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HAVE FOREIGN BANKS CONTRIBUTED TO THE SPREAD OF THE GLOBAL FINANCIAL CRISIS TO SAUDI ARABIA?

Mahmoud Haddad and Sam Hakim

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Abstract

We analyze the role of domestic and foreign banks in Saudi Arabia during the latest financial crisis that has ravaged the world since 2007. The study is based on the growth rate in market share of the credit extended by each bank and investors' perception about the risk exposure of this financial institution. We distinguish between purely domestic banks and institutions with joint ownership (local and foreign shareholders). While there is a suspicion that partly owned foreign banks are more risk exposed than their purely domestic counterparts, our findings suggest otherwise. Specifically we do not find evidence that foreign shareholders of Saudi banks, who suffered losses and liquidity problems in their home countries, cut credit in Saudi Arabia nor acted in a manner inconsistent with their domestic counterparts. As such, recommendations for a double standard in banking regulation are not supported by the evidence.

ملخص

لقد حللنا دور البنوك المحلية والأجنبية العاملة في المملكة العربية السعودية أثناء الأزمة الاقتصادية الأخيرة التي خربت العالم منذ عام 2007. وتعتمد الدراسة على معدل النمو في الحصة السوقية للائتمان المقدم من كل البنوك وإدراك المستثمرين للخطورة التي تتعرض لها هذه المؤسسات المالية. لقد ميزنا بين البنوك المحلية الخالصة وبين المؤسسات التي بها ملكية مشتركة (حاملي أسهم محليين وأجانب). على الرغم من الشكوك حول كون البنوك المملوكة جزئيا لأجانب معرضة أكثر للمخاطر من البنوك المملوكة لمساهمين محليين، تشير نتائجنا إلى العكس من ذلك. وتحديداً، لم نجد دليل على أن المساهمين الأجانب في البنوك السعودية، والذين عانوا من الخسائر ومشكلات في السيولة في بلدانهم، قد خفضوا من ائتمانهم في المملكة أو أنهم تصرفوا بطريقة متعارضة مع نظرائهم المحليين. لذا فان التوصيات بازدواجية المعايير في النظم البنكية لا يدعمها أي دليل.

1. Background

Many economists suspect that foreign banks in Saudi Arabia are more exposed to the risks of the financial crisis than local banks for several reasons. First, foreign banks react more pro-cyclically to changes in the host country macroeconomic environment. The parent bank generally reallocates capital over different geographical regions on the basis of expected risks and returns. When economic growth in a particular host country declines, the activities of the subsidiaries in the host country may attempt to scale down in favor of other profitable regions. This scenario may be true in the case of Saudi Arabia when the stock market began to plunge after February 2006. In contrast, domestic banks may not have such foreign alternative investment opportunities and therefore have limited exposure overseas because their lending and investment base are primarily domestic. Second, banks with foreign ownership generally include a shareholder from a large foreign bank who has been impacted in one way or another by the severity of the global financial crisis. These institutions are prone to import shocks from their home countries to host countries. Third, foreign banks tend to have lower exit costs than domestic banks. They are more sensitive to shocks that affect the host country and, in times of crisis, they may simply sell their interest at a loss, pack up and leave. Therefore, their credit is less stable than what domestic banks are able to grant. Fourth, banks with foreign ownership generally utilize derivative products more than domestic banks because they have more expertise in hedging and speculation and can diversify risks more effectively with their larger parent in the foreign country. These derivatives have non-linear risk patterns and do not appear on the bank balance sheet. However, as security prices decline, they contribute to the bank downside risk exponentially.

In Saudi Arabia, the banking sector is feeling the pinch from the global liquidity crunch as the government is caught between efforts to manage inflation and lending to private-sector banks. As in other countries in the Gulf, there is a liquidity management problem. While Saudi Arabia Monetary Agency (SAMA) has repeatedly said that the economy is insulated against the global financial meltdown because of a conservative monetary policy. However, and in spite of that banks' liquidity has tightened. Since October 2008, SAMA has slashed its lending rate 5 times; by more than two-thirds[1], in order to ensure that the banks do not face a cash shortage. Partially owned foreign banks have felt a greater pinch because borrowing from international markets has grown more difficult and has reduced their ability to face the liquidity crisis[2].

2. The Role of Foreign-Owned vs. Domestic Banks in Credit Stability

Prior to the latest financial crisis, the banking sector in Saudi Arabia has enjoyed a period of considerable growth. According to official statistics reported by SAMA, total capital of all commercial banks amounted to 24.5 billion riyals (BR) in 2002 and almost quadrupled to 85.2 BR in 2008. Bank profits also grew rapidly during the same period from 10.5 BR in 2002 to 25.5 BR in 2008. Bank credit also expanded considerably from 211 BR in 2002 to 740 BR in 2008. During this period, banks with partial foreign ownership have increased their presence. This trend presents both opportunities in terms of modernization and operational efficiency and effectiveness of the country's banking system and challenges in terms of possible additional volatility and access to credit and credit risk.

In general, the academic empirical evidence on foreign bank penetration in emerging markets seems to show that the benefits greatly outweigh its potential costs. In particular, foreign entry has been associated with greater deficiency and more stability. For example Crystal et

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[1] Saudi Arabia business brace for a further slowdown. Arab News, 1/3/2009.

[2] Special report on the World Banking Crisis, October 10, 2008, on www.stockpreacher.com

al (2002) have shown that foreign banks in Latin America have showed more robust loan growth, a more aggressive response to asset quality deterioration and a greater ability to absorb losses. Looking at Central and Eastern Europe, Haas and Lelyveld (2005) find that domestic banks contract their credit base during financial crisis whereas foreign banks do not. A similar finding is also noted by Chantapong (2003) in the case of Thailand, but Barth et al (2004) raise a cautionary flag regarding policies that rely excessively on direct government supervision and regulatory restrictions on banks as these measures may not necessarily lead to more stability.

In the context of the Middle East and North Africa region, Damar (2007) examines how a large geopolitical event, such as the war in Iraq, can affect foreign bank lending from developed countries to emerging markets. He finds that the war has had a non-uniform effect on foreign banks lending to the region. Other studies on the MENA region have advocated the positive aspect of foreign banks on the host countries[3]. In the latest global financial crisis, however, the action taken by several monetary authorities in the MENA region suggest that there are strong reasons to be concerned. Specifically, judging from other regional bank crisis such as Latin America and South East Asia, some evidence suggests that the presence of foreign banks may increase capital outflows, and exacerbate economic volatility (Galindo, Micco, and Powell, 2002; Caballero and Krishnamurthy 2003). It is very possible that these effects also hold true in some MENA countries where foreign banks' credit growth is influenced by the health of the parent bank.

Armed with two possible conflicting effects of foreign banks impact on host countries economic infrastructures, we propose to investigate the role of domestic and partially-foreign banks in expanding credit in Saudi Arabia during the latest financial crisis.

3. The Model

Our statistical analysis is based on a panel data statistical analysis that includes 9 banks observed from 2002 through 2009. The time period is important for two reasons. First, it includes the beginning of the major correction in the Saudi stock market which hit its peak in February 2006. This is a purely domestic event. Second, it also covers the beginning of the global financial crisis which began almost a year later, in February 2007, when HSBC Finance, the US mortgage unit of HSCB, reported over US$10 billion in losses from its US mortgage lending business[4]. Because the two events are not simultaneous, the analysis is able to differentiate between local and imported (contagious) factors that impinge negatively on the banking sector. The goal is to discern any change in lending activities from these two events and contrast the strategy adopted by foreign vs. domestic institutions.

The independent variable of the model represents the change in market share for credit in quarter t for bank i, $MKTSH_{it}$. The construction of this variable is consistent with Haasa and Van Lelyveldb (2005) and it is calculated as follows:

($Loans_{i,t}$ / $Total\ Loans_{t}$) − ($Loans_{i,t-1}$ / $Total\ Loans_{t-1}$)

The Total Loans represent the outstanding loans of the entire banking sector as reported by SAMA for quarter t. $Loans_{i,t}$ represent the outstanding loans and advances reported by bank i on its quarterly balance sheet.

The independent variables are:

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[3] In this proposal we will not prepare a literature review but we will only cite the articles of which we are aware on the MENA region, for example, Bennacceur and Omran (2008); Hassan (2005); Isik, Gunduz and Omran (2005); Kobeissi (2004); Saif and Yaseen (2005).

[4] Laeven and Valencia1 (2008).

- **LOANRATIO:** The change in the loan to deposit ratio for bank i in quarter t. This variable is included to control for the natural growth in loans over time and distinguish from the change in market share attributed to a strategic / tactical decision by the bank to penetrate or retrench from the market.
- **INVESTM:** The change in a bank's investments relative to assets. This variable controls for example to a desire by the bank to reduce its outstanding loans in order to increase its investment portfolio. Loans and Investments represent two competing sources of income and a bank manager must decide how to allocate its capital to fund these two outlets.
- **NONPERFORM:** Nonperforming loans to total assets. This variable is included to measure how aggressive a bank is in lending. The ratio is an indicator of the quality of asset quality. Ideally, this ratio should be low.
- **DERIV:** Quarterly change in fair value / cash flow hedges to measure any losses on derivative positions (from the bank statement of cash flows). The difference is measured relative to the bank total loans to yield a fraction. A positive difference indicates that a bank has actually profited on its hedges, whereas a negative indicates a loss. This variable is consistent with Fair Value accounting.
- **STOCKMKT:** The return on the Saudi stock market index (TASI) to control for the systematic risk in the market
- **CRISIS:** Time dummies to identify crisis events
- **OWNERSHIP:** The actual % of foreign ownership in bank *i*

The data period covers 27 quarters from September 2002 through March 2009, and includes all publically traded banks in Saudi Arabia which existed throughout this time period. There are 9 publically held commercial banks[5] in Saudi Arabia. Our analysis focuses on s:

1. Al Rajhi Bank
2. Arab National Bank
3. Bank AlJazira
4. Banque Saudi Fransi
5. Riyad Bank
6. Samba Financial Group
7. Saudi Hollandi Bank
8. The Saudi British Bank
9. The Saudi Investment

Our study includes all partially owned foreign banks. By law, a totally owned foreign bank cannot operate in Saudi Arabia. The partially owned foreign banks are: Banque Saudi Fransi, Saudi Investment Bank, Saudi Hollandi Bank (which is partially owned by ABN Amro), and the Saudi British Bank. The Arab National Bank is partially owned (40%) by the Arab Bank in Amman, Jordan. In addition, the government of Pakistan has a diminutive stake (5.8%) in Bank Al Jazira. For the purpose of this study, however, we do not treat these two institutions as partially foreign-owned because the non-Saudi owners do not represent an international institution likely to transmit a financial crisis to the domestic market. All other banks in our study have 100% local ownership[6]. Table 1 provides the ownership structure of the bank in our data set.

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[5] Our analysis ignores Bank Al Bilad and Bank Al Inma which have recently been formed. Bank Al Bilad started its operations in the 1st quarter of 2006, and Bank Al Inma in 2009.

[6] Samba Financial Group, the holding company of the former Saudi American Bank (Samba Bank) is now entirely owned by Saudi investors.

The sources of our panel data are the quarterly financial statements (balance sheet, income, and cashflow statements) provided to us by the Saudi stock market authority (Al Tadawul) and which all banking institutions are required to disclose. The ownership structure of each bank was also provided by Al Tadawul. The total bank credit in each quarter is obtained from SAMA. Table 2 shows the summary statistics of the main variables in the data set.

With this information, we estimate the following panel model:

$$\Delta MKTSH_{it} \quad = \alpha + \beta_1 \Delta Loanratio + \beta_2 \, \Delta Investm + \beta_3 \, \Delta Deriv + \beta_4 \, \Delta Nonperform$$

$$+ \, \beta_5 \, \Delta StockMkt + \, \beta_6 \, Crisis + \, \beta_7 \, Ownersh + \, u_{it} \qquad\qquad (1)$$

where u_{it} is the idiosynchratic error, $u_{it} \sim \text{IID}(0, \sigma_u^{\,2})$, $\beta_1, \, ..., \beta_7$ are coefficient vectors, $i = 1,$ $..., N$ where N is the number of banks in the sample (a total of 8), and $t = 1, \, ..., T_i$ is the number of quarters in the sample for bank i.

We estimate two versions of model (1). In the first case, we estimate a fixed-effects (FE) model where the means of the bank variables are subtracted from the original data. The FE model is the preferred modeling methodology when the individual effect of each bank is negligible, and there is relatively a small number of banks in the panel data. The second estimation methodology is the random effects (RE) model where each bank is assumed to be a drawing from a probability distribution. The RE model is better capable to estimate the effect of time-invariant independent variables, such as the percentage of foreign ownership in a bank.

4. Results
We begin by analyzing the graphical representation of the change in the Saudi domestic credit over time (Figure 1). It is apparent that since 2002, the growth in credit has continued unabated and was unconcerned by the gyrations in the stock market. Domestic credit almost tripled in a span of 7 years from SR 210 billion in 2002 to SR 728 billion by 2009. Even when the world financial crisis occurred in 2007, domestic credit continued to grow. Another important, and purely domestic, factor is that during this period, the stock market zigzagged considerably from an index which was at 2650 in 2002, to 4704 by the 1st quarter of 2009, the stock market peaked at over 21,000 in February 2006. Bank profitability was also volatile. As can be seen in Table 2, the average return on equity was around 6.3%, with a maximum at some point 20.7% and a low of -2.3%.

In Figure 2, we show a breakdown of the growth in the loan to deposit ratio by bank type. One important observation is that both the domestic and partially foreign banks have continued to grow their loan portfolio fairly consistently since 2002 (there is a slight lull around the end of 2005 after a period of spectacular growth between 2002 and 2005). It is also clear from the graph that the two types of banks have comparable growth strategies.

Turning to the econometric analysis, we report the estimation results of model (1) in Table 3. In the top panel, we provide the estimation of the fixed-effect model. The dependent variable represents the change in the market share of each bank by quarter. The sign of the independent variable, the loan-to-deposit ratio, is positive, suggesting that as loan increase relative to deposits over time, the bank is gaining market share. The sign is correct and logical, and the coefficient is highly statistically significant. The magnitude of the coefficient indicates that a 1% increase in the loan-to-deposits ratio increases a bank market share by 0.02%.

The sign of the derivatives variable which is measured as the change in the fair value account with respect to loans, as reported on a bank statement of cash flows, is also positive and significant. It indicates that a loss on a bank hedge will cause a retrenchment whereas an increase prompts the bank to increase its market share. The investment variable is also

consistent with this reasoning and is highly statistically significant. The negative sign suggests that an increase in a bank's investments reduces its market share of credit as an institution shifts funds away from loans and into other sources of revenues. The stock market index variable is also negative and significant suggesting that a bank is expected to allocate funds away from loans and possibly into other investments as the stock market rallies. The effect of a bank non-performing loans (to assets) on its market share is also negative. The sign indicates that a bank retrenches its lending operations when its non-performing loans increase. After controlling for all these bank specific variables, however, both the crisis dummy and the ownership structure of the bank are not statistically significant. The crisis variable is properly signed, suggesting that the financial crisis caused the growth in bank credit to slow. At the same time, partially-foreign banks do not seem to have acted in a manner different from the purely domestic institutions. In fact, the positive sign suggests that partially owned foreign banks have actually increased their market share, and not reduced it, but the coefficient of this variable is not statistically significant. One can actually observe a slight change in the pattern of growth in market share during the 3rd quarter of 2007 and 2008 (in Figure 2) where domestic banks momentarily topple partially-owned foreign banks. This change however is not statistically significant.

We also tested the effect of the bank profitability on market share. None of the standard measures of profitability (ROE, and ROA) were significant. Even though the banks are clearly hurting as a result of the financial crisis, as it is evident from the historically low ROE in figure 3, the historical profitability does not appear to be a factor in making long term decisions to penetrate the loan market. One possible explanation is that the banking business is a very valuable privilege in Saudi Arabia and banks are focused on the long term. They are simply not going to retrench and cut credit if and when their profitability suffers during one quarter.

The results of the random effects (RE) model are reported in the lower panel of Table 3. Overall, the results are consistent with those of the FE model. The non-performing loans-to-assets variable is no longer statistically significant however, even though it has the right sign. Consistent with the FE model, the coefficients of the crisis dummy and the ownership structures are not statistically significant in the RE model, even though this model is more capable to estimate the effect of time-invariant foreign ownership in a bank.

5. Conclusion and Policy Implications

This paper examined how the market share of the largest banks in Saudi Arabia has evolved during the past 8 years. Using quarterly data since 2002, we focused on the credit extended by public banks during a time where the Saudi stock market experienced considerable upheavals and the world experienced a financial crisis unseen since the last great depression of 1929. Throughout this study period, however, it appears that the total credit provided by the banking sector continued uninterrupted, and the pace of lending was relentless despite many financial challenges.
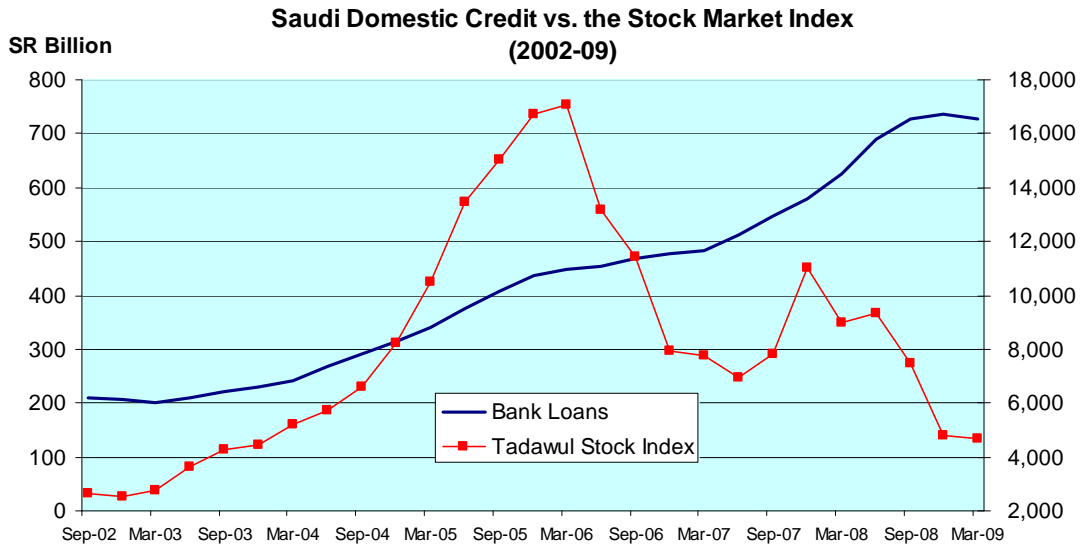
Specifically, this paper investigated the role of domestic and partially owned foreign banks over 27 quarters. The study controlled for the natural growth in loans and investments, losses or gains on hedges, the magnitude of non-performing loans, and the stock market performance. All these factors had the expected effects on a bank's market share. Yet, after all these factors are accounted for, it doesn't appear that partially-owned foreign banks have acted in a manner inconsistent with domestic institutions. At the same time, the financial crisis did not lead to a retrenchment of credit overall, nor did it force banks of different ownership structures react differently.

The findings from this research are expected to provide guidance to the Central Bank and policy makers on ways to ensure that the Saudi banking system is restored to good health while containing the fallout of the financial crisis on the real economy. Undoubtedly, the latest financial crisis has weakened the Saudi banking sector considerably as this event has compounded the effect of a severe stock market correction which was well under way. Should the crisis continues and the damage to the banking sector persists, it is not clear whether the monetary authorities should provide blanket support to all banks without distinction. Our findings help answer the question whether a double standard is required to deal with the crisis. One such approach advocated in other countries would be to provide substantial liquidity support, explicit government guarantees, and forbearance from prudential regulations for domestic banks only. And at the same time, some economists would argue that the monetary authority should step in and force the foreign owned bank to recognize losses and arrange for a buyer to absorb the troubled institution. In other countries, such corrective policy measures may ensure that domestic credit is uninterrupted or stave off the spread of a financial pandemic. But in Saudi Arabia, these measures are not recommended. The evidence here points that partially owned foreign banks have not acted any differently than domestic ones. Therefore, there is no support for any regulatory policy based on double standards or one which treats foreign banks differently.

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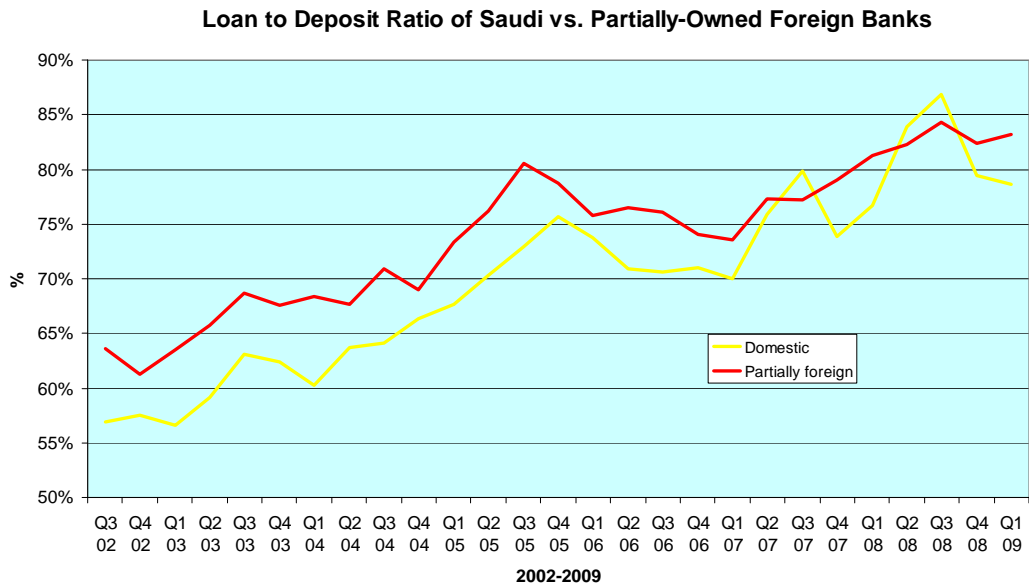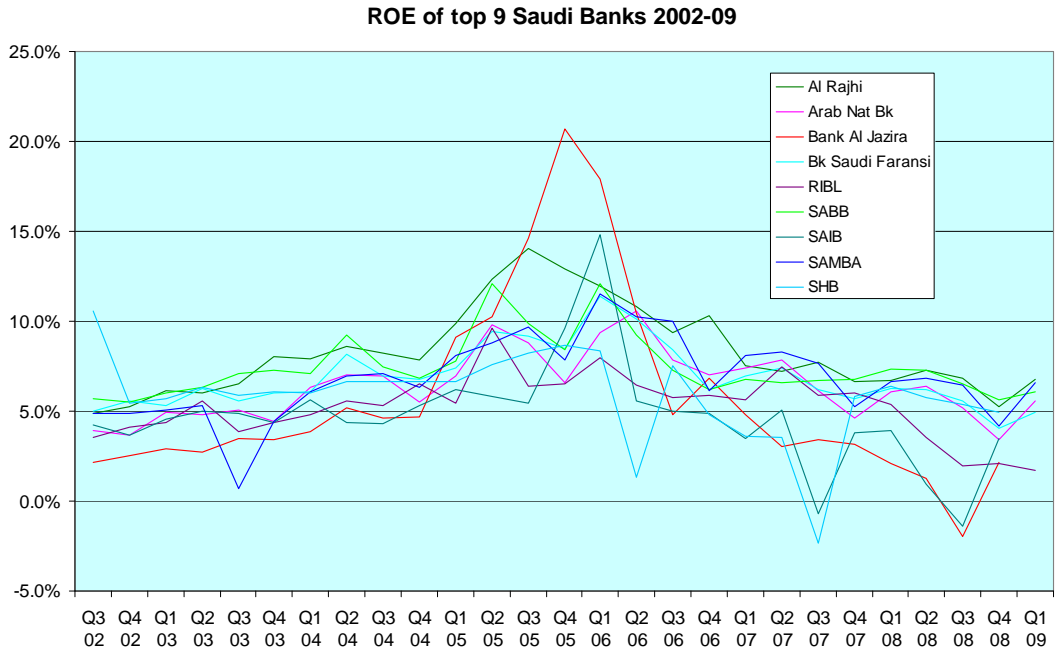
Figure 1

Saudi Domestic Credit vs. the Stock Market Index (2002-09)

Figure 2

Loan to Deposit Ratio of Saudi vs. Partially-Owned Foreign Banks

Figure 3

ROE of top 9 Saudi Banks 2002-09

Table 1: Foreign Ownership of the Largest Saudi Banks

Bank	Stock Market Symbol	% of Foreign Ownership	Foreign Entity
Al Rajhi Bank	RJHI	0%	
Arab National Bank	ARNB	40%	Arab Bank - Jordan
Bank Al Jazira	BJAZ	5.80%	National Bank of Pakistan
Banque Saudi Fransi	BSFR	31.10%	Banque Calyon (BNP Parisbas - France)
Riyad Bank	RIBL	0%	
Samba Financial Group	SAMBA	0%	
Saudi Hollandi Bank	AAAL	39.90%	ABN Amro
The Saudi British Bank	SABB	40%	Hong Kong Shanghai Bank
The Saudi Investment Bank	SIBC	7.40%	JP Morgan

Table 2: Summary Statistics of the Main Banks

	Rate on Deposits	Loans to Deposits Ratio	Investments to Assets Ratio	Ratio of Non-Performing Loans to Assets	Fair Value to Loans Ratio	ROA	ROE	TASI
Mean	3.20	0.6397	0.3505	0.0025	0.0026	0.0081	0.0638	0.0383
Median	2.81	0.7069	0.2846	0.0015	0.0002	0.0068	0.0618	0.0400
Minimum	1.26	0.0031	0.0784	-0.0001	-0.0126	-0.0033	-0.0234	-0.3560
Maximum	5.12	1.0278	0.8823	0.0186	0.0390	0.0820	0.2069	0.4128
Standard deviation	1.37	0.2418	0.1982	0.0029	0.0078	0.0072	0.0285	0.1898
C.V.	0.43	0.3779	0.5654	1.1777	3.0339	0.8880	0.4463	4.9598
Skewness	0.17	-1.8127	1.7161	2.6090	2.9750	6.0827	0.8358	-0.2105
Ex. Kurtosis	1.54	2.3492	1.9735	7.7531	10.0830	51.4220	3.9504	-0.5716

Table 3: Panel Regression Estimation

$$\Delta MKTSH_{it} = \alpha + \beta_1\, \Delta Loanratio + \beta_2\, \Delta Investm + \beta_3\, \Delta Deriv + \beta_4\, \Delta Nonperform$$
$$+ \beta_5\, \%\Delta StockMkt + \beta_6\, Crisis + \beta_7\, Ownersh + u_{it}$$

ΔMKTSHit = Change in market share of Bank i (Loans i,t / Total Loans t) – (Loans i, t-1 / Total Loans t-1)
ΔLOANRATIO: The change in the loan to deposit ratio for bank i in quarter t.
ΔINVESTM: The change in a bank's investments relative to assets.
ΔNONPERFORM: The change in nonperforming loans to total assets.
ΔDERIV: Quarterly change in fair value / cash flow hedges to measure any losses on derivative positions
%ΔSTOCKMKT: The return on the Saudi stock market index (TASI)
CRISIS: Time dummy to identify the timing of the financial crisis
OWNERSHIP: The actual % of foreign ownership in bank i

Fixed-Effects (FE) Model

Variable	Coefficient	std. error	t-ratio	p-value	
const	0.0003	0.0002	1.212	0.227	
Δ LOANRATIO	0.0145	0.0037	3.921	0.000	***
Δ DERIV	0.1147	0.0523	2.195	0.029	**
Δ INVESTM	-0.0170	0.0050	-3.429	0.001	***
% ΔSTOCKMKT	-0.0014	0.0006	-2.135	0.034	**
Δ NONPERFORM	-0.0696	0.0340	-2.048	0.042	**
CRISIS	-0.0001	0.0003	-0.527	0.599	
OWNERSHIP	0.0005	0.0009	0.605	0.546	

Sum squared resid   207.37   S.E. of regression 0.97, Adj R-squared   0.125, F(7, 220) 5.61 P-value(F) 5.68e-06, Log-likelihood -312.7103, Akaike criterion   641.42, Schwarz criterion   668.85

Random-Effects (RE) Model

Variable	Coefficient	std. error	t-ratio	p-value	
const	-0.0001	0.0005	-0.252	0.801	
Δ LOANRATIO	0.0216	0.0045	4.786	0.000	***
Δ DERIV	0.1972	0.0765	2.579	0.011	**
Δ INVESTM	-0.0216	0.0078	-2.771	0.006	***
% ΔSTOCKMKT	-0.0033	0.0013	-2.662	0.008	***
Δ NONPERFORM	-0.0374	0.0780	-0.480	0.632	
CRISIS	0.0002	0.0005	0.355	0.723	
OWNERSHIP	0.0014	0.0013	1.094	0.275	

Mean dependent var 0.00018   S.D. dependent var 0.00355, Sum squared resid 0.002408   S.E. of regression 0.003301, Log-likelihood 982.73   Akaike criterion   -1949.46, Schwarz criterion -1922.02
Significant @ 5% (**) or 1% (***)