"The impact of mergers and acquisitions on the efficiency of GCC banks"

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The impact of mergers and acquisitions on the efficiency of GCC banks

Abstract

This study provides an empirical assessment of banking consolidation of commercial banks in Gulf Cooperation Council (GCC) countries. The DEA was used to trace the impact of Mergers and Acquisitions (M&A) on the technical efficiency of banks involved in the consolidation. The study considered 42 commercial banks over the period of 2003-2007, 10 among them were involved in a consolidation activity during the period considered. By comparing the performance of the ten banks involved in consolidation with that of the whole sample and with those banks that did not go through consolidation, meaningful conclusions were made. The major result was that, though it was limited, there was a positive impact of M&A on the performance of commercial banks. Moreover, most of the banks involved in M&A realized an improvement higher than the average realized by the full sample, and hence improved their performances faster than the market.

Introduction

Mergers and Acquisitions (M&A) literature incorporates the motivations and causes beyond these corporate activities as central elements of theories of M&A. Mergers theories are centered on shareholder value improvement, efficiency enhancement and the boost of operating synergies and managerial motives. Firms engaging in M&A activities can expect to improve their performance in terms of overall economic, financial and operating performance to be better off after the merger. Such expectations are based on the fundamental theory of M&A which claims that there is a positive gain to both acquirer and target.

The reasons and motivations for M&A can be categorized into three broad types (Heffernan, 2006). Shareholders wealth maximization goals are the first one. This can be achieved when the consolidation leads to a better scale economies or scope economies and (or) there is improved cost reductions (efficiency). All of this should lead to a more efficient banking sector which in turn results in value creation and therefore benefiting the shareholders. However, we should realize the claim that consolidation consistently increases market concentration which may increase market power. The latter could lead to higher prices benefiting the owners (shareholders) at the expense of the consumers.

Managerial self-interest is the second motivation for M&As. This is where managers could use M&A consolidation to serve their goals; either as a way of boosting or defending their authoritative positions. The last motivation consists of various factors which make the environment more attractive to M&As. This includes the changes in banking sector structure, for instance, increased competition from non-banking competitors. Another factor could be changes in regulations.

Although merger and consolidation have been used interchangeably, there is a distinction between the two terms, as Gaughan argues (2002). As explained by the author (p. 13):

"A merger is a combination of two corporations in which only one corporation survives and the merged corporation goes out of existence. In a merger, the acquiring company assumes the assets and liabilities of the merged company. A merger differs from a consolidation, which is a business combination whereby two or more companies join to form an entirely new company. All of the combining companies are dissolved and only the new entity continues to operate".

Lepetit et al. (2004) differentiated between merger and acquisition; they defined merger as a transaction when firm (A) (or entity) is merged with firm (B), subsequently the legal existence of one (at least) original entity is seized to exist. An acquisition, on the other hand, is considered to be a transaction where one firm purchases a dominant stake of another firm without combining the assets of the firms involved, they added.

According to Weston and Weaver (2004), from economic perspective, mergers can be categorized based on occurrence of merger at different level of the firm's operation whether it starts its economic operation, manufacturing or production, distribution (wholesale or retail) ending with the final consumers. The three board types of mergers are vertical mergers, horizontal mergers and conglomerate mergers. Details concerning these types are provided in the next paragraphs based on Weston and Weaver (2004) explanation.

Vertical mergers take place between firms at "different stages of production". This is more obvious when the merging firm's business operations involve relationship between buyer and seller. In contrast to vertical mergers, horizontal

mergers entail firms (two or more) that operate and compete in the same type of product operations. Advocates of this type of merger claim that horizontal mergers realize economies of scale. A vital issue associated with horizontal mergers is market concentration where number of firms is reduced which could lead to monopoly power. Finally, conglomerate mergers occur when the combining firms operate in different unrelated industries. That is, there is no "buyer-seller relationship" between firms engaged in the merger.

There are two ways in which the acquirer may take over the target firm; either through statutory merger or purchase of assets. Under the statutory merger, the acquiring firm takes statutorily over the target firm where the shares of the latter are exchanged for the shares of the buying firm, followed by the legal dissolution of the target company. In purchase of assets method, the acquiring firm might purchase the assets and become legally responsible for the liabilities of the target firm.

This study addresses the question whether the mergers and acquisitions improve the performance of the Gulf Cooperation Council (GCC) commercial banks involved. The GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates (UAE). There have been very few efficiency studies conducted on the GCC Banking. Al-Muharrami (2008) examined the technical, pure technical, and scale efficiencies in GCC Banking but without considering the impact of M&A on efficiencies.

The paper is organized as follows. Section 1 describes the mergers and acquisitions in GCC Banking. Section 2 explains the DEA, while section 3 presents the methodology. Section 4 shows the results, and the last section concludes the paper.

1. Mergers and acquisitions in GCC banking

GCC banks have been flirting with the idea of M&A as means for boosting performance since the early nineties. The size of GCC commercial banks remains small compared to their international counterparts. Managers of these banks began to realize the avid need to expand beyond the usual operations and boundaries through utilizing their high liquidity which would enhance their competitive position. Being a member of the World Trade Organization (WTO) obligates all members to open up their market's doors including banking sectors to permit foreign rivals to compete with domestic companies. For instance, The UAE had stopped granting licenses to foreign banks in 1982 and now the number of these banks has been restricted to just eight branches. Saudi Arabia didn't allow foreign banks to open branches in the country and in the 1980's existing foreign banks had to comply with the Saudi regulators and turned into

joint-ventures with a minimum of 60% Saudi ownership. Dubai International Financial Center (DIFC), where 100% foreign ownership is allowed is a unique exception in GCC region. Oman sustains parallel strict requirements with regard to ownership structure and foreign banks operating in the country are predominantly locally-owned.

Over the GCC banking history, 30 years, not many GCC banks have succeeded to build regional platforms. There are two exceptions to that: Ahli United Bank (AUB), located in Bahrain and, to a slighter degree, National Bank of Kuwait (NBK). AUB has a clear goal of building up a competitive presence in the entire GCC market as well as in Iran and Iraq. So far AUB's expanding profile stands as follows: AUB has currently stakes of banks in Kuwait (Bank of Kuwait & the Middle East), in Qatar (Ahli Bank of Qatar), in Iran (Iranian joint venture Future Bank), in Iraq (Commercial Bank of Iraq), and, not long ago, acquired Oman's Alliance Housing Bank (AHB). The acquisition of Oman's Alliance Housing Bank came after it won the competition for Bank Muscat, which is considered to be the biggest player in terms of growth through purchases in its home market. In early 2005 AUB was very close to win the deal for a merger with National Bank of Oman (NBO). The deal was called of and three months later Commercial Bank of Qatar was able to manage an acquisition deal allowing it to control 35% stake in National Bank of Oman.

Additionally, several of the GCC's bigger banks realize that the economic booming growth is implausible to run forever and the search for lucrative targets at home has been more proactive, and they are expanding further into different sectors and regions. The Islamic banks, South East Asia, are proving fertile hunting grounds. The example is clear where Kuwait Finance House and Al-Rajhi Bank established extensive operations in Malaysia, and Qatar International Islamic Bank started to operate in Pakistan. Commercial Bank of Kuwait (CBK) has bid to acquire banks in Egypt and Turkey, where the latter case ended eventually unsuccessful.

Also, CBK has attempted to seriously consider a worthy bid for control of Turkiye Finans with Saudi Arabia's National Commercial Bank – as well as stretched its arms to cross border markets such as Iraq and Syria. QNB has also taken daring move based on an improvement in the security situation in Iraq by setting up a wholly owned bank there while also starting business in Yemen and Libya. Generally speaking, Gulf banks are putting their eyes on Egyptian market as the domestic banks fail to meet the new capital requirements. Several are seen among the lists of those conducting market research to evaluate the associated risks and

implications regarding a decision to be made to enter the Egyptian market. To name some, NBK and Mashreq bank; AUB recently secured the 100% acquisition of Delta International Bank.

2. DEA to assess the impact of M&A

The term Data Envelopment Analysis (DEA) was first introduced by Charnes et al. (1978) (hereafter (CCR)). It measures the efficiency of set of producers called Decision Making Units (DMUs); that is obtained as a maximum of a ratio of weighted outputs to weighted inputs. The more the output produced from given inputs, the more efficient is the production. The weights for the ratio are determined by a restriction that the similar ratios for every DMU have to be less than or equal to unity. This definition of efficiency measure allows multiple outputs and inputs without requiring pre-assigned weights. Multiple inputs and outputs are reduced to single 'virtual' input and single 'virtual' output by optimal weights. The efficiency measure is then a function of multipliers of the 'virtual' input-output combination.

Weiguo & Ming (2008) stated that if there are n banks, each bank uses m kinds of inputs to produce s kinds of outputs. Where DMU_j denotes bank j, x_{ij} denotes the input i of bank j and $x_{ij} > 0$. y_{rj} denotes the output r of bank j and $y_{rj} > 0$. Then the relative efficiency of a specific DMU_{j0} can be calculated with the following basic model based on Charnels et al. (1978) formula

$$Max_{u,v} \ h_o = \frac{\sum_{r=1}^{r=s} u_r y_{ro}}{\sum_{i=1}^{i=m} v_i x_{io}} \qquad (1)$$

subject to :

$$\frac{\sum_{r=1}^{r=s} u_r y_{rj}}{\sum_{i=1}^{i=m} v_i x_{ij}} \leq 1; j = 1,2,...,n$$

$$urk \geq \varepsilon \ ; r = 1,....,s$$

$$vrk \geq \varepsilon. \ ; r = 1,....,m$$

where ε is non-Archimedean constant, y_{rj} represents the output level of bank j, $r = 1,2,..., s$ where s is the number of outputs, x_{ij} indicates the input level of bank j, $I = 1,2,..., m$ where m is the number of inputs and n represents the total number of banks.

Equation (1) calculates the maximal relative efficiency of bank j, so it meets the requirement of $0 < hj0 \leq 1$. But this equation is a non-linear programming model, so the result of (μ_r, v_i) is infinite. In order to solve this problem, Weiguo & Ming (2008) reported that the above equation should be converted into a linear programming model as equation (2) below.

$$Max_{\mu,v} \ h_o = \sum_{r=1}^{r=s} \mu_r y_{ro} \qquad (2)$$

$$s.t:$$

$$\sum_{i=1}^{i=m} \omega_i x_{io} = 1 \qquad (3)$$

$$\sum_{r=1}^{r=s} \mu_r y_{rj} - \sum_{i=1}^{i=m} \omega_i x_{ij} \leq 0; j = 1,2,...,n \qquad (4)$$

$$\omega_i \geq \varepsilon \ \mu_r \geq \varepsilon \qquad (5)$$

Equation (2) shows the maximal total weight of output after assuming the restriction of the total weight of input is 1.

The CCR model assumes constant return to scale; this allows the comparison between small and large (merged) banks which is the case of GCC commercial banks. The most efficient DMUs can be defined on the efficient frontier taking the value one as score of efficiency. Any DMU which is below one is considered to be inefficient and, therefore, is defined by the radial outcrop on the efficient frontier.

Banker et al. (1984) expanded the CCR model by modifying relaxingly the CRS assumption, (BCC); assuming the varying returns to scale. The BCC model is applied to evaluate the efficiency of DMUs characterized by variable returns to scale (VRS). The CCR model is based on the assumption that significant relationship doesn't exist between the size of activities and efficiency by assuming constant returns to scale (CRS) and it delivers the overall technical efficiency (OTE).

This study uses the output orientation extended CCR model where the data domain is augmented by appending an input of ones for each DMU, and is identical with the DRS model with output orientation.

DEA has certain advantages as reported by Weiguo & Ming (2008); some of them are as follows:

♦ First, DEA does not require constituting a frontier for concrete function like parameter method. So it can avoid the wrong conclusion by using the improper function.

♦ Second, the unit standardization of input and output item, like currency unit, staff number and times of transaction, is needless for DEA.

♦ Third, the index of complex system could be complicated to evaluate where the DEA method needs not to determine the comparability of each index in advance.

♦ Fourth, DEA method doesn't necessitate setting the weight of input/output index in advance. It uses the weight of each input/output (DMU) as variable to evaluate from the aspect most suitable to DMU. Hence, it can leave out many subjective factors and has high objectivity.

◆ Fifth, the relation among each input/outputs (DMU) is quite complex. But the DEA method can measure the quantitative index of each DMU's comprehensive efficiency without determining the explicit relation among them. It can determine the efficient DMU and analyze the cause of inefficiency so as to adjust the direction and extent of input (DMU).

These specific characteristics of DEA are appropriate to test the banking efficiency. First, the relative efficiency is a good indicator to evaluate banks' performance in competitive market and it is also a possible signal which can verify whether a bank is successful or not. Second, efficiency index can also be used to assess the impact of management and market environment on bank's performance. Lastly, this mathematic method will aid the bank to discover the cause of low efficiency. Therefore, banks can adopt corresponding strategies to enhance the relative position in the market. Of course, this evaluation method can also provide the information about change of efficiency measure before and after the bank M&A. So the management of banks can study the progress index to evaluate the efficiency change of bank M&A.

The efficiency analysis can take either forms: output oriented or input oriented (Gattoufi, 2002). The first orientation determines, for each unit, the maximum quantity of output(s) that can be produced from a given quantity of input(s). While in the second orientation the quantity of output(s) is fixed and the minimum quantity of input(s) used to obtain the fixed level of output is determined. Any deviation from the optimal index is seen as inefficiency.

To further facilitate the analysis Gattoufi (2002) continues explaining the returns to scale which can be taken into account. He added that when proportional variations in inputs and outputs are the same then the producing system is considered to be under constant return to scale (CRS). Gattoufi (2007) established a direct link between DEA and the weak axiom of profit maximization, an essential principle in microeconomics theory.

Coelli (1996) stated that non-parametric approaches, particularly Data Envelopment Analysis (DEA) are mathematical programming based techniques for efficiency analysis. The composition of the problem leads to a linear program with an objective function revealing the best efficiency point that the economic unit being evaluated can reach. The constraints of the linear program define a piecewise-linear frontier of a convex simplex that forms the efficient frontier; any unit belonging to the frontier is a fully efficient. For DEA analyses to be dependable two key assumptions are required. First, the comparability of the decision-making units included in the set of Decision Making Units (DMU) is considered for the

analysis in terms of size. The second assumption is, since DEA is based on Pareto equilibrium principle, the market is perfectly competitive. As a result, information asymmetry is eliminated and, therefore, the market is supposed to operate at efficient level.

3. Methodology

The lack of stock price information comparable across GCC countries has made it difficult for anyone to use market approach (event methodology) for analyzing the effects of banking M&A on the performance of GCC merging banks. Therefore, this study uses DEA since this method requires data which can be found in financial reports.

DEA can give better picture of the bank in terms of its efficiency on macroeconomic scale where the competition with bank rivals could be the main dimension. The intermediation approach, suggested by Berger and Humphrey (1997), is adopted in this study. The banking sector in GCC, as described in Hussain et al. (2002), is still traditional in terms of ranges of its products; thus, the intermediation approach, claiming that banks are mainly collecting funds and providing loans, is judged to be the most convenient for the study.

3.1. Method and variable selection. Data Envelopment Analysis, on the other hand, is used to assess the relative efficiency of those banks that went through M&A, compared to their competitors that did not experience such consolidation. The existence of negative data in inputs requires the use of an output oriented approach. To run the models, the professional version of DEA-Solver 6, developed by Cooper et al. (2007), was used. Excel was used for ratios and graphs.

A critical issue in the efficiency analysis is the definition of the variables to be considered as inputs and outputs for conducting the analysis. Reviewing the previous literature shows a big number of DEA studies and many variables are used as inputs and outputs. Table 1 presents the variables that are used in this study as inputs and outputs. The selection of these inputs and outputs has been used by Avkiran (2004), Kao and Liu (2004) for the intermediation approach.

Table 1. Variables DEA model

Inputs	Remarks	Outputs	Remarks
Interest expenses (X1)	Expenses for deposits and other borrowed funds	Interest income (Y1)	Includes interest on loans, and income on government securities
On-interest expenses (X2)	Consist of converting deposits into loans, including service charges, commissions, expenses of general management affairs, salaries, and other expenses	Non-interest income (Y2)	Service charges on loans and transactions, commissions, other operating income
Loan-Loss Provision (X3)	Allowances (an expense) to cover default loans		

3.2. Data description. The study uses financial reports gathered from *Bankscope* database. The data cover the period of 2003-2007. Table 2 provides details about the mergers and acquisitions reported during the period covered by the analysis. There were 30 Consolidations which took place in the period of 2003-2007. However, 20 of them occurred in 2007 and, hence, cannot be considered in the analysis since not enough data was available for the post-merger period. Therefore, the study is left with 10 M&A presented in Table 2.

Table 2. GCC commercial banks involved in M&A over the period of 2003-2007

Code	Bank name	Country	Bank role in M&A	Year of M&A
B003	Ahli United Bank	Bahrain	Acquirer	2005
B007	Bank Dhofar SAOG	Oman	Acquirer	2006
B009	Bank of Kuwait and Middle East	Kuwait	Acquirer	2006
B012	Bank of Bahrain and Kuwait	Bahrain	Target	2006
B016	Commercial Bank of Kuwait SAK	Kuwait	Acquirer	2006
B017	Commercial Bank of Qatar (QSC)	Qatar	Acquirer	2006
B023	Mashreq Bank	UAE	JV	2006
B029	National Bank of Oman (SAOG)	Oman	Target	2006
B038	Saudi Investment Bank	KSA	JV	2006
B041	Union National Bank	UAE	Acquirer	2006

4. The results

As reported in the methodology description we used a DEA model with three variables as inputs and two variables as outputs. Namely, the three inputs are Interest expenses (X_1), Non-interest expenses (X_2), and Loan Loss Provision (X_3). The two outputs considered are Interest income (Y_1), and Non-interest income (Y_2).

The technical efficiency scores of the ten banks that went through consolidation, as well as the sample averages, are provided in Table 3 which also presents the changes over the years of the ranking of the banks that went into consolidation compared to the full set of banks considered in the study. The consolidation event happened during 2005 for B003 while for the remaining it happened during 2006.

As can be seen in Table 3, the ranking based on the overall technical efficiency of five banks improved while it stagnated for three and it slightly deteriorated for the remaining two. Hence, as overall, one can conclude that consolidation had a positive, though limited, effect on the overall technical efficiency of those banks that went through consolidation, compared to their counterparts that did not undergo similar operation.

The analysis of decomposition of the technical efficiency score into a pure technical efficiency score and a scale efficiency score leads to a similar conclusion. However, the magnitudes of improvement and/or deterioration are more contrasted in the case of the decomposed scores.

Table 3. Ranking of merged banks based on the decomposition of their technical efficiency

No.	DMU	2003	2004	2005	2006	2007
3	B003	39	41	38	38	32
7	B007	22	31	25	20	26
9	B009	29	40	36	31	35
12	B012	33	39	39	36	42
16	B016	1	1	14	11	1
17	B017	19	1	23	32	1
23	B023	16	24	41	39	29
29	B029	41	42	42	40	40
38	B038	17	18	22	1	23
41	B041	21	26	17	21	22
Pure technical efficiency (PTE)						
No.	DMU	2003	2004	2005	2006	2007
3	B003	38	39	41	38	37
7	B007	22	31	30	20	28
9	B009	26	41	38	31	31
12	B012	35	40	40	36	42
16	B016	1	1	21	11	1
17	B017	23	1	27	32	1
23	B023	1	1	23	39	1
29	B029	41	42	42	40	39
38	B038	16	1	26	1	27
41	B041	25	1	1	21	26

Table 3 (cont.). Ranking of merged banks based on the decomposition of their technical efficiency

No.	DMU	2003	2004	2005	2006	2007
		Scale efficiency (SE)				
3	B003	20	35	14	22	26
7	B007	34	31	21	21	35
9	B009	33	18	25	20	38
12	B012	30	27	27	17	16
16	B016	1	1	16	12	1
17	B017	19	1	22	33	1
23	B023	32	37	42	14	40
29	B029	16	19	26	32	34
38	B038	35	33	23	1	30
41	B041	26	39	30	25	29

Appendix 1 shows a comparison, over time, between the average technical efficiency of the ten banks that went through consolidation with the overall technical efficiency average. As a first conclusion, one can mention that banks that went through consolidation were on the average outperformed by those that did not go into consolidation before the consolidation took place. This may justify the need for consolidation for these banks, before it happened. Moreover, one can see that though the banks that went into M&A activity were outperformed by the other ones, the efficiency gap was reduced with a lower standard deviation. This confirms that the impact was limited; it was confirmed and it was happening gradually.

However, one year was not enough to see a substantial improvement in the efficiency of those banks and hopefully it is happening on the long run. There is a need to look into the year 2008, though a troubled year because of the financial crisis, to either confirm or infirm these conclusions.

Concluding remarks

This study addresses the question whether the mergers and acquisitions improve the performance of the GCC commercial banks involved. It covered the period of 2003-2007. DEA has been used to gauge this impact. The sample contained 42 commercial banks in the GCC countries.

Out of ten banks, the ranking based on the overall technical efficiency of five banks improved while it remained the same for three banks and slightly deteriorated for two banks. Therefore, one can conclude that consolidation had a positive, though limited, effect on the overall technical efficiency of those banks that went through consolidation, compared to their counterparts that did not undergo similar operations.

A longer period is needed in order to evaluate the long-term operating performance of mergers and acquisitions in the GCC region. Furthermore, more variables can be included for a better analysis.

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Appendix 1. Decomposition of technical efficiency scores for merged banks

No	DMU	2003	2004	2005	2006	2007
Part A: Technical efficiency (TE)						
3	B003	0.6982	0.6263	0.7087	0.7135	0.8261
7	B007	0.8283	0.8071	0.8590	0.8982	0.8896
9	B009	0.8028	0.6437	0.7327	0.7944	0.8067
12	B012	0.7460	0.6574	0.6976	0.7335	0.6432
16	B016	1.0000	1.0000	0.9568	0.9969	1.0000
17	B017	0.8669	1.0000	0.8640	0.7848	1.0000
23	B023	0.9081	0.8645	0.6411	0.6808	0.8481
29	B029	0.6622	0.6100	0.6362	0.6596	0.7332
38	B038	0.8902	0.9327	0.8709	1.0000	0.9175
41	B041	0.8340	0.8485	0.9325	0.8929	0.9214
Average		0.8237	0.7990	0.7899	0.8155	0.8586
Standard deviation		0.1016	0.1546	0.1198	0.1251	0.1127
Minimum		0.6622	0.6100	0.6362	0.6596	0.6432
Maximum		1.0000	1.0000	0.9568	1.0000	1.0000
Market average		0.8508	0.8786	0.8673	0.8678	0.9038
Market standard deviation		0.1150	0.1210	0.1154	0.1209	0.1014
Market minimum		0.6206	0.6100	0.6362	0.5342	0.6432
Market maximum		1.0000	1.0000	1.0000	1.0000	1.0000
Part B: Pure technical efficiency (PTE)						
No	DMU	2003	2004	2005	2006	2007
3	B003	0.7244	0.6994	0.7099	0.7404	0.8444
7	B007	0.9199	0.8585	0.8875	0.9296	0.9498
9	B009	0.8852	0.6497	0.7688	0.8181	0.8925
12	B012	0.8146	0.6795	0.7345	0.7444	0.6436
16	B016	1.0000	1.0000	0.9819	1.0000	1.0000
17	B017	0.8989	1.0000	0.8989	0.8415	1.0000
23	B023	1.0000	1.0000	0.9536	0.6864	1.0000
29	B029	0.6710	0.6166	0.6692	0.7053	0.7774
38	B038	0.9936	1.0000	0.9071	1.0000	0.9574
41	B041	0.8950	1.0000	1.0000	0.9304	0.9607
Average		0.8803	0.8504	0.8511	0.8396	0.9026
Standard deviation		0.1136	0.1696	0.1202	0.1196	0.1171
Minimum		0.6710	0.6166	0.6692	0.6864	0.6436
Maximum		1.0000	1.0000	1.0000	1.0000	1.0000
Market average		0.9028	0.9209	0.9202	0.9077	0.9388
Market standard deviation		0.1060	0.1165	0.0987	0.1010	0.0865
Market minimum		0.6588	0.6166	0.6692	0.6864	0.6436
Market maximum		1.0000	1.0000	1.0000	1.0000	1.0000

Appendix 1 (cont.) Decomposition of technical efficiency scores for merged banks

No	DMU	Part C: Scale efficiency (ES) 2003	2004	2005	2006	2007
3	B003	0.9639	0.8954	0.9983	0.9637	0.9783
7	B007	0.9005	0.9402	0.9679	0.9662	0.9366
9	B009	0.9069	0.9908	0.9531	0.9710	0.9038
12	B012	0.9158	0.9674	0.9497	0.9854	0.9993
16	B016	1.0000	1.0000	0.9744	0.9969	1.0000
17	B017	0.9644	1.0000	0.9612	0.9326	1.0000
23	B023	0.9081	0.8645	0.6723	0.9918	0.8481
29	B029	0.9870	0.9893	0.9506	0.9353	0.9432
38	B038	0.8960	0.9327	0.9600	1.0000	0.9583
41	B041	0.9318	0.8485	0.9325	0.9597	0.9591
Average		0.9374	0.9429	0.9320	0.9703	0.9527
Standard deviation		0.0383	0.0568	0.0929	0.0238	0.0484
Minimum		0.8960	0.8485	0.6723	0.9326	0.8481
Maximum		1.0000	1.0000	0.9983	1.0000	1.0000
Market average		0.9428	0.9550	0.9427	0.9542	0.9627
Market standard deviation		0.0624	0.0594	0.0715	0.0566	0.0572
Market minimum		0.7137	0.7661	0.6723	0.7452	0.7285
Market maximum		1.0000	1.0000	1.0000	1.0000	1.0000