitability of Islamic banks are discussed in the next Section.

8.3 Conclusions

This section presents the conclusions drawn from the findings in light of the objectives of the study.

Objective 1:

To investigate factors that contribute towards the profitability of Islamic banks.

The effects of determinants on profitability are summarised in Table 8.1 below.

Table 8.1
Summary of the Effects of Determinants on Profitability

Profitability Ratios	Significant*	Not Significant
TITA	FIIV, IFIN, TEXP, LIQ, MKTSH, INT, LogSIZE.	CRTA, DECA, DESA, DEIA, FIPS, FIMK, IBNK, MKTPL, MON, CPI.
BITA	CRTA, DECA, TEXT, INT, LIQ, IFIN, MKTSH, MON.	DESA, DEIA, FIPS, FIMK, FIIV, IBNK, MKTPL, CPI, LogSIZE.
BTTA	LIQ, CRTA, DECA, FIPS, IFIN, INT.	DESA, DEIA, FIMK, FIIV, IBNK, TEXP, MKTPL, MKTSH, MON, CPI, LogSIZE.
BTCR	IBNK, MON, INT, CRTA, MKTPL.	LIQ, DECA, DESA, DEIA, FIPS, FIMK, FIIV, IFIN, TEXP, MKTSH, CPI, LogSIZE.
ATCR	INT, MON, CRTA, FIIV.	LIQ, DECA, DESA, DEIA, FIPS, FIMK, IFIN, IBNK, TEXP, MKTPL, MKTSH, CPI, LogSIZE.

* Significant at 10% and less

The effects of investigated determinants on the profitability of Islamic banks are discussed in line with the five profitability measure ratios used in the study: total income as a percentage of total assets (TITA), bank's portion of income as a percentage of total assets (BITA), net profit before taxes as a percentage of total assets (BTTA), net profit before taxes as a percentage of capital and reserves (BTCR) and net profit after taxes as a percentage of capital and reserves (ATCR). While TITA,

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BITA and BTTA capture the effects of determinants on profitability, both BTCR and ATCR measure the effects of determinants on the potential incomes to shareholders.

As indicated by Table 8.1, capital and reserves (CRTA), funds deposited in current accounts (DECA), funds deposited in savings accounts (DESA), funds deposited in investment accounts (DEIA), funds deployed using profit-sharing principles (FIPS), funds deployed using mark-up principles (FIMK), bank's share of financing income (IBNK), market place (MKTPL), money supply (MON) and inflation (CPI) have no significant relationship with TITA. However, determinants which have a significant relationship are funds in investment activities (FIIV), incomes from financing activities (IFIN), total expenditure (TEXP), liquidity (LIQ), market-share (MKTSH), interest (INT), and size (LogSIZE).

A small portion of capital and reserves as compared to the total liabilities could be the reason why CRTA had no significant relationship with profitability. The majority of Islamic banks in this study rely heavily on deposits and other liabilities as their sources of funds. Thus, changes in total capital and reserves would have no effect on profitability. In the case of deposits (DECA, DESA, and DEIA), although their relationship with profitability is not significant, the sign of coefficient for both variables indicates further explanations. This finding is in contradiction with the effect of changes in deposit levels at conventional banks where an increase in deposits will lead to a decrease in profitability. Since IBNK is a variable which measures the effect of the profit-sharing ratio between the bank and the depositors, it has no effect on TITA. As for MON, though this variable is seen to be insignificant, a positive coefficient sign means growth in the economy is shared by Islamic banks. The effect of the market place (MKTPL) on profitability is discussed in the elaboration of the conclusion related to Objective 2.

As for the variables which have a significant relationship with profitability, some similarities and differences are found between the findings of this study and earlier

studies. In the case of LIQ, TEXP, INT and LogSIZE, the effects of these determinants are similar to both conventional and Islamic banks' profitability. The effects of FIIV and MKTSH, however, are different between these two banking systems. While the two variables are expected to have a positive relationship with profitability, an inverse relationship was found by this study.

As indicated by Table 8.1, DESA, DEIA, FIPS, FIMK, FIIV, IBNK, MKTPL, CPI and LogSIZE have no significant relationship with BITA. However, determinants which have a significant relationship are CRTA, DECA, TEXT, INT, LIQ, IFIN, MKTSH and MON.

As expected the effects of independent variables on BITA are very similar as in the case of TITA. There are, however, a few results which require further discussion. For example, two internal variables (i.e., CRTA and DECA) were insignificant with TITA, but significant with BITA. Each 1% increase in CRTA will increase BITA by 0.053% and this finding is in line with the common belief that any increase in capital will increase profitability. Similarly, each 1% increase in DECA will increase BITA by 0.034%. This finding is in line with the findings of previous studies. Since DECA is only significant with BITA and not with TITA, this finding serves as an indicator that a current account facility generates no additional income to the banks as a whole and operates only as a cost-saving measure (the banks do not reward the current account holders as they do other depositors).

The effect of INT on BITA also deserves further elaboration. While INT had a significant relationship with both TITA and BITA, this relationship, however, moved towards a different direction, that is, a positive relationship with TITA and a negative one for BITA. One possible reason for this occurrence is the possibility of a close relationship between interest rates and profit-sharing ratios imposed by Islamic banks on their users and providers of funds. For example, when interest rates increase,

Islamic banks will also increase the profit-sharing ratios with the users of funds to the banks' favour, and at the same time they have to increase the profit-sharing ratios with the providers of funds to the depositors' favour.

Table 8.1 indicates that DESA, DEIA, FIMK, FIIV, IBNK, TEXP, MKTPL, MKTSH, MON, CPI and LogSIZE have no significant relationship with BTTA. However, determinants which have a significant relationship are LIQ, CRTA, DECA, FIPS, IFIN, and INT. One of the interesting findings between profitability determinants and BTTA which needs to be highlighted is that there is no significant relationship between external variables and BTTA. All significant variables are the internal variables or those within the control of management. Interestingly, total expenditure is seen to have no effect on net profit before tax.

There are two interesting findings with regards to BTCR and ATCR which need to be highlighted. Firstly, out of five profitability measure ratios, BTCR is the only ratio which MKTPL had a significant relationship with. This finding indicates that at any point in time, profit before tax of banks in a monopolistic market is higher by 45.715% than their counterparts in a competitive market. Secondly, it seems that any increase in the amount of CRTA will reduce BTCR by 0.721% and ATCR by 0.365%. This relationship indicates that an increase in capital does not generate any advantage to the shareholders.

Objective 2:

To determine the profitability of Islamic banks which operate in two separate markets, i.e. monopolistic and competitive markets.

As explained in Chapter 6, the effect of competition on the profitability of Islamic banks is measured by the strength of the relationship between the market place (MKTPL) and all the profitability measure ratios. As shown in Table 7.3, MKTPL

had an insignificant relationship with almost all profitability ratios. The only significant relationship though at a 10% level was with BTCR.

The insignificant relationship between MKTPL and most profitability ratios means that the nature of the market (i.e., monopolistic or competitive) does not have any influence on the profitability level of banks operating in those markets. In the case of BTCR, this study found that in any scenario, profit before tax deflated against total capital for banks operating in a monopolistic market is higher by 45.715% than their counterparts in a competitive market. This finding confirms the normal theory of the firm that shareholders' wealth is maximised in a monopolistic market.

Objective 3:

To test existing profitability theories within the Islamic banking system.

This study attempts to explore the existence of conventional banking profitability theories within the Islamic banking system. The theories in question consist of market-efficient theory, expense-preference theory and risk-aversion theory. While the result indicates that risk-aversion theory does exist at Islamic banks, this study finds no support for the existence of efficient-structure theory and expense-preference theory in the Islamic banking system.

8.4 Limitations

This study has several limitations. These limitations are divided into three broad areas, namely, theoretical and conceptual foundations, data collection, and accounting and auditing considerations.

The Islamic banking system was only established about three decades ago. Within this period, not many empirical studies have been conducted which lead to the establishment of theoretical and conceptual foundations for this subject. The absence of relevant literature in the area of profitability studies involving Islamic banks is considered as a first limitation to this study. There is no empirical study available which determines the factors that effect the profitability of Islamic banks, the results of which could be used as a foundation for this study.

The second limitation is associated with the data collection. The selection of samples was highlighted in Chapter 1. Since this study involves Islamic banks world-wide, an attempt was made to include all existing Islamic banks in the sample framework. A list of Islamic banks supplied by the International Association of Islamic Banks was used as a source of reference. A total of 32 Islamic banks from 17 countries were selected as samples. Nineteen banks from 12 countries replied to the request for data, constituting a response rate of 59.38%. Several reminders were sent to the unresponsive banks but no further replies were received.

Although 19 banks responded to the request for data, only those annual reports from 13 selected banks were considered suitable for the study. These 13 banks provided a total of 121 observations (i.e., data points). Six banks with 59 observations were classified as banks which operated in a monopolistic market, whereas seven other banks with 62 observations were deemed to be operating in a competitive market. Islamic banks from Bangladesh, Jordan, Kuwait, Malaysia, Tunisia and the United

Arab Emirates were the monopolistic banks, whereas banks from Bahrain, Sudan and Turkey were considered as the competitive banks.

Issues related to the accounting systems and auditing practices adopted by Islamic banks imposed several limitations. The measurement and reporting of business transactions which are carried out by Islamic banks through mechanisms permitted by *Shariah* tend to differ from what are generally accepted accounting principles in Western societies (Karim, 1990). The prohibition of *riba*, for example, has important implications for the several Western accounting procedures in which interest calculations are integral. For example, in the United States, standards and procedures relating to pension benefits (SFAS 87 and 88), amortisation of long-term debt (APB 12), interest on receivable and payable (APB 21), lease capitalisation (SFAS 12), debt restructuring (SFAS 15), debt defeasance (SFAS 87), assessing and reporting superannuation liabilities (SFAS 88), and the early extinguishment of debt (APB 26) are all based on discounting procedures invoking a time value of money. Such discounting procedures, however, are not permitted by Islam (Hamid, et al., 1993).

At present, there is no internationally accepted framework of uniform and comprehensive accounting standards or auditing guidelines for Islamic banks. As a result of this, Islamic banks have developed different accounting policies for essentially similar transactions, leading to different revenue recognition methods, and differing bases of classification and disclosure in their financial statements (Simpson and Willing, 1996). The variation in accounting policies adopted by various Islamic banks was discussed in Section 4.5.

In response to this situation, preliminary steps have been taken to provide Islamic banks with their own accounting standards. The first step towards promulgating accounting standards which regulate the financial reporting of Islamic banks was taken by the Islamic Development Bank (IDB) in 1987. A committee established by

IDB suggested various standards to be followed by Islamic banks. Usage of these standards, however, has not materialised because the committee failed to suggest how the promulgated standards could be enforced. The second attempt to establish accounting standards for Islamic banks was undertaken by the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI) which was established in Bahrain in 1991. This body has so far released three statements which cover the objectives and concepts of financial accounting for Islamic banks, as well as the presentation and disclosure of financial statements. Like the standards promulgated by the IDB committee, the adoptation of the standards suggested by AAOIFI is also arguable for AAOIFI does not have substantial support from the monetary authorities of the various countries in which Islamic banks operate. In the meantime, it is likely that each Islamic bank will retain its own accounting policies in preparing and presenting its financial statements.

Although the non-existence of accounting standards among Islamic banks will have some impact on the uniformity and comparability of annual reports used in this study, this limitation need not be considered as a major flaw. This is because the majority of internal variables used in this study are disclosed clearly in all annual reports of the sample banks. In the case of income statements, however, minor adjustments are required. This is because not all income statements of Islamic banks used in the study are presented in line with the standard format as prescribed in Section 6.1.2. Although there is a concern among the external auditors on several auditing issues involving Islamic banks, these issues, nevertheless, do not detract from the reliability of the figures presented in the annual reports (Simpson and Willing, 1996). All financial statements used in this study are verified by external auditors.

8.5 Implications

This study makes a significant contribution to knowledge in the areas related to its objectives (Section 1.1). In the process of examining various aspects of Islamic banking, this study found conspicuous areas which need to be studied and explored empirically.

This study finds that not all internal and external variables have significant impacts on the profitability of Islamic banks. Internal determinants such as liquidity, capital and reserves, funds in current accounts, investment in profit-sharing activities, investment in Islamic securities, the percentage of the profit-sharing ratio between the bank and the depositors, the percentage of the profit-sharing ratio between the bank and the borrowers, and the total expenditures are found to have significant impacts on the profitability of Islamic banks. In the case of external determinants, the factors that significantly influence the profitability of Islamic banks comprise regulation and competition, the market place, interest rate, money supply, and size of the bank.

By identifying the factors that influence profitability, this study identifies significant implications for the top management of Islamic banks. One of the most important details provided by this study is the delineation of factors that effect the total income from operations received by an Islamic bank. This study has identified that internal factors such as liquidity, total expenditures, funds invested in Islamic securities, and the percentage of the profit-sharing ratio between the bank and the borrower of funds are highly correlated with the level of total income received by the bank. Similar effects are found for external factors such as interest rate, market share and size.

The management of Islamic banks now know that an upward movement in liquidity, the percentage of the profit-sharing ratio between bank and borrowers, total expenditures, interest rates and size of assets generates more income for the banks, but

a similar movement in funds invested in Islamic securities and market share will have an inverse relationship with the banks' income.

Other determinants such as funds deposited into current accounts, total capital and reserves, the percentage of profit-sharing between bank and depositors, and money supply have no relationship with a bank's total income but have significant impacts on the actual profits received by the bank (BITA and BTTA). Therefore, while formulating internal policies which directly relate to factors that influence the level of TITA, similar attention should also be paid to factors that influence BITA and BTTA.

This study also highlights some similarities and differences on the effects of internal and external determinants of profitability of Islamic banks. Factors such as liquidity, total capital and reserves, funds deposited in current and savings accounts, total expenditures, money supply, interest rate, inflation and size seem to have a similar impact on both conventional and Islamic banks. On the other hand, factors such as funds deposited in investment accounts, assets, and market share seem to have moved towards a different direction. There are, however, various possible reasons which influence these differences (details are provided in Chapter 7).

The similarities that exist on the effects of determinants on profitability for both conventional and Islamic banks could be due to various reasons. Islamic banks not only operate within the same environment as conventional banks but it is likely that they are also using the same techniques as conventional banks in managing assets and liabilities. For example, Islamic banks are known to have used market interest rates as a bench-mark in fixing their profit-sharing and mark-up ratios. Similarly, their deposit facilities resemble the facilities of conventional banks. These findings, therefore, refute the opinions of some scholars who believed that under no circumstances can a comparison be made between Islamic and conventional banks (Hassan, 1993).

This study also provides evidence that the nature of the market does not have any linkage with the profitability of an Islamic bank. If a protectionism policy is introduced just to ensure the viability and the profitability of an Islamic bank, then this finding rebukes such policy development. Therefore, the protectionism policy adopted by several Muslim countries is considered an inappropriate policy for the future development of the Islamic banking system. The more Islamic banks in operation means the faster the growth of this new system and the more benefit to Islamic communities. Increasing the number of Islamic banks in operation could also pave the way for the establishment of an Islamic financial market.

With regard to the profitability theories in the Islamic banking system, except for risk-aversion theory, this study finds no evidence for the existence of expense-preference and market-efficient theories. The existence of risk-aversion theory is in line with the current practice of Islamic banks. As explained in Chapter 4, Islamic banks are more conservative in their funds management policy. Financing on the basis on *mudaraba* and *musharaka* are avoided because of risk. The majority of Islamic banks are focusing their activities towards short-term financing using fee-based principles. Because of these policies, provisions for doubtful loans are reduced to a minimum, thus confirming the risk-aversion theory.

In the case of expense-preference theory, the findings suggest that expenses related to staff are kept to minimal level. This finding deserves further elaboration. The existence of this theory means the staff (especially at the managerial level) placed their benefits above the interest of the organisation. Therefore, the finding of this study leads to the conclusion that the staff of Islamic banks are placing the interests of the organisation above their own interests. On the other hand, this finding can also be used as an indicator that Islamic banks want to keep their staff expenses down by recruiting a minimum number of staff. If this hypothesis is in fact true, Islamic banks

are, therefore, neglecting one of their duties, that is, to train and produce as many Islamic bankers as possible.

The non-existence of market-efficient theory in the Islamic banking system is also another interesting area which needs to be explored further. Since this theory postulates that firms with a competitive advantage become large and earn more profit, Islamic banks seem not to fall within this category. Instead of generating more income, an increase in deposits reduces the profits to Islamic banks. There are two possible reasons for this phenomenon. First, the effects of the profit-sharing concept practiced by Islamic banks wherein the more income generated from banking business will mean more profit for the depositors. Second, since Islamic banks are competing with established conventional banks, they usually reward their depositors with a comparable rate of return. The nature of Islamic bank products is, however, often inconsistent with the generation of a steady stream of income that is comparable with interest-based products. Since the result of this study indicates that the interest rate is closely correlated with the profits of Islamic banks, there is a possibility that the management of Islamic banks are adopting the "smoothing" policy. This term refers to the policy where the management tries to smooth the reported profits, through the operation of provisions and reserve accounts in order to report a 'market' rate of return (Simpson and Willing, 1996).

8.6 Future Research

This study also identifies several areas for future research opportunities. The first opportunity is in the area of the theory and concept of Islamic banking. As elaborated in Chapter 2, Islamic banks should not have objectives and philosophies similar to ordinary business entities. Islamic banks have to incorporate both profit and morality into their objectives and their trade activities are to be conducted in a faithful and

beneficial manner. To what extent Islamic banks are upholding these concepts is yet to be empirically studied. In the case of social objectives, for example, only a select number of Islamic banks are really showing a great interest by introducing a special social programme (Haron, 1996). A further study can also be conducted to determine the attitude of people who associate themselves with the Islamic banking system. This attitudinal study should examine the belief of those who are managing the banks and those who are patronising these institutions. The findings of such studies will highlight whether religious doctrine is really the key element which encompasses the establishment of the Islamic banking system.

The second area of research opportunity is related to laws and regulations. As explained in Chapter 2, Islamic banks are governed by two types of laws, i.e. *Shariah* and positive laws. This study, however, finds that positive laws are playing a greater role in the operations of Islamic banks. *Shariah*, on the other hand, only plays a minor role, that is, by providing a set of principles governing the operations of Islamic banks. Since Islamic banks are based on religious doctrines, it is imperative that *Shariah* plays a major role in governing the whole operations of the Islamic banking system. Another area relating to laws and regulations is the role of the *Shariah* Supervisory Boards. In order for these bodies to play a major role in ensuring that Islamic banks operate in accordance with Islamic principles, clear guidelines which describe their functions and duties, reporting procedures, and auditing standards are required. A standard approach among all *Shariah* Supervisory Boards is considered timely because at present every Board has its own method of discharging its duties.

The area relating to the operations and practices of Islamic banks offers vast research opportunities. One of the most promising areas is related to asset-liability management. This study indicates that many of the profitability determinants have similar impacts on both conventional and Islamic banks. In view of this finding, it is

likely that some of the tools and techniques used in studies involving asset-liability management of conventional banks are suitable in the Islamic banking context.

One of the most promising areas for further research is related to the allocation of funds. As indicated in Chapter 4, all samples used in this study are channelling most of their funds into activities that are based on mark-up. Islamic scholars believe that mark-up principles are permitted in Islam, but they recommend that the usage of these principles is only when the profit-sharing principles cannot be implemented. The finding of this study suggests that funds invested in mark-up activities (FIMK) have no significant relationship with profitability. In fact, the sign of coefficient indicates that the more funds invested into these activities the less profit the bank will generate.

It is now empirically proven that the conventional interest rate is closely related to the profitability level of Islamic banks. This study, therefore, confirms the allegation from some quarters that Islamic banks are using interest rates as a benchmark in fixing their charges. Similarly, there is truth in the suggestion made by Nienhaus (1983) that the profit-sharing ratio of Islamic banks should be similar to the interest rate even though this idea is condemned strongly by other scholars (Siddiqui, 1983; Ahmad, 1983; Khan, 1983). Since interest is strongly condemned by Islam, it is considered necessary that this particular area is studied in much greater detail.

Finally, this study deals the profitability aspects of Islamic banks on a global basis, country specific analysis with additional variables such as per capita income, number of person per branch, banking habits, savings rate and preference for Islamic investment are interesting areas for future research.