E-ISSN: 2469-4339

Management and Economics Research Journal, Vol. 6, Iss. 2, Pgs. 8, 2020

Original Research Article

Assessing Competitive Advantage of Banks in GCC Countries

Onour and Abdo

HATASO

Assessing Competitive Advantage of Banks in GCC Countries[1]

Ibrahim A Onour*, Mai M Abdo
School of Management Studies, University of Khartoum, Khartoum, Sudan.

***Correspondence:** onour@uofk.edu

Received: Jul 4, 2019; Accepted: Dec 15, 2019

Citation: Onour IA, Abdo MM. 2020. Assessing competitive advantage of banks in GCC countries. Management and Economics Research Journal, 6(2): 990011. https://doi.org/10.18639/MERJ.2020.990011

Abstract

The purpose of this paper is to assess competitive advantage gained by large-sized banks in the Gulf Cooperation Council (GCC) countries. To investigate the association between return to scale and profitability, the authors have adopted quintile and logistic regression analysis, using data for 81 and 84 banks operating in GCC countries during the years 2016 and 2015, respectively. Their findings indicate a positive association between bank size and increasing return to scale, implying that bigger banks show increasing return to scale, but with decreasing rate, as represented by the negative coefficient of the square of the asset variable. Their results also show medium and upper quintiles of profits are significantly and positively associated with assets, but negatively associated with deposits, implying banks with larger deposits are facing liability management problems. In general, these results support the evidence that large-sized banks in GCC countries are displaying competitive advantage gains over small-sized banks, but these competitive advantage gains are decreasing with bank size increase.

Keywords: Competitive advantage; Banks; Gulf Cooperation Council.

1. INTRODUCTION

The domination of large banks in the banking industry is caused by increasing return to scale that gives large banks the competitive advantage in cost minimization compared to its smaller competitors. The competitive advantage of bigger banks over its smaller counterparts is due to the reason that bigger banks can finance large projects of higher risk for the sake of higher profits (Tianxi, 2015). This is because smaller banks are restricted by their financial capacity to finance large projects of higher profits.

The most important sources of increasing return to scale in banking systems are proficiency and capabilities gained by large banks in vetting profitable investment projects as well as reducing bad loans. Once such selection expertise has been gained, banks with larger sizes gain higher lending capacity, and therefore maintain higher profits.

Another dimension enhancing competitive advantage of bigger banks is homogeneity of financial products of banks, which enables bigger banks to gain from competitive environment in the banking system. This is because the borrowing business firm prefers funding by a large-sized bank with more expertise to boost the quality of the investment project in the market. Also, bigger banks can compete better for public funding because they are trustier to investors as they can better diversify portfolio investments and reduce risks.

As a result, smaller banks, with a limited and low level of experience, are disadvantaged in the competition, as ultimately they would be dominated by big banks or will have to leave the business altogether.

[1] Gulf Cooperation Council (GCC) countries include Saudi Arabia, United Arab Emirates, Qatar, Kuwait, Oman, and Bahrain.

As a result, the number of banks remaining in the business keeps declining over time, but those that remain in business grow continuously bigger. As a result, the banking sector eventually becomes dominated by a few big and highly leveraged banks. There are strong practical implications of the findings that there is a significant relation between banks' size and return to scale. As commercial banks sell loans to investors, the competitive advantage gained by return to scale enhances cost-minimization strategies of big banks. They can then be advantageous to economic growth, as they can supply loans with lower costs while financing investment projects.

The remaining parts of the paper is structured as follows. Section 2 highlights the literature review. Section 3 gives a brief review of the methodology of the research. Section 4 includes the empirical analysis, and the final section concludes the study.

2. LITERATURE REVIEW

In this section, the authors summarize the debate on the impact of bank size on return to scale and banks' profitability. For ease of exposition, the authors divide these studies into two categories. The first category indicates those studies that find larger banks are more efficient in cost minimization, and therefore exhibit increasing return to scale, while the second category illustrates that bigger banks may not necessarily be more efficient in cost minimization than smaller ones.

Wheelock and Wilson (2012) employ nonparametric cost function using data from 1984 to 2006, on two separate samples with over 850,000 observations each. They find a significant relationship between a bank's size and increasing return to scale, implying that large banks have a cost-minimization advantage over smaller ones. Hughes and Mester (2013) use a risk-adjusted almost ideal demand system model on cross-sectional data samples from the years 2003, 2007, and 2010. Their finding indicates that if risk preference of managers is not included, there is insignificant evidence of association between a bank's size and return to scale. However, if risk preferences of managers is included, there is a significant relationship between a bank's size and return to scale. As a result, they conclude that any study that is not taking into account the risk-taking behavior of managers may not be accurate in estimating the link between banks size and return to scale. They go on to add that large banks have superior diversification benefits and cost-minimization options as a result of the large information systems they have.

Kumar (2013) points out that failing to account for market power may lead to misleading conclusions of a positive association between profitability and bank size. Babihuga and Spaltro (2014) indicate that large financial institutions have considerable cost-minimization advantages. Similarly, Clearing House's (2011) research paper shows that larger banks generate larger returns to scale, returns to scope, and innovate faster than smaller banks. Beccalli *et al.*'s (2015) study of 103 European banks during 2000–2011 used the stochastic frontier approach employing the translog cost function. Their findings indicate that banks with higher liquidity and larger equity capital enjoy increasing return to scale. Boot (2016) suggests that implicit or explicit government guarantees, such as too-big-to-fail (TBTF), may give artificial advantages to size when competing against smaller banks. Elsas *et al.* (2010) investigated international banks during1996–2008. Theyfind evidence of economies of scope through revenue diversification. Feng and Serletis (2010) and Feng and Zhang (2012) use a Bayesian output-oriented distance function and show evidence of increasing return to scale.

On the other hand, there are a number of studies indicating that larger banks may not necessarily be more efficient than smaller banks. Feng and Zhang (2014) use a random stochastic output distance function that allows for heterogeneous technology to find out that during the period from 1997 to 2010, technology was not part of bank's assets. As a result, large banks did not necessarily have better chances of cost minimization.

Restrepo-Tobon and Kumbhakar (2015) use a nonparametric input distance function, which assumes outputs are exogenous and inputs are endogenous. They find out that small banks show increasing return to scale, whereas large banks exhibited a constant or even decreasing return to scale. Davies and Tracey (2014) study a number of large international banks employing a translog cost function, and indicate that without adjustment to interest expenses, they show evidence of increasing return to scale, but when they adjust the data to interest expenses, they find return to scale changes to a constant return to scale. Miles

and Sapci (2017) use a panel data analysis for 198 banks to show that as bank size increases, return to scale decreases.

Given these conflicting results on banks' size and return to scale in developed countries, the current paper aims to fill the void of research in the relationship between banks' size and return to scale in Gulf Cooperation Council (GCC) countries.

3. METHOD(S)

A decision-making unit (DMU) may be scale inefficient, if it exceeds the most productive scale size (thus, experiencing decreasing return to scale) or if it is smaller than the most productive scale size (thus, failing to take full advantage of increasing return to scale). Fare *et al*. (1985) show that the source of scale inefficiency (increasing or decreasing return to scale) may be found for each DMU by comparing the measures of technical efficiency found under the assumptions of constant return to scale and variable return to scale models indicated in the following input-oriented model:

$$\text{Min}\left\{\pi-\varepsilon\left(\sum_{i=1}^{m}S_i^{-}+\sum_{i=1}^{s}S_r^{+}\right)\right\} \tag{1}$$

subject to

$$\sum_{j=1}^{n}\mu_j X_{ij}+S_i^{-}=\pi X_{io},\ i=1,2,\ldots m, \tag{2}$$

$$\sum_{j=1}^{n}\mu_j y_{rj}-S_r^{+}=y_{ro},\ r=1,2,\ldots s,\qquad j=1,2,\ldots n, \tag{3}$$

$$\mu_j\geq 0, \tag{4}$$ (VRT)

$$\sum_{j=1}^{n}\mu_j=1, \tag{5}$$ (CRS)

$$\sum_{j=1}^{n}\mu_j\leq 1, \tag{6}$$ (NIRS)

$$\sum_{j=1}^{n}\mu_j\geq 1, \tag{7}$$ (NDRS)

where S_i^{-} and S_r^{+} are slack variables indicating, respectively, the inputs and the output restrictions.

The objective function in Equation (1) minimizes the set of input variables taking into account the constraints in the Equations (2)–(7). The constraints in Equation (2) restrict that there is always a minimum set of input combinations, which represent the benchmark for the inputs set. Equation (3) stipulates that there is a maximum set of output combinations, which represent the output frontier that no output of all DMUs can exceed. Equations (4)–(7) reveal the conditions of constant return to scale, decreasing, and increasing return to scale. To estimate the relationship between return to scale and bank size in this paper, the authors have employed logit regression that links the binary values estimated from Equations (1)–(7) with bank size variables in the following logistic function[2]:

$$P\,(Y=1\,|\,X\beta)=\frac{\exp\,(X\beta)}{1+\exp\,(X\beta)},$$

[2] The binary numbers generated by setting the number 1 for each of the DMUs exhibiting increasing return to scale and 0 for decreasing return to scale.

where

Y = 1 at increasing return to scale
= 0 at decreasing return to scale,
X = bank size indicators.

4. RESULTS AND DISCUSSION

Classification of large and small banks in Table 1 is based on banks' asset sizes and then classifying banks at least 20% of the largest bank in the group as large and medium size banks. However, banks with assets of less than 10% of the largest bank size are classified as small banks[3]. Descriptive statistics analysis in Table 1 shows that there is no significant difference in size (assets and deposits) change considering small and large banks in the years 2015 and 2016.

Table 1. Descriptive Statistics.

	Log (Deposits)	Log (Assets)
2016—Large banks		
Mean	17.58	17.78
Standard deviation	0.50	0.50
Minimum Maximum No. of observations	17.00 18.60 18	17.18 18.81 19
2015—Large banks		
Mean	17.43	17.60
Standard deviation	0.50	0.54
Minimum Maximum No. of observations	16.87 18.40 18	17.03 18.71 23
2016—Small banks		
Mean	14.12	14.83
Standard deviation	1.81	1.23
Minimum Maximum No. of observations	8.32 16.21 46	12.03 16.43 48
2015—Small banks		
Mean	14.11	14.79
Standard deviation	1.87	1.18
Minimum Maximum No. of observations	8.19 16.10 49	12.06 16.31 49

[3]The large banks distribution across countries indicate 3 banks in Qatar, 6 banks in Saudi Arabia, 6 banks in UAE, and 1 bank for each of Kuwait, Bahrain, and Sultanate Oman.

However, it appears that there are significant size differences between large and small banks as indicated in the mean statistics of the two groups. The variance statistics (standard deviation and min/max) indicate that small banks exhibit higher variability of size changes compared to large banks. This implies that small banks are more vulnerable to size change risks.

Table 2 shows the quintile regression results using profit as dependent variable, and assets and deposits as independent variables. The coefficients for 5 quintiles, that is, from the lowest tail of profit (10%) to the highest tail of (90%) have been reported in the table. The findings in the table associate bank size, as represented in assets and deposit sizes, with profit categories from the lowest to the highest levels. This implies that results in the table attempt to answer the question: are smaller banks associated with smaller profit gains and do larger banks gain higher profits?

The quintile regression coefficients indicate that the coefficients of the asset variable are significantly and positively associated with medium and upper quintiles of profits, implying that larger banks are able to gain higher profits compared to smaller-sized banks. However, the authors' analysis also indicates that the coefficients of deposits are negatively associated with higher profits, indicating that banks with larger deposits are facing liability-management problems as deposit expansion reduces profits in these banks. In general, these results support the evidence that large-sized banks in GCC countries display competitive advantage gains compared to their counterparts of small sizes.

Table 3 shows positive and statistically significant associations between profitability as measured by return on assets (ROA) and increasing return to scale during the 2-year period, 2015–2016. This result implies that banks with higher profitability exhibit increasing return to scale or declining average cost. As a result, they are able to gain a competitive edge in attracting deposits compared to smaller banks, which face higher average cost.

Table 2. Bank Size and Profitability (Quintile Regression).

Quintiles	**0.10**	**0.25**	**0.50**	**0.75**	**0.90**
2016	Coefficients				
X1 (Std. errors) (*p*-Value)	0.35 (0.81) (0.66)	0.44 (0.05) (0.00)*	0.42 (0.08) (0.00)*	0.44 (0.12) (0.00)*	0.52 (0.24) (0.03)**
X2 (Std. errors) (*p*-Value)	−0.12 (0.64) (0.85)	−0.15 (0.04) (0.00)*	−0.16 (0.07) (0.02)**	−0.13 (0.09) (0.15)	−0.18 (0.19) (0.34)
Constants (Std. errors) (*p*-Value)	9.19 (4.43) (0.04)**	8.4 (0.29) (0.00)*	8.3 (0.48) (0.00)*	8.5 (0.69) (0.00)*	8.18 (1.31) (0.00)*
Pseudo R^2	0.12	0.24	0.36	0.43	0.45
2015					
*X*1 (Std. errors) (*p*-Value)	1.07 (1.88) (0.57)	0.88 (0.13) (0.00)*	0.96 (0.13) (0.00)*	1.12 (0.16) (0.00)*	0.97 (0.24) (0.00)*
*X*2 (Std. errors) (*p*-Value)	−0.34 (1.43) (0.57)	−0.23 (0.10) (0.02)**	−0.26 (0.09) (0.00)*	−0.41 (0.12) (0.00)*	−0.28 (0.18) (0.13)
Constants (Std. errors) (*p*-Value)	0.16 (11.26) 0.57)	1.66 (0.18) (0.04)**	1.23 (0.77) (0.00)*	1.13 (0.96) (0.24)	1.78 (1.44) (0.22)
Pseudo R^2	0.33	0.46	0.55	0.55	0.58

Note: dependent variable is log(profit), *X*1 represents log(assets); *X*2 represents log(deposits).

* significant at 1% significance level, ** significant at 5% significance level.

In Table 4, the authors investigate the link between size, as represented by the log of total assets of each bank, and return to scale using logistic regression analysis. The relationship between bank size and

Table 3. Return to Scale and Profitability.

Variable	Coefficient	*t*-Ratio	Marginal Effect
2016			
Return on Assets (ROA)	3.93	2.52	0.49
Constant	−2.37	−5.43	–
Log-Likelihood Function (LLF)	−29.15	–	–
Estrella R^2	0.16	–	–
Sample size	80		
2015			
ROA	35.90	2.81	4.22
Constant	−3.16	−4.22	–
LLF	−17.90	–	–
Estrella R^2	0.23	–	–
Sample size	51		

Table 4. Return to Scale and Bank Size.

	Logit Model			Probit Model		
Variable	Coefficients	*t*-Ratio	Marginal Effect	Coefficients	*t*-Ratio	Marginal Effect
2016						
S_1	9.58	1.56	0.38	5.42	1.46	0.43
S_2	−0.35	−1.69	−0.01	−0.20	−1.58	−0.016
Constant	−64	−1.45		−0.36	−1.35	–
LLF	−25	–	–	–	–	–
Estrella R^2	0.25	–	–	−24.83	–	–
Sample size	80			80		
2015						
S_1	9.66	1.46	0.19	5.50	1.46	1.02
S_2	−0.34	−1.52	−0.03	−0.19	−1.52	−0.03
Constant	−68.1	−1.42	–	−38.9	−1.42	–
LLF	−20.1	–	–	−20	−20	–
Estrella R^2	0.13	–	–	0.14	0.14	–
Sample size	50					

Note: *S*1 represents log of total assets, *S*2 represents square of *S*1.

increasing return to scale has been shown in Table 4, which indicates that bigger banks show increasing return to scale, but with decreasing rate, as indicated by the negative coefficient of square of the size variable.

5. CONCLUSION

To investigate the association between return to scale and profitability, the authors adopted quintile and logistic regression analysis using samples of 81 and 84 banks for the years 2016 and 2015, respectively. The variance statistics (standard deviation and minimum/maximum) indicate that small banks exhibit higher variability of size changes compared to large banks. This implies that small banks are more vulnerable to size-change risks. To answer the question, "are smaller banks associated with smaller profit gains, and do larger banks gain larger profit?" the authors employed quintile regression analysis to assess the association of bank size as represented in assets and deposit sizes with profit categories from the lowest (10%) tail of profit to the highest levels of (90%). The quintile regression coefficients indicate that the coefficients of the asset variable are significantly and positively associated with medium and upper quintiles of profits, implying that larger banks are able to gain higher profits compared to smaller sized banks. However, the analysis also indicates that the coefficients of deposits are negatively associated with higher profits, indicating that banks with larger deposits are facing liability management problems as deposit expansion reduces profits in these banks. In general, these results support the evidence that small-sized banks in GCC countries are displaying competitive disadvantages compared to their counterpart of larger sizes.

Author Contributions
Both authors contributed equally to this work.

Conflict of Interest
None.

References

Babihuga R, Spaltro M. 2014. Bank funding costs for international banks. IMFWP/14/71.
Beccalli E, Anolli M, Borello G. 2015. Are European banks too big? Evidence on economies of scale. Journal of Banking & Finance 58: 232-246.
Boot AWA. 2016. Understanding the future of banking: scale & scope economies, and Fintech. In The Future of Large Internationally Active Banks, Demirgüç-Kunt A, Evanoff DD, Kaufmann G (eds). World Scientific Studies in International Economics: 55. World Scientific: Singapore; 429-448.
Clearing House. 2011. Understanding the Economics of Large Banks. TCH Research Study, November 2011. Available at: https://bpi.com/wp-content/uploads/2018/07/20111107-tch-study-understanding-the-economics-of-large-banks.pdf
Davies R, Tracey B. 2014. Too big to be efficient? The impact of implicit subsidies on estimates of scale economies for banks. Journal of Money, Credit and Banking 46: 219-253.
Elsas R, Hackethal A, Holzh¨auser M. 2010. The anatomy of bank diversification. Journal of Banking & Finance 34: 1274-1287.
Fare R, Grosskopt S, Lovell K. 1985. The Measures of Efficiency of Production. Springer Science + Business Media: New York.
Feng G, Serletis A. 2010. Efficiency, technical change, and returns to scale in large US banks: panel data evidence from an output distance function satisfying theoretical regularity. Journal of Banking & Finance 34: 127-138.
Feng G, Zhang X. 2012. Productivity and efficiency at large and community banks in the US: a bayesian true random effects stochastic distance frontier analysis. Journal of Banking & Finance 36: 1883-1895.
Feng G, Zhang X. 2014. Returns to scale at large banks in the US: a random coefficient stochastic frontier approach. Journal of Banking & Finance 39: 135-145.
Hughes JP, Mester LJ. 2013. Who said large banks don't experience scale economies? Evidence from a risk-return-driven cost function. Journal of Financial Intermediation 22: 559-585.
Kumar P. 2013. Market power and cost efficiencies in banking. CAPCP Working Paper 2013.
Miles B, Sapci A. 2017. Bank size, returns to scale and cost efficiency. Colgate Working Paper No. 2017-02.
Restrepo-Tobon D, Kumbhakar SC. 2015. Nonparametric estimation of returns to scale using input distance functions: an application to large US banks. Empirical Economics 48: 143-168.

Sarin N, Summers LH. Have big banks gotten safer? Brookings Papers on Economic Activity. BPEA Conference Draft, September, 15-16, 2016. Available at: https://www.brookings.edu/wp-content/uploads/2016/09/2_sarinsummers.pdf

Tianxi W. 2015. Competition and increasing return to scale: a model of bank size. The Economic Journal 125(585): 989-1014.

Wheelock DC, Wilson PW. 2012. Do large banks have lower costs? New estimates of returns to scale for US banks. Journal of Money, Credit and Banking 44: 171-199.