opción

Revista de Antropología, Ciencias de la Comunicación y de la Información, Filosofía, Lingüística y Semiótica, Problemas del Desarrollo, la Ciencia y la Tecnología

Strategic Choice and Operational Performance: A comparative study of commercial banks in Oman

James Rajasekar & Y. Sree Rama Murthy
Sultan Qaboos University

Abstract

The objective of this paper is to investigate various strategies adopted by banks in the Sultanate of Oman and to explore how these strategies may have helped these banks overcome different operational difficulties during periods of crisis. The empirical analysis in this study was done using binary logit regression technique with data from the Bank Scope database. Data was drawn from the balance sheets and income statements of commercial banks, and this data ranges from December 1999 to December 2017. Data from 1999 to 2009 was used for estimating the logit equations, and data from 2012 to 2017 was used for testing the predictive ability of the model. From a strategy point of view, our study of Omani banks focuses on the financial crises of 2000-2001 and 2008-2009, and the model predictions for years 2012 to 2017 brings forth the following conclusion: In order to ensure that a bank performs well (in terms of profit and asset growth), the bank's management should focus on capital account management, interest spread management, good loan quality, and high loan-to-deposit ratios. Finally, we also found that cost management and liquidity management are two areas of strategic choices that are not particularly important.

Elección estratégica y rendimiento operativo: un estudio comparativo de bancos comerciales en Omán

Resumen

El objetivo de este documento es investigar varias estrategias adoptadas por los bancos en el Sultanato de Omán y explorar cómo estas estrategias pueden haber ayudado a estos bancos a superar diferentes dificultades operativas durante los períodos de crisis. El análisis empírico en este estudio se realizó utilizando la técnica de regresión logit binaria con datos de la base de datos de Bank Scope. Los datos se obtuvieron de los balances y los estados de resultados de los bancos comerciales, y estos datos van de diciembre de 1999 a diciembre de 2017. Los datos de 1999 a 2009 se usaron para estimar las ecuaciones logit, y los datos de 2012 a 2017 se usaron para probar la predicción capacidad del modelo. Desde el punto de vista de la estrategia, nuestro estudio de los bancos omaníes se centra en las crisis financieras de 2000-2001 y 2008-2009, y las predicciones del modelo para los años 2012 a 2017 arrojan la siguiente conclusión: para garantizar que un banco tenga un buen desempeño (en términos de crecimiento de ganancias y activos), la administración del banco debe enfocarse en la administración de la cuenta de capital, la administración del diferencial de intereses, la buena calidad de los préstamos y las altas tasas de préstamos a depósitos. Finalmente, también encontramos que la administración de costos y la administración de liquidez son dos áreas de opciones estratégicas que no son particularmente importantes.

Palabras llave: bancos; Gestión del rendimiento; Regresión logarítmica; Crisis financiera; Omán

1. INTRODUCTION

This paper investigates different strategies adopted by banks in the Sultanate of Oman and studies how these strategies helped these banks to overcome operational challenges. The paper also focuses on strategies adopted by commercial banks in Oman during the two crisis periods which impacted Oman's economy and banks over the last decade. The first crisis period centered around the years 2000 – 2001, and the second crisis centered between 2008 – 2009. Needless to say, these were also the years in which the global market witnessed economic downturns such as in 2008. Recent articles in the financial press indicate that the next major financial crisis may come sooner than one might expect (Rogoff, 2019)—JP Morgan claims it will be in 2020. (Stubbly, 2018)

In general, 1999 to 2003 was a challenging period of profitability for a majority of the banks in the region; particularly, the commercial banks in Oman. Profitability as measured by ROE (return on average equity) for Omani banks as a group dropped to single digits during this period. Profitability was below average (below 15%) for a majority of GCC banks. This was a period during which banks reported large loan losses due to deterioration in credit quality and resulting credit defaults. 2000 and 2001 were also difficult years for the stock market in Oman—in years 2000 and 2001 stock returns were -19.6% and -25.2%.

In 2008, the stock market in Oman saw a 39.8% drop in the MSM (Muscat Securites Market) General Index, but banks in Oman

managed to sail through this period with less turbulence when compared to the earlier crisis. Average bank profitability (measured using return on equity) dropped to 11.95% in 2009 compared to 14.67 % and 16.40 % in previous two years…this is grammatically incorrect, not sure what you're trying to say. Some banks managed   to overcome this period of crisis. The objective of this paper is to identify the strategy or strategies used by banks to overcome crises such as the ones described above.

2. REVIEW OF LITERATURE

Strategies to prevent a systematic crisis give importance to "ratio watching." Monitoring ratios regularly and comparing them with pre-determined prudential norms helps banks take preventive action before the problem leads to a crisis. Studies find that banks with robust loan, liquidity, and capital ratios are better equipped to survive a crisis. (Bank for International Settlements, 2006; Beltratti and Stulz, 2009).

In 2008, Berger and Bowman published a paper analyzing the level of liquidity maintained by banks before and after a banking crisis. After examining data related to 5 major crises, they found that there was a sharp increase in liquidity before each crisis. Berger and Bowman also found that large, commercial banks increase their profitability, liquidity and market shares during a crisis and, consequently, their competitive positions improve in the post-crisis period. Small commercial banks with high capital ratios also manage

to emerge stronger from a crisis (Berger and Bowman, 2008). Other studies also conclude that the ability to create liquidity and above average capital adequacy ratios when required make all the difference between bust and survival (Branden and Lewis, 1986).

European Commission (2017) identified three ratios crucial to helping a bank overcome an economic crisis—it needs to be low in non-performing loans, high on capital adequacy (CAR) and high in profitability (ROE).

Preventing a banking crisis is important because of the ripple impact on the real sector. During a banking and financial crisis, credit supply gets reduced, interest rates increase, cost of borrowing skyrockets and corporate investment suffers. All of these factors push the economy into a recession (Dell, Detragiache and Rajan, 2008; Bernanke and Gertler, 1989).

3. OBJECTIVE

The objective of this paper is to investigate various strategies adopted by banks in the Sultanate of Oman and to explore how these strategies may have helped these banks overcome different operational difficulties during periods of crisis. A second objective of the paper is to develop, estimate and test an empirical model to identify strategic financial variables which help banks to outperform even during periods of crisis.

4. METHOD

This paper is based on two theoretical frameworks: (a) a finance based framework and (b) a competitive strategy based framework. While the financial framework uses the methodology adopted by Prefontaine, Thibeault and Bell (2002) to measure bank performance, the competitive strategy framework uses the Michael Porter's Five Forces techniques to study the competitive structure that analyses the intensity of competitive rivalry and profitability in the industry. Many previous studies used Porter's Five Forces model to study the performance of the banks from a strategic perspective (Smith, 2006). Prefontaine, Theibault and Bell (2002) suggested that a bank's performance can be assessed by measuring the following five management dimensions: capital account management, liquidity management, interest rate risk management, credit risk management and profitability management.

Depending on the purpose of the study, profitability in an industry can be measured by a variety of models at a generic level and through ratios at the micro industry level. Porter's Five Forces model has been chosen for the macro framework because it accurately assesses the competitive structure in an industry and its profitability in the long run (Porter, 2008; Rajasekar & Raee, 2013; Smith, 2006; Dobbs, 2014; Karagiannopoulos et al., 2005; Carle et al., 2005).

The banking industry in Oman has evolved into maturity during the past decade or so. Since the development of the internet, bank strategies have also changed from operating purely in a physical

location to having virtual online services. This transition ushered in increased competition, innovation, and risks for the incumbent banks. The following section uses Porter's Five Forces framework to analyze the industry structure and profitability of the banking industry in Oman.

1.   *Threat of New Entrants*

Since banks in Oman are regulated by the Capital Market Authority (CMA) and meet stringent guidelines to enter the market, potential entrants must find it challenging to enter this industry. Because of this looming difficulty, the threat of new entrants is typically rather low. However, banks are indirectly threatened by other companies that offer financial services, such as Non-Banking Financial Companies (NBFCs). Other entrants threatening commercial banks are specialized banks, such as Islamic banking. These banks focus on customers who want to invest in or bank with banks aligned with Islamic principles. Recent studies reveal that many Muslim customers are switching their accounts from regular commercial banks to new Islamic banks (Al Ghammari and Ahmed, 2017; Al Balushi et al. 2019). This principle-dependent shift is a serious threat to existing commercial banks.

Threat of New Entrants

- Low risk of new entrants as the treasury business needs high capital. (+)

- Banking industry is safe and controlled by the Government laws. Therefore, the risk of the success of new entrants is low. (+)

• Potential threat of Islamic banks in the Omani market; a lot of Muslim customers might switch to Islamic banks. (-)

• The government policy will protect the banking industry by rejecting the entrants of different substitutes. (+)

• Retaliation will be expected if new entrants are entering the market. (+)

• The economies of scale will be a high barrier to a new entrant. (+)

• Lack of experience in the Omani banking market reduces the threat of new entrants. (+)

• Strong customer loyalty makes the threat low. (+)

• Strong brand names and marketing cost will reduce the threat of new entrants. (+)

2.   *Power of Suppliers*

According to Ackerman (2008), depositors and credit market are the suppliers for any bank in the world. In this case, the depositors are also classified as customers of the banks. Since banks determine interest rates and banking fees such as overdraft and wire transfer fees, customers generally have limited bargaining power. Retail depositors certainly don't have any bargaining power. On the other hand, if the banks are smaller and can attract a group of large depositors (large companies), then the latter can demand better interest rates and services, which in turn tilts the power to the supplier side. If banks lose customers (suppliers) they will more likely gain other customers at a

certain stage in their operation; therefore, this makes the power of suppliers relatively low.

<u>Bargaining power of supplier</u>

- Suppliers have many substitutes in the market which will increase their power and the bank industry will not be an important customer. (-)

- The suppliers' products are very important to the bank industry. (-)

- Suppliers have no threat of forward integration. (-)

- There are a lot of different global sources which reduce the power of suppliers. (+)

- The suppliers industry is dominated by many firms which reduce their power. (+)

- Suppliers' products are not differentiated which reduce the suppliers power. (-)

3.   *<u>Power of Buyers</u>*

Buyers are the customers of banks for various financial products the former has to offer. Buyers, in this case, are divided into two categories: large companies and retail customers. Large companies deposit more money and take out loans quite often. Because of the nature of this relationship, the customers of these companies demand better services and lower prices. However, the situation is different for retail workers. Since they take loans, get mortgages and other long-term oriented products, they practically have no power over the banks.

Because of this long-term commitment, these customers are stuck with their banks even if the banks don't offer better products and services.

Bargaining power of Buyers

• Most of the banking industry's products provide similar services and benefits, which increases the power of buyers. (-)

• Existing customers are concerned about the product and quality, which forces the industry to further develop its products and services. (-)

• As the result of the internet, buyers can obtain substantial information about the products' costs, which increases the buyers' power. (-)

• Government and private sectors require bank accounts to transfer employee salary, a requirement that forces people to use the bank industry's services. This forced dependence can substantially decrease the power of the buyer. (+)

• Buyers' domains are high as a result of increased products and service prices. They need loans to manage the basic needs of their car, house, and education fees. This fact decreases the power of buyers. (+)

• The risk of backward integration is low due to high capital requirements. (+)

• The government facility of different sources of loan and financial companies increase the power of buyers. (-)

• The availability of exchange companies such as Western Union increases the power of buyers. (-)

4. *Availability of substitutes*

There are many substitutes to the banking industry. For example, Non-Banking Financial Service companies have the potential to offer products and services similar to those of conventional banks, but NBFS companies' prices are relatively cheaper than these banks. The widespread use of internet has also given customers substantial information regarding banking products available internationally, information that was not available a decade ago. This increased access makes customers keener to switch to a substitute. Another potential substitute, as discussed in *The Threat of New Entrants*, is the concept of Islamic banking. Though Islamic banking has existed for hundreds of years, it was only made available to the Omani market since last few years. Pious Muslims who want to invest their money based on Islamic principles prefer Islamic banking products over conventional banking products (Belwal and Al Maqbali, 2019; Al Balushi et al. 2019; Suhartanto, 2019). This substitute as described is a serious threat to the established banking industry.

Threats of substitutes

• Till date, there is no strong substitute to the banking industry's products. (+)

• The arrival of Islamic banks in the country may be a big threat to the existing bank industry, since they align with Islamic principles. (-)

• The banking industry offers unique, differentiated products. (+)

• There are several companies that offer investing services for individuals, which reduce the monopolizing power of the banking industry. (-)

5. *Competitive rivalry*

While there are a few banks in Oman, there exists hyper competition among them within this industry. Two decades ago, Oman had less than four banks. Today, that number had almost doubled to seven local banks, two Islamic and nine foreign with local branches (CBO, 2019). Since competition is fierce, banks can survive and sustain their competitive advantage through differentiation and by innovating and bringing new financial products to the market. One of the main competitive levers of the banking industry is using technology to gain a competitive advantage. Today, technology is eliminating the many entry barriers for newer banks, especially ones created by well-established banks from developed countries. This widespread access serves as a massive threat to existing competitors.

Rivalry Among Existing Competitors

• There are several local and international competitors. (-)

• There is a strong price battle between these competitors, which reduces the overall income. (-)

• There is a great expansion of different banks which may affect the industry profits. (-)

• There is a marketing battle and strong brand names which will be very costly to the firms. (-)

• Among the competitors, there are new, unique products. (-)

- The banking industry business is a high-risk industry as any global financial crisis may impact it strongly. (-)

- Oman's geography makes it difficult to open new branches in the internals villages. (-)

- The government encourages smaller businesses by offering capital with low interest, which increases the threat of new competitor. (-)

- The Housing Ministry offers low interest for individual loans. (-)

- The Sanad project offers capital for small businesses with low interest that will be repaid in 5-10 years. (-)

Bank Management Ratios and Strategy

The paper focuses on strategies used by Omani banks to generate above-average profitability. The strategy used by the bank ultimately influences variables such as revenue, cost etc. and translates finally into profit. For example, if the bank uses a strategy of depending more on own funds rather than borrowed funds to finance its lending program, this would translate into lower interest expense, and will finally bring in more profit.

The dimensions and ratios used in the study are divided into five broad groups:

- Capital Account Management Ratios
- Profitability Management Ratios
- Liquidity Management Ratios

• Interest Rate Risk Management and Credit Risk Management Ratios

• Cost Management Ratios

Capital account management strategies adopted by banks are designed to achieve two goals. One goal is to satisfy central bank regulations related to capital adequacy. The Basel committee on banking supervision has been revising the capital regulation guidelines from time to time, and central banks all over the world are adopting these regulations. Currently, banks in Oman are in the process of implementing the Basel III guidelines.

The second goal related to capital account management is related to asset growth. Unless a generated internal capital through retained earnings manages to bring in fresh capital, its growth will be constrained. To measure capital account management policies, the ratio used in this paper is "Equity to Total Assets" (EQUITYTA).

Equity capital and profitability have an inverse relationship. Assuming return on assets remains unchanged, banks that use less equity capital to support the same amount of assets will experience a higher level of return on equity and will therefore report higher profitability figures.

A bank's liquidity management strategy largely depends on conditions within the money markets. It is critical for a bank to hold enough liquid assets to take care of deposit withdrawals and to loan disbursements. Furthermore, central bank regulations also imply that a bank has to keep enough cash and near-cash assets over and above a minimum required level. Some banks borrow money in the money

market to take care of cash withdrawals while other banks strategically keep sufficient cash and liquid government securities. In this study, we use two ratios to measures bank liquidity. One is the ratio of "Liquid Assets to Deposits" (LIQCD). Liquid assets are defined as cash +T-bills + due from banks. The other measure of liquidity is the "Loan to Deposit" ratio (LOANDEP).

A typical commercial bank faces interest rate risk because of the nature of the business of banking. A bank takes deposits as input and lends the same at higher rate of interest. The difference between the deposit rate and the lending rate is the spread, also referred to as the net interest margin. Interest rates change because of central bank actions and demand-supply conditions in the loanable funds market. When interest rates in the macro-economic environment change, net interest margins of a bank change due to asset-liability maturity mismatches and re-pricing risk. Banks in Oman have short term deposits, which are then used to fund long term loans. When interest rates increase, short term deposits get repriced faster than long term loans and the bank's net interest margins gets squeezed. Net interest margin (NIM) is used to measure interest rate risk in this paper.

Credit risk is measured as the ratio of annual loan loss provisions to net interest revenue for the year (LLPNIR). Managing credit risk is one of the most important elements of a bank's management strategy. If credit risk is poorly managed, a bank is doomed to fail. Loan losses are doubly crippling for a bank. First, if a loan is classified as non-performing, the bank's interest income will suffer. Second, loan loss provisions have to be shown as expenses in

the income statement and the bank's profit will consequently be reduced.

Cost management is another factor that influences a bank's performance. In the case of banks, non-interest expenses—primarily staff expenses and technology expenses—are the main facets of cost management. Interest expenses are not included in cost management ratios because interest costs have already been accounted for as part of the net-interest margin ratio. The productivity and profitability of a bank can be improved by reducing the cost per unit of business undertaken. Since there is a direct correlation between bank performance and cost management, a bank with efficient cost management strategies can overcome stiff competition from rivals. The two measures of cost management used in this paper are the productivity ratio and the non-interest expense ratio. The productivity ratio is defined as the "cost-to-income" ratio (COSTINC). Cost-to-income ratio is calculated by dividing non-interest expenses by net interest income plus other income. Non-interest expense ratio (NIEAA) is defines as ratio of non-interest expenses to average total assets.

We use logit regression in this paper for estimation. This regression method allows us to find which variables primarily influence a bank's performance. Logit is a binary regression technique used for estimation in the presence of a qualitative dependent variable.

$$\log\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 ... \beta_k X_k$$

Or

$$P = \frac{e^{a+bX}}{1 + e^{a+bX}}$$

$X_1, X_2, \ldots$ are the independent variables, and P varies from 0 to 1.

The next section presents the data used for testing and prediction, reasons for using logit regression model and the results obtained.

5. RESULTS

In this paper we use regression analysis to examine the strategic behavior of banks. Here, we specifically explore the strategic choices that lead to good performance. A bank is identified as having performed well in a particular year if it exhibits above average profitability, above average operating performance and above average asset growth.

Two regression models are available when the dependent variable takes limited values. These are 'logit' and 'probit' (Woolridge, 2000). Both models are used when the dependent variable is binary (0 and 1) and the independent variables are continuous. The difference between logit and probit is marginal. Logit is more popular of the two, and we therefore used logit regression method (Gujarati, 2003). This paper uses maximum likelihood estimation technique

which is considered the better approach when estimating a limited dependent variable logit model (Hill et. al., 2001).

Data for the paper was drawn from the Bank Scope database. E-Views software was used for the purpose of estimating the logit regressions. For this study, data was drawn from the balance sheets and income statements of commercial banks. The study uses data from December 1999 to December 2017.

Data for the period 1999 to 2009 was used to estimate the logit equations, and data from 2012 to 2017 for testing the predictive ability of the model. The financial data of a particular bank for a particular year is considered one set of observations. Profitability, (defined as return on equity) of a particular bank for a particular year is treated as the bank year profit. For example, Bank Muscat's 2009 profit is treated as one observation. Fifty-eight such observations constitute the sample used in the study. The bank year profit (BYPRFT), that is, profit of a bank in a specific year may be high or low. Bank years (BDEP) are divided into two groups—bank years in which profit is above average and bank years in which profit is below average. BDEP is the qualitative dependent variable.

Table 1: Independent Variables and Symbols

Ratio	Symbol	Mean	Standard Deviation
Liquid Assets to Deposits	LIQCD	28.70794	9.0079738
Loan to Deposits	LOANDEP	87.4532	8.72238

		2	
Net Interest Margin	NIM	4.119322	0.7579901
Loan Loss Provisions to Net Interest Revenue	LLPNIR	20.13507	39.626243
Capital Adequacy Ratio	CAPITAL	16.51136	3.0125975
Equity to Total Assets	EQUITYTA	13.07012	2.212732
Cost to Income Ratio	COSTINC	45.4374	8.7084932
Non-Interest Expense to Average Assets	NIEAA	3.035193	1.3530685
Return on Average Equity	ROAE	13.80279	11.355838
Return on Average Assets	ROAA	1.85344	1.4389525

We defined the qualitative dependent variable for the logit as a bank year. The bank year variable can take on two values either zero or one. If a particular bank is identified as having performed well in a particular year then the dependent variable is given the value one, and if it has not performed well then the dependent variable value is zero. The primary benefit of the logit method is its ability to identify variables that contribute to excellent performance. The independent variables used in the regression are the ratios related to various dimensions of financial management: liquidity, credit risk, interest rate risk, cost, and capital account. Several regressions were estimated with

different combinations of variables representing the different facets of financial management. Four good regression estimates are reported below:

Table 2: Estimated Equations

EQN No. & Dep. variable	Constant	Indep. Var (1)	Indep. Var (2)	Indep. Var (3)	Indep. Var (4)	Indep. Var (5)	Indep Var (6)	McFadden R-squared and LR statistic
1. BDEP	2.037	-0.950 EQUITYTA *	0.0291 LIQCD	3.746 NIM *	-0.298 LLPNIR *	-0.0712 COSTINC		0.579 45.74*
2. BDEP	-8.75	-.306 CAPITAL	0.0527 LIQCD	2.809 NIM *	-0.140 LLPNIR *	0.042 COSTINC		0.496 38.49*
3. BDEP	1.218	-1.092 EQUITYTA*	.0054 LIQCD	5.136 NIM *	-0313 LLPNIR *	-1.934 NIEAA		0.610 48.22*
4. BDEP	-38.096	-1.525 EQUITYTA*	0.3001 LIQCD	6.376 NIM *	-0.387 LLPNIR *	-2.302 NIEAA	0.372 LOAN DEP**	0.693 54.77*
* significance at 1% level; ** significance at 5% level								

6. DISCUSSION

Equity-to-total assets (EQUITYTA) and capital adequacy ratio (CAPITAL) represent the capital account management strategy of banks. The equity-to-total assets variable is highly significant in three regressions indicating its massive importance. The coefficient is negative, implying that banks exhibiting good performance prefer to maintain low equity-to-total assets. In equation 2 (EQN 2), the CAPITAL variable is not significant. Since there are capital adequacy regulations in place, all banks in Oman maintain the required minimum capital. Our results indicate that banks that maintain lower equity-to-total assets while meeting the capital adequacy requirements of Central Bank of Oman showed better performance than banks with excessive levels of equity. Asset growth financed by lower equity (shareholders' funds) and higher amounts of deposits add to a bank's profit because the cost of deposits is low compared to the cost of equity.

All the estimated regressions show that ratio of liquidity to deposits (LIQCD) does not influence bank performance. Higher levels of liquidity do not add to performance. A potential reason for this is the fact that liquid assets do not add to the earnings of a bank. On the other hand, a lack of liquidity can lead to difficulties for a bank, implying that maintaining adequate liquidity is a requirement for a bank, although it does not contribute to better performance. This last conclusion is especially crucial, since our review of literature indicated

that during periods of financial crisis, adequate liquidity and adequate capital are necessary for a bank to overcome crisis periods.

Controlling loan losses is vital for a bank to perform well during both normal and crisis periods. The LLPNIR variable is statistically significant and negative in all the four regressions reported above. Higher loan losses decrease quality of performance. Our results clearly indicate that a strategy oriented towards high credit quality standards largely contributes to performance.

Ensuring that the spread between deposit interest rates and lending interest rates is high is fundamental to a bank's success. In all four regressions, the net interest margin (NIM) is statistically highly significant and bears a positive sign. This conclusion is in line with earlier studies, which indicate that net interest margins of banks in Oman are high compared to other countries.

Controlling costs is not especially important. Both the cost-to-income ratio (COSTINC) ratio and non-interest expenses-to-assets (NIEAA) ratio are found to be insignificant in all four regressions. Mean and standard deviation at 45.4 and 8.7 show that although different banks have had different cost-to-income ratios over the period of study, this has in no way affected the performance of Omani banks during the ten-year period under study.

Managing the loan-to-deposit ratio carries another foundational strategic choice for banks in Oman, since we found that this variable is highly significant (regression 4). The average loan-to-deposit ratio is 87.4 and the standard deviation is 8.4, indicating that the loan-to-deposit ratio can vary largely from bank to bank depending on each

one's strategy. In order to perform well, a bank should aim for a high loan-to-deposit ratio. Strategically speaking, this implies that a bank that funds its loan book growth with deposits will fare better than one that depends on other sources of funds, such as capital market. Furthermore, this implies that a bank should strive for deposit growth through advertising, branch network, and similar means so that the new deposits will create a large lending capacity. Some banks use alternate strategies to fund loan growth such as dependence on equity funds, money, and foreign exchange markets, but this dependence may not contribute to performance.

Predictive Ability Of The Logit Model

Logit estimates reported in the previous section are based on bank data from year 1999 to 2009. This section reports the predictive ability of the estimated logit model. Individual bank data for the period 2012 to 2017 was used for this purpose. This involves a four-step process.

1.   Estimate the logit value using bank data of the year selected for prediction.

2.   Calculate the "odds ratio" using the logit value.

3.   Calculate the probability using the "odds ratio." If the probability is more than the cut off value, we conclude that the bank's performance is good. If probability is below the cut off value, performance is poor.

4.   Check the predicted conclusions against actual data.

Data reported by Central Bank of Oman shows that Omani banks performed well in 2013. However, 2017 was a difficult year for

banks primarily because of macro-economic challenges posed by low oil prices. These two years were selected for testing the predictive ability of the model.

The logit model predicted that all banks except Bank Muscat were above the cut off value in 2013—the model could not predict the performance of Bank Muscat accurately for that year. For 2017, the logit model correctly predicted that the performance of all banks (except HSBC) was poor. The probability values for year 2017 were near-zero, implying poor performance. On the other hand, the logit model predicted that HSBC's performance was good, and the bank data correlated this prediction: HSBC indeed performed well. This bank consistently followed a strategy of low equity-to-total assets ratio and low levels of loan losses throughout the period from 2012 to 2017. Banks reporting poor performance in 2017 show very high LLPNIR (loan loss provisions to net interest revenue) and slightly higher equity ratios. In terms of strategy, bank managements need to increase net interest revenues in bad years, so that higher loan loss provisions don't have an adverse effect on the bank. It is possible to achieve this by changing the deposit and liability mix and altering the asset composition.

7. CONCLUSIONS

This research study investigated the Omani banks' financial and strategic performance during the past decade using the Logit model

and Michael Porter's Five Forces model. From a strategic perspective, the banking industry is facing severe competitive pressures from a few forces. In some cases, however, the banking industry has grown stronger. The government's role in regulating the banking industry and its products is quite large and heavily affects the fruit of this industry. The policy decisions and new legislation issued by the government have a large sway in the direction of the banking industry. As discussed earlier, a few years ago, only conventional banks existing in Oman, but a swift policy decision introduced by the government at a national level allowed Islamic banking, a decision that permanently altered the competition landscape of the industry. Today, every conventional bank has a bank dedicated to Islamic banking.

The study used balance sheet data from December 1999 to December 2017. Data for the period '1999 to 2009' was used for estimating the logit regression equations and data for years '2012 to 2017' was used for testing the predictive ability of the model. The logit model identified 'equity-to-total assets', 'loan loss provisions to net interest revenue' and 'net interest margins' as the key variables influencing a bank's performance. The logit model was able to correctly predict the performance of most banks before and after a banking crisis.

Our study of Omani banks during the periods around the financial crises of 2000-2001 and 2008-2009, and the model predictions for years 2012 to 2017, brings forth the following conclusions: In order to ensure that a bank is successful (in terms of profit and asset growth), the bank's management should focus on

capital account management, interest-spread management, good loan quality and high loan to deposit ratios. While this may be surprising to some, cost management and liquidity management are not particularly important areas of strategy.

The results obtained from the empirical analysis done in this study indicate that the methodology adopted is very useful for predicting bank performance. Further research using a larger sample of banks covering other countries, especially those operating in the G20 and the GCC may turn out to be greatly successful. The results and conclusions of the study are useful for both a bank's internal management as well as regulatory authorities.

REFERENCES

Ackerman (2008). The Banking Industry Problems and Competition, 24 Jan 2008. Retrieved from http://searchwarp.com/swa292998.htm

Al Balushi, Y., Locke, S. and Boulanouar, Z. (2019), "Determinants of the decision to adopt

Islamic finance: evidence from Oman", ISRA International Journal of Islamic. Finance, Vol. 11 No. 1, pp. 6-26. https://doi.org/10.1108/IJIF-02-2018-0020.

Al Ghammari, K., Ahmed, E. (2017). Customers' switching intention in Oman's banking industry, Journal of Business and Financial Affairs, 6 (2), pp. 2-6.

CBO (2019) Central Bank of Oman. https://cbo.gov.om/Pages/LicensedBanks.aspx (retrieved on November 11, 2019).

Dobbs, M.E. (2014). Guidelines for applying Porter's five forces framework: A set of industry analysis templates. Competitiveness Review, 24 (1), pp. 32-45.

Bank for International Settlements (2006) The Banking System in Emerging Economies: How Much Progress Has Been Made? (August 1, 2006). BIS Paper No. 28. Available at SSRN: http://ssrn.com/abstract=1188516 or http://dx.doi.org/10.2139/ssrn.1188516

Beltratti , Andrea and Stulz, Rene M. (2009). Why Did Some Banks Perform Better during the Credit Crisis? A Cross-Country Study of the Impact of Governance and Regulation (July 13, 2009). Fisher College of Business Working Paper No. 2009-03-012. Available at SSRN: http://ssrn.com/abstract=1433502 or http://dx.doi.org/10.2139/ssrn.1433502

Belwal, R, and Al Maqbali, A. (2019). A study of customers' perception of Islamic banking in Oman. Journal of Islamic Marketing, 10 (1), pp. 150-167.

Berger, A.N., & Bowman, C.H.S. (2008). Financial crises and bank liquidity creation. mimeo, University of South Carolina and Case Western Reserve University.

Bernanke, B.S., & Gertler, M. (1989). Agency costs, net worth and business fluctuations. *American Economic Review, 79*, 14-31.

Branden, J.A., & Lewis, T.R. (1986). Oligopoly and financial structure: the limited liability effect. *American Economic Review, 76*, 956-970.

Dell' Ariccia, G., E. Detragiache., & Rajan, R. (2008). The real effects of banking crises. *Journal of Financial Intermediation, 17*, 89-112. http://dx.doi.org/10.1016/j.jfi.2007.06.001

European Commission (2017). Banking sector and financial stability. Available   at https://ec.europa.eu/info/sites/info/files/file_import/european-semester_thematic-factsheet_banking-sector-financial-stability_en_0.pdf

Gujarati, D. (2003). *Basic Econometrics.* McGraw Hill Irwin.

Hill, C.R., Griffith, W.E., & Judge, G.G. (2001). *Undergraduate Econometrics.* John Wiley.

Karagiannopoulos, G.D., Georgopoulos, N., and Nikolopoulos, K. (2005). Fathoming

Porter's five forces model in the internet era. Info, 7(6), pp. 66-76.

Porter, M.E. (2008). The five competitive forces that shape strategy. Harvard Business Review, 86(1), pp. 79-93.

Prefontaine, J., Thibeault, A., & Bell, R. (2002). *Introduction to Bank Financial Management*. The Institute of Canadian Bankers.

Rajasekar, J. and Raee. M. (2013). An analysis of the telecommunication industry in the sultanate of Oman using Michael Porter's competitive strategy model. Competitiveness Review, 23 (3), 234-259. http://dx.doi.org/10.1108/10595421311319825

Rogoff, K., (2019). The next financial crisis may come soon – are we all that safe? *The Guardian.* https://www.theguardian.com/business/2019/feb/05/financial-crisis-us-uk-crash

Smith, A.D. (2006) Aspects of Strategic Forces Affecting Online Banking, Services Marketing Quarterly, 28:2, 79-97. https://doi.org/10.1300/J396v28n02_05.

Suhartanto, D. (2019) Predicting behavioural intention toward Islamic bank: a multi-group analysis approach. Journal of Islamic Marketing, 10(4), pp. 1091-1103.

Woolridge, J.M. (2000). *Introductory Econometrics: A Modern Approach.* Thomson South Western.

UNIVERSIDAD

DEL ZULIA