IMPACT OF PROLONGED LOW OIL PRICES ON THE EFFICIENCY AND PRODUCTIVITY OF BANKS IN SAUDI ARABIA, UAE AND QATAR

Eung Jin Kim, Associate Professor of Banking and Finance, College of Business Administration, Imam Abdulrahman Bin Faisal University, Dammam, 34212 Saudi Arabia, +966 56 199 3723, ejkim@iau.edu.sa

ABSTRACT

Under the situation of prolonged low oil prices and moderating economic growth in the Gulf countries, an important question to ask is about the efficiency and productivity of banks. For this study, fifteen banks of Saudi Arabia, UAE, and Qatar are selected among top twenty largest banks in the region and assessed using data envelopment analysis and the Malmquist productivity index. To investigate the impact of prolonged low oil prices properly, both the input oriented intermediate approach and the output oriented production approach are utilized. It is found that the efficiency of the fifteen banks has been vividly impacted by sustained low oil prices and the inefficiencies are attributed to both managerial underperformance and inappropriate sizes. The productivity of the fifteen banks did not improve over the 2010-2016 study period and continuously regressed in 2014-2015 and 2015-2016. Productivity changes attributed to technological change was minimal, bur showed signs of improvement.

JEL classification: C14; D24; G21

Keywords: Efficiency; Productivity; Banks; Data envelopment analysis; Malmquist Total Factor Productivity Index

INTRODUCTION

The economies of Saudi Arabia (KSA hereafter), United Arab Emirates (UAE hereafter), and Qatar in the Gulf region had registered robust growth after the global financial crisis of 2008-2009 thanks to the sharp rebound of global energy prices. However, the drastic fall in global crude oil prices over 50% between June 2014 and January 2015 and the persistent low oil prices thereafter have changed the economic landscapes of the three economies dramatically.

The banking sector of these three economies, which had benefited largely from high oil and gas prices have been facing huge difficulties. The most visible impact of low oil prices has been seen on the liability side of the banks' balance sheets. Liquidity has been tightened due to significant reduction of deposit inflows from governments and governments' related entities. The liquidity problem has made interbank rate increased sharply. In Qatar, the 3 month interbank rate was 0.68% in 2014, 1.63% in 2015 and 1.93% in 2016. In KSA and UAE, the 3 month interbank rates were 0.86% and 0.17% in 2014, 1.55% and 0.90% in 2015, and 2.04% and 1.00% in 2016, respectively. Accordingly, money supply has remained under pressure. The growth rates of the total liquidity (M3) in KSA was 11.9% in 2014, 2.6% in 2015 and 0.7% in 2016. In UAE and Qatar, the M3 growth rates were 9.13% and 3.7% in 2014, 2.15% and -2.56% in 2015, and 5.10% and -4.46% in 2016, respectively. As reflected in the sharp surge of 3 month interbank rate, money supply declined most in Qatar. On the asset side, risk is rising and expected to rise

continuously but limited yet. Credit risk is rising particularly loans to certain industries, such as construction, retail, healthcare, hospitality, and others.

Under the situation of persistent low oil prices and moderating economic growth, an important question to ask is about the efficiency and productivity of banks in the three economies. For this study, fifteen banks of the three economies among top twenty largest banks in the Gulf region according to asset size as of the end of 2016 are selected. The list ranged according to asset size is: Qatar National Bank (QNB), National Commercial Bank (NCB), National Bank of Abu Dhabi (NBAD), Emirates National Bank of Dubai (ENBD), Al Rajhi Bank (AlRajhi), Saudi American Bank (SAMBA), Abu Dhabi Commercial Bank (ADCB), First Gulf Bank (FGB), Riyad Bank (Riyad), Saudi British Bank (SABB), Banque Saudi Fransi (BSF), Arab National Bank (ANB), Dubai Islamic Bank (DIB), Qatar Islamic Bank (QIB), and Commercial Bank of Qatar (CBQ). There are seven KSA banks (NCB, AlRajhi, SAMBA, Riyad, SABB, BSF, and ANB), five UAE banks (NBAD, ENBD, ADCB, FGB and DIB), and three Qatari Banks (QNB, QIB, and CBQ).

The objectives of this paper are to investigate the impact of prolonged low oil prices on the efficiency and productivity changes of the fifteen banks of the three economies, and how they have changed in recent years after oil prices crash. The study aims to shed some light on the following topics: (1) which economy's banks on average operate more efficiently and/or productively than other economy's banks, (2) which banks in a certain economy have less impact from sustained low oil prices than other competitors in terms of efficiency and/or productivity, (3) what kind of measures have to be taken to minimize the impact of prolonged low oil prices on the efficiency and productivity of the banking sectors in the three economies.

This paper is organized as follows. Section II presents the specific input oriented and output oriented Data Envelope Analysis (DEA) models to assess relative efficiency of the fifteen banks, and the Malmquist Productivity Index (MPI) analysis to assess productivity changes of the fifteen banks. In addition, data and time period utilized in the research are specified. Section III discusses the main empirical results, and Section IV summarizes and concludes.

Table 1: Key Economic Indicators of the Three Economies (Unit: %)

		2010	2011	2012	2013	2014	2015	*2016*
Real GDP Growth (YoY)	KSA	4.8	10.0	5.4	2.7	3.6	3.4	*1.1*
	UAE	1.6	4.9	7.1	4.7	3.1	3.8	2.7
	Qatar	18.1	13.4	4.7	4.4	4.0	3.5	2.7
Current Account (% of GDP)	KSA	12.7	23.6	22.4	18.1	9.8	-8.7	-3.9
	UAE	4.3	12.7	19.8	19.1	10.0	3.3	2.4
	Qatar	19.1	31.1	33.2	30.4	24.0	8.4	-2.2
Money (M3) Supply (YoY)	KSA	5.0	12.3	13.9	10.9	11.9	2.6	0.79
	UAE	4.0	1.6	6.7	12.7	9.1	2.2	5.1
	Qatar	26.0	27.5	22.2	30.4	3.7	-2.6	-4.4
3-Month Rate	KSA	0.75	0.78	1.00	0.96	0.86	1.55	2.04
	UAE	0.58	0.45	-0.33	0.38	0.17	0.90	1.00
	Qatar	1.60	0.48	1.00	1.03	0.68	1.63	1.93

(Source: Bloomberg)

EFFICIENCY AND PRODUCTIVITY MEASUREMENTS

Efficiency Measurement

The main nonparametric method frequently used to analyze the relative efficiency of decision making units (DMUs) is the DEA method. Although this framework does not require profit-maximization assumption and explicitly account for the market structure, it has proven to give meaningful deterministic results while serving its purpose to estimate the relative efficiency of DMUs, based on the data of selected inputs and outputs of a number of DMUs.

DEA was originally developed by Charnes, Cooper, and Rhodes (1978) with the assumption of constant return to scale (CRS) in an attempt to propose a model that generalizes the single-input, single output measure of a DMU to a multiple inputs, multiple outputs setting, namely the CCR model. DEA was extended by Banker, Charnes, and Cooper (1984) to include variable return to scale (VRS) through the introduction of convexity constraint, namely the BCC model. DEA assumes that all DMUs face the same unspecified technology, which defines their production possibility set and uses linear programming for the development of production frontiers and the measurement of efficiency relative to the developed frontiers (Charnes et al., 1978). The best-practice efficient frontier for a sample of DMUs is constructed through a piecewise linear combination of actual input-output correspondence set that envelops the input-output correspondence of all DMUs in the sample (Thanassoulis, 2001). Each DMU is assigned an efficiency score that ranges between 0 and 1, with a score equal to 1 indicating an efficient DMU with respect to the rest DMUs in the sample (Coelli et al. 1998 and Thanassoulis 2001).

There are two major approaches in measuring banking unit outputs; the production approach and the intermediation approach. Under the production approach, banks are treated as the providers of services. On the contrary, the intermediary approach views that a bank is a financial vehicle that transforms funds from depositors to loans for profit. In addition, applications of DEA to the banking sector can be divided largely into two groups; input oriented model (minimize inputs for the same level of output) and output oriented model (maximize output with a given set of inputs) on the grounds of the particular approach of identifying inputs and outputs and model specification. The input oriented technical efficiency measurement looks more plausible as it address the question: 'By how much can input quantities be proportionally reduced without changing the output quantities produced?' (Coelli et al, 1998)

But in the midst of prolonged low oil prices, there is a possible drawback for using input-oriented intermediation approach which treats deposits as inputs since a large volume of deposits has been withdrawn from banks as in the period of global financial crisis of 2008-2009. This influenced the contraction of inputs and unstable and imprudent banks would stay efficient in this case. Having deposits on the output side, decrease in their volume of deposits would mean reduction in efficiency. In this respect, output oriented production approach was utilized as well to investigate properly the impact of prolonged low oil prices on the efficiency and productivity of the fifteen banks.

The basic mathematical representation of the input oriented models under both assumptions of CRS and VRS can be represented as Table 2 below.

Table 2: Basic Mathematical Representation of the Input Oriented Models

Orientation	Constant Return to Scale (CRS)	Variable Returns to Scale (VRS)
Input Oriented	Min θ s.t. $\theta x_A - X\lambda \geq 0$ $Y\lambda - y_A \geq 0$ $\lambda \geq 0$	Min θ s.t. $\theta x_A - X\lambda \geq 0$ $Y\lambda - y_A \geq 0$ $e\lambda = 1$ $\lambda \geq 0$

Where θ = efficient score, $\lambda = (\lambda 1, \lambda 2, ..., \lambda n)$, and e = (1, 1, ..., 1).

If $\theta = 1$, DMU is efficient as it lies on the efficient frontier, whereas if $\theta < 1$, DMU is inefficient and needs a $(1 - \theta)$ reduction in the inputs levels to reach the frontier. The CRS linear programming is modified to consider VRS with adding the convexity constraint, $e\lambda = 1$.

In addition, the basic mathematical representation of the output oriented models under both assumptions of CRS and VRS can be represented as Table 3 below. In an output oriented model, an inefficient unit is made efficient through the proportional increase of its outputs, while the inputs proportions remain unchanged.

Table 3: Basic Mathematical Representation of the Output Oriented Models

Orientation	Constant Return to Scale (CRS)	Variable Returns to Scale (VRS)
Output Oriented	Max η s.t. $x_A - X\mu \geq 0$ $\eta y_A - Y\mu \leq 0$ $\mu \geq 0$	Max η s.t. $x_A - X\mu \geq 0$ $\eta y_A - Y\mu \leq 0$ $e\lambda = 1$ $\mu \geq 0$

Where η = efficient score, $\mu = (\mu 1, \mu 2, ..., \mu n)$, and e = (1, 1, ..., 1).

The result of CCR model indicates a score for overall technical efficiency (OTE) of each DMU. The efficiency scores obtained under VRS is pure technical efficiency (PTE) of each DMU. Scale efficiency (SE) can be obtained as suggested in Aly et al. (1990), from the measures of OTE and PTE.

$$SE = \frac{OTE}{PTE} \quad (1)$$

PTE is related to the managerial performance to utilize DMUs' given resources, and SE refers to exploiting scale economies by operating at a point where the production frontier exhibits CRS. If the value of SE equals to one, the DMU is scale efficient. If SE score is less than one, the source of inefficiency is the result of operating at either increasing or decreasing returns to scale.

Productivity Measurement

Productivity measurement is an important research topic of DEA, and a very useful approach for productivity measurement in DEA is the Malmquist productivity index (MPI), The MPI is a bilateral index that can be used to calculate the relative performance (productivity changes) of a DMU at different periods of time using the technology of a base period. If MPI is larger than one,

(total factor) productivity progress occurs, while MPI is less than one, productivity regress occurs.

The MPI is extended to decompose the productivity change into two components, one of which measures overall technical efficiency changes (EC), relative to a CRS technology, and the other measures technological change (TC).

$$MPI = EC * TC \quad (2)$$

Recalling that OTE can be decomposed into PTE and SE (see Equation (1)). EC can be further decomposed into pure technical efficiency change (PTEC) and scale efficiency change (SEC).

$$MPI = TC \times PTEC \times SEC \quad (3)$$

An interpretation of technological change index is the technical progress (regress) occurs if TC is larger (less) than one. The major cause of productivity growth can be inferred by comparing the values of EC and TC. If TC is larger than EC, productivity changes are primarily the result of technological changes, whereas if TC is less than EC, the productivity gains are primarily the result of efficiency improvement. In addition, if PTEC is larger than SEC, the major source of EC is improvement of PTE (Charner, et al, 1993; Worthington, 1999). In this study, for the comparison of productivity changes before and after of oil prices crash, the MPI and its decomposition are utilized.

Variables and Time Period

In measuring the efficiency score and the productivity change over time, one of the most challenging tasks is the selection of the relevant input and output variables. There has been long-standing disagreement among researchers over what banks produce. Since deposits have both input and output characteristics, the most debatable issue is whether to treat deposits as inputs and/or outputs. In this study, both the input oriented intermediation approach and the output oriented production approach are employed, taking into account of declining volume of deposits due to sustained low oil prices.

For the input oriented intermediation approach, three inputs (loanable funds, operating expenses, and physical capital) and one output (operating income) are selected. The reason behind the use of operating income as one output is to combine interest income, non-interest income and income from off balance sheet (OBS) activities in one category. For the output oriented production approach, two inputs (operating expenses, and physical capital) and one output (loanable funds) are selected. The reason behind the use of loanable funds as one output is to reflect deteriorating liquidity conditions of banks in the three economies. For the study, data are obtained from the financial statements of the fifteen banks from 2010 to 2016. The reason behind choosing this study period is to investigate the impact of prolonged low oil prices on the efficiency and productivity of the fifteen banks properly after the 2008-2009 global financial crisis. The three economies experienced a strong rebound in growth in 2010.

EMPIRICAL FINDINGS

In this section, the empirical estimation results for the efficiency movements and productivity changes of the fifteen banks before and after oil prices crash are discussed.

Efficiency Changes

The results of OTE scores according to the input oriented model indicate the following three points: Firstly, the impact of sustained low oil prices on the changes of OTE is quite distinct. In general, OTE deteriorated continuously in 2015 and 2016. And besides, except AlRajhi, OTE of all banks dropped continuously in 2015 and 2016 or maintained the level of 2014. Secondly, there is huge asymmetry in OTE among the fifteen banks, ranging between 59.75% and 100% in 2014, 55.97% and 100% in 2015, and 39.75% and 100% in 2016, Thirdly, the average efficiency score of the Qatari banks in the 2010-2016 study period is higher than those of the UAE and KSA banks, but the average efficiency scores of the Qatari banks in 2015 and 2016 are lower than that of 2010, the recovery year of the 2008-2009 global financial crisis, which is a quite challenging sign for all Qatari banks.

All the finding above can be inferred from the fact that the average LTD (loan to deposit) ratios of the Qatari banks were higher than those of the UAE banks and the KSA banks. The average LTD ratio of the Qatari banks was 101.1% in 2015 and 105.1% in 2016. Meanwhile, the average LTD ratios of the UAE banks and the KSA banks were 96.6% and 82.6% in 2015 and 94.7% and 82.8% in 2016, respectively. In fact, the KSA banks always maintain conservative position in providing loans. LTD ratios in KSA were around 76%-83% between 2010 and 2015, below the regulatory requirement of 85%. The Saudi Arabian Monetary Agency (SAMA) increased the LTD ratio limit to the equivalent of 90% of deposits on February 2016 to alleviate liquidity constraints in the banking sector. On the contrary, the Qatari banks, already stretched by financing demands of the $200 billion 2022 World Cup took a blow from prolonged low energy prices, which is vividly seen in more than 100% rise of 3-month rate in 2015 from the level of 2014 and further rise in 2016. In fact, money supply (M3) declined 2.6% in 2015 and 4.4% in 2016 continuously. In addition, average non-performing loan ratio of the Qatari banks was 2.1% in 2015 and 4.4% in 2016.

The UAE banks, which had almost recovered from the 2008-2009 real estate crisis, are facing challenge from sustained low oil prices. Among the UAE banks, the Abu Dhabi based banks (NBAD, ADCB and FGB) enjoyed relatively less challenged due to their relatively lower exposure to real estates and higher exposure to oil based industries, which did well amid favorable oil price environment, but the situation has changed drastically for the Abu Dhabi based banks. The resulting economic downturn from sustained low oil prices may further impact liquidity conditions and lending activities of the banks. On the other hand, Dubai largely derives its growth from real estate, trade, tourism, and services industry. The Dubai based banks do not get oil price decline impact directly, but receive indirect effect from the deterioration of regional macroeconomic environment. The Dubai based banks (ENBD and DIB) achieved highest efficiency scores in 2014 and 2015, respectively and experienced decline in 2016. It looks like the Dubai based banks are facing asset quality challenges. Average non-performing loan ratio of the UAE banks was 4.2% in 2015 and 3.7% in 2016, in which that of the Dubai based banks was 6.1% in 2015 and 5.2% in 2016 while that of the Abu Dhabi based banks was 3.0% in 2015 and 2.7% in 2016, respectively.

In an output-oriented model, an inefficient unit can be made efficient through the proportional increase of its outputs, while the inputs proportions remain unchanged. There are some differences between results of input oriented model and output oriented model, which need to be mentioned are: Firstly, the impact of sustained low oil prices on the changes of OTE is quite

distinct only in the Qatari banks. The average efficiency score of the Qatari banks dropped in 2016 due to the significant drop of OTE score of QNB, and is lower than that of 2010, the recovery year of the 2008-2009 global financial crisis. Secondly, in general, the efficiency scores of each bank in UAE and Qatar is quite low in comparison to those of input oriented model, but KSA banks in general showed almost similar efficiency scores with those of input oriented model. Thirdly, a couple of KSA banks (BSF and SAMBA) showed remarkable improvement, while QIB showed a drastic deterioration in contrary with the result of input oriented model. Fourthly, in terms of the average efficiency scores, The KSA banks achieved highest in the 2010-2016 study period and the Qatari banks attained lowest.

These results can be drawn from the different characteristics of banking sectors and economic sizes of the three economies. The KSA banks enjoy the most protective market where 12 national licensed banks and 13 branches of foreign banks compete in the economy of around $690 billion nominal GDP and a population of 33 million including 11 million expatriates. In UAE, there are 23 national banks and 26 foreign banks with around $400 billion nominal GDP and a population of 9.4 million including 8 million expatriates. The competition is so steep in the UAE banking market. Several global banks such as Royal Bank of Scotland, Lloyds Bank, Barclays Bank and Standard Chartered Bank have been selling off their local assets and retreating from the UAE banking market, helping local institutions deepen their roots to some extent. In Qatar, the situation is more grueling where 11 national banks and 7 foreign banks' branches compete in the economy of around $190 billion nominal GDP and a population of 2.6 million including 2.3 million expatriates. In addition, deposits represent around 75% of all Qatari banks' non-equity funding and non-domestic customer deposits account for 25% of total deposits, which are not quite prudent to leave the Qatari banking market.

These kinds of results can also be inferred from the following factors as well: In KSA, SAMA offered banks short-term loans of about $4 billion in June 2016 to help ease liquidity constraints and $17.5 billion was raised from the sovereign bond sale in October 2016, which helped the KSA banks' liquidity condition in 2016. In UAE, Abu Dhabi raised $5 billion from sovereign bonds sale in April 2016. Qatar also raised $9 billion in an international bond issue in May 2016, but the current account was in deep negative while that of UAE was positive.

As a next step, the decomposition of OTE according to the input oriented model into PTE and SE was conducted. The results of PTE scores indicate the following three points: Firstly, in general, PTE also deteriorated continuously in 2015 and 2016. Secondly, except NCB and AlRajhi, PTE of all banks dropped continuously in 2015 and 2016 or maintained locally efficient score of one from 2014. Thirdly, the average PTE score of the UAE banks in the 2010-2016 study period is higher than those of the Qatar banks as well as the KSA banks.

The PTE scores of CBQ, the third largest bank in Qatar declined most conspicuously although QNB and QIB were pure technical efficient banks seven year in a row in the 2010-2016 study period. In general, the PTE scores of ANB, the seventh largest and Riyad, the fourth largest in KSA were significantly lower than the other twelve banks in the sample. And besides, six banks acquired the status of locally efficient banks in 2010. In addition to the two banks (QIB and FGB) that acquired the status of leading efficient banks under the CRS assumption, four other banks (QNB, ENBD, SAMBA and AlRajhi) attained the PTE scores of one. For these four banks, it can be inferred that the overall technical inefficiency (OTIE) are not caused by poor input utilization but rather by the inappropriate scale size of the banks. For the other nine banks with PTE scores

less than one, the managerial inefficiency exists. ENBD not efficient at all under the CRS assumption became an efficient bank from 2012 to 2016 under the VRS assumption. This transformation seems to be possible by management improvement.

If the PTE score of a certain bank is less than one and smaller than the SE score, the inefficiency of the bank is primarily attributed to the managerial inefficiency rather than the scale inefficiency. In 2010, five banks (DIB, NCB, BSF, ANB, and Riyad) had PTE scores less than SE scores out of nine purely technical inefficient banks. In 2016, out of eleven purely technical inefficient banks, six banks (CBO, DIB, SABB, ANB, SAMBA, and Riyad) had PTE scores less than SE scores.

Productivity Changes

The MPI results with the input oriented intermediate approach indicate the following two points: Firstly, the impact of sustained low oil prices on the productivity changes is quite distinct. In general, MPI deteriorated continuously in 2014-2015 and 2015-2016. And besides, except AlRajhi, MPI of all banks dropped continuously in 2014-2015 and 2015-2016. Secondly, there is no significant difference in productive changes between the fifteen banks of the three economies although on average, productivity change of the UAE banks are a little bit higher than those of the KSA banks and the Qatari banks. The Qatari banks attained the lowest rank in productivity changes.

The highest productive year was 2010-2011 for the KSA banks, 2013-2014 for the UAE banks, and 2011-2012 for the Qatari banks, respectively. The most probable reason behind the highest productive year for each economy is: In KSA, the productivity increase in 2010-2011 is most probably attributed to the Royal Decree in March 2011 to pay a two-month salary bonus to all state employees and students in addition to the sharp rebound of global oil prices. These factors had a positive impact on the business sector, which accordingly increased the operating income of banks. In the UAE banks, particularly the Dubai based banks had recovered from the 2008-2009 real estate crisis and achieved most productivity increase in 2013-2014. In Qatar, due to the preparation of power transition to the current eighth Emir, which occurred on June 25 2013, lavish fiscal spending was carried out with the huge current account surplus achieved in 2012, which accordingly increased the operating income of banks.

In general, the output oriented MPI indices showed a similar pattern with those of input oriented model. On average, AlRajhi achieved the highest productive bank for the study period in both the input oriented and output oriented models. But QIB which achieved the second highest productive bank in the input oriented model became the lowest productive bank in the output oriented model.

As a next step, the decomposition of the Malmquist TFP indices into two components: efficiency change (EC) and technological change (TC) was carried out. On average, productivity changes of the fifteen banks were attributed to EC during the study period. However, when the average productivity of the fifteen banks progressed in 2011-2012 and 2013-2014, TC played an important role for the progress of productivity. In fact, productivity changes attributed to technological change was minimal, bur showed signs of improvement.

CONCLUSION

In this study, the efficiency and productivity changes of the fifteen banks of KSA, UAE, and Qatar selected among top 20 largest banks in the Gulf region according to asset size are assessed using Data Envelopment Analysis (DEA) and the Malmquist Productivity Index (MPI) based both on the input oriented and output oriented CCR and BCC models. It is found that the impact of prolonged low oil prices is quite distinct on the efficiency and productivity changes of the fifteen banks

In general, it is observed that the input oriented OTE scores corresponding to CRS assumption for the fifteen banks deteriorated continuously in 2015 and 2016. It is also observed that the average efficiency score of the Qatari banks in the 2010-2016 study period is higher than those of the UAE banks and the KSA banks, but the average efficiency score of the Qatari banks in 2015 and 2016 is lower than that of 2010, the recovery year from the 2008-2009 global financial crisis, representing a challenging development for the Qatari banks. In addition, the impact of sustained low oil prices on the changes of output oriented OTE is quite distinct only in the Qatari banks. Furthermore, in general, PTE also has deteriorated continuously in 2015 and 2016 on average for the fifteen banks.

The MPI is also investigated to measure the productivity changes of the fifteen banks and decomposed into two components, efficiency change (EC) and technological change (TC). In general, the productivity of the fifteen banks in KSA, UAE, and Qatar did not improve, almost regressing on average over the study period and continuously regressed in 2014-2015 and 2015-2016. And besides, productivity progress attributed to TC was quite minimal, bur showed signs of improvement on average over the study period. Enhancing the banking productivity is a huge task for the policy makers of the three economies to cope with the changing environment well.

To minimize the impact of sustained low oil prices on the efficiency and productivity changes of banks in the three economies, the following measure should be taken: Firstly, there should be more encouragement for merging banks in each domestic market like the recent merger between FGB and NBAD, which completed in March 2017. Even though KSA is the largest economy in the region with a population of 33 million, twelve national licensed banks seem to be too many compared with the cases of advanced countries. The situation is much worse in UAE and Qatar. Mergers between banks must speed up to transform the banking sector with several sizable banks in each economy. Secondly, in an economic sense, the economic integration of Gulf countries has to be expedited to have their domestic banks benefit from a larger market. The internationalization of the domestic bank in each economy is better to be firstly done on each other's turf and then moves to the global markets. Thirdly, a great deal of attention on human resource development (HRD) for bank managers must be paid to enhance managerial efficiency and productivity in a rising tide of workforce localization.

ACKNOWLEDGEMENT

The author would like to thank Dr. Wael Mousa, Al Yamamah University, Riyadh, Saudi Arabia for his technical support.

REFERENCES

References are available upon request from Eung Jin Kim.