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Capital Adequacy, Bank Behavior and Crisis: Evidence from Emergent Economies

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Abstract
Using the simultaneous equations model, this paper examines the impact of capital requirements on bank risk-taking during the recent financial crisis. It also explores the relationship between capital and risk decisions and the impact of economic instability on this relationship. By analyzing the data of 46 commercial banks between 2004 and 2014 from four Middle East countries, the study concludes a positive effect of regulatory pressure on bank capital and bank risk taking. The findings reveal also that banks close to the minimum regulatory capital requirements improve their capital adequacy by increasing their capital and decreasing their risk taking. Furthermore, the results show that economic crisis positively affects bank risk changes, suggesting that banks react to the impact of uncertainty by increasing their risk taking. Finally, the estimations show a positive correlation between banks profitability and increase in capital, indicating that profitable banks can more easily improve their capitalization through retained earnings rather than issuing new securities.

Keywords: bank regulation, risk taking, bank capital, crisis.

Introduction

One of the major developments undergone by banking industry in both developed and developing countries all over the world during the last two decades, has been the implementation of minimum capital standards for internationally active banks under the Basel Capital Accords. The purpose of the first accord[1], also known as Basel 1, was to introduce a uniform way of calculating capital adequacy in order to strengthen financial stability by adopting a relatively simple approach to credit risk with the potential to distort incentives for bank risk-taking. In 2006 the Basel Committee issued the revised version of the 1988 Accord known as Basel 2. The purpose of the Now Capital Accord was to strengthen further the soundness and the stability of the international banking system and to promote the adoption of strong risk management practices by banking industry. Both Basel I and II apply the same basic principle: a bank is required to increase its equity capital in proportion to increases in the level of asset risk. Asset substitution incentives are therefore minimized. Requirements arising from a higher risk-adjusted capital to assets ratio would reduce the use of a bank's cheap and relatively interest rate insensitive deposits to fund risky investments; this in turn reduces the incentive for risk-taking. However, Hovakiman & Kane (2000) find that the risk based capital standards are not able to provide full control over the asset substitution incentives. Merton (1995) show that when capital standards are not based on any consistent economic soundness standard through securitization and other techniques it is often possible to restructure portfolios to have basically similar risks, but much lower regulatory capital requirements.

[1] The guidelines of Basle accord were originally adopted by the central banking authorities from 12 developed countries (all G-10 countries plus Luxembourg and Switzerland) in July, 1988. Their implementation started in 1989 and was completed four years later in 1993.

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Regulatory capital arbitrage enable banks to achieve internal capital ratio targets with lower amount of Tier 1 capital[2], thereby reduces a bank's effective regulatory capital requirements. Acharya (2001a,b) also show that risk-based capital adequacy regulation could actually intensify systemic risk. The evidence from the financial crisis in 2008 proves these concerns and demonstrates that Basel Capital Accords do not effectively minimize the asset substitution moral hazard as banks take advantage of the loopholes in the capital regulation, which enable them to restructure and reengineer items on the balance sheet so that they improve their capital ratios but at the same time increase their overall risk. This study examines the impact of capital adequacy requirements on banks' capital and risk talking behavior with focus on four developing countries (Saudi Arabia, Jordan, Kuwait and United Arab Emirates). The study explores also the relationship between capital and risk decisions and the impact of economic crises on this relationship. We expect that adjustments in capital and risk levels are not related and regulatory tools have the desired effect on capital but have no effect on bank risk-taking. This research is motivated by the contradictory conclusion in the existing literature regarding the effectiveness of capital regulation to control banks' risk taking attitudes. However, these studies do not incorporate economic shocks and are based in comparatively stable economic environments. Furthermore, even though the impact of capital requirements on banks risk taking has become a topical issue in light of the recent banking and economic crises, not many studies have examined the effectiveness of capital regulation in controlling banks' risk taking behavior during periods of economic instability and uncertainty. Moreover, the existing studies were undertaking in developed economies. Very few studies have been conducted in less developed countries, especially in those countries that are in their early stages of financial system development. Therefore, and important contribution of this study is to provide further empirical evidence on bank capital behavior in developing countries. The examination of banks capital behavior in these four emergent countries is motivated by the fact that banks in these counties is of interest in several respects. Firstly, the predominance of domestic banks across these countries minimized direct cross-border spillovers through the ownership channel within these countries and form international banks. Second, the high share of the traditional banking book in banks' on- and off-balance sheets limited losses from exposures to structured products and derivatives to a few isolated cases. Third, the banking sectors in these countries were buttressed by high profits and capital buffers in the run-up to the 2008 global financial crisis. The rest of the paper is organized as follows: Section 2 reviews the theoretical and empirical literature dealing with the effects of capital requirements on banks' behavior. Section 3 presents the data used in the study, while section 4 outlines the empirical methodology. Results are discussed in section 5 and some conclusions are drawn in section 6.

Review of the Empirical Literature

Several empirical papers have focused on understanding the relationship between risk and capital, testing whether increases in capital requirements force banks to increase or decrease their risk. Shrieves and Dahl (1992) argue that a positive relationship between the key variables is in line with several hypotheses which include the unintended effect of minimum capital requirements, regulatory costs; bankruptcy cost avoidance as well as managerial risk aversion. Jacques and Nigro (1997) on the other hand find a negative relationship between changes in capital and risk levels.

They note that such a finding may be attributable to methodological flaws in the risk based guidelines. Basing on confidential UK banks data, Ediz et al. (1998) suggest that banks adjust their capital levels each year by more than the difference between the current level and the target they

[2] Tier 1 capital, also called core capital, consists mainly of stockholder equity capital and disclosed Reserves.

have in mind, which means that banks overshoot the target (and by a higher amount each year). Rime (2001) find that Swiss banks close to the minimum regulatory capital requirements tend to increase their ratio of capital to risk-weighted assets. This indicates that regulatory pressure has the desired impact on banks' behavior. Moreover, regulatory pressure has a positive and significant impact on banks' risk-taking. The study by Ghosh *et al* (2003) investigates the relationship between changes in risk and capital for Indian banks. The results revealed that capital ratio decisions, and regulatory framework should be designed to encourage banks to obtain higher CRAR than the stipulated capital level. For a set of German savings banks, Heid *et. al* (2004) suggest that the coordination of capital and risk adjustments depends on the amount of capital the bank holds in excess of the regulation. Banks with low capital buffers try to rebuild an appropriate buffer by raising capital while simultaneously lowering risk. In contrast, banks with high capital buffers attempt to maintain their capital buffer by increasing risk when capital increase. However, banks do not adjust capital when risk changes. Claessens and Laeven (2004) observed that lower restrictions on activity lead to more competition, which could have a negative effect on profits and the charter value of banks, encouraging greater risk-taking. Konishi and Yasuda (2004) also found that the implementation of the capital adequacy requirement at the Japanese banks reduced risk-taking as desired by regulatory authorities, nevertheless the decline of franchise values increases risk-taking behavior of those banks. Homolle (2004) investigated whether more stringent capital requirements lead to reduce or to increase bank risk-taking, and he concluded that some banks increased assets risk due to the enforcement of more stringent capital requirements. Hussain et, al (2004) analyze the impact of capital requirements on commercial banks in developing counties within a cross-section framework. The results show that capital regulations did not increase the capital ratios of banks in the developing countries but reduce portfolio risk of banks. The study by Patrick V. (2005) uses a sample of commercial banks from G-10 countries to investigate the impact of the first accord Basel I on capital and risk-taking. The results show that changes in capital and credit risk were not related in Canada, France, Italy, and UK over the 1988-1995 periods, while changes in capital and credit risk were positively related for Japan and negatively related for US banks at the beginning of the 1990s. Muride and Yaseen (2006) study the study the impact of the Basel Accord Regulations on bank capital and risk behavior in the MENA region. Using annual observations in 1995-2003, it is found that the capital requirements significantly affect banks' capital ratio decisions and that regulatory pressure did not induce banks to increase their capital, but did positively affect their chosen risk levels. Khaled A, *et al.* (2008) use data from Jordanian banks during the period 1990-2002. The study concludes strong positive effects of the regulatory framework and banks capital stipulated levels that need to be reconstructed to meet their risk profiles. Banks close to the minimum regulatory capital requirements tend to increase their capital base, given their different risk's levels. Terhi Jokipii & Alistair Milne, (2009) Building on unbalanced panel of US commercial bank and BHC data between 1986 and 2008, examine the relationship between short term adjustments in bank capital buffers and risk. The study finds that the relationship appears to be positive and two ways during the sample period. Moreover, the authors show that the management of short term adjustments to capital and risk is dependent on the degree of bank capitalization.

Sample Description

Our empirical analysis is based on a balanced panel data set of 46 commercial banks operating in four countries, Jordan, UAE, Saudi Arabia and Kuwait over the period 2004 – 2014. Other types of banks such as the Islamic and investment banks are excluded from the sample because of the different type of business of these banks. Data collected from the central banks of these countries and from the financial reports of the banks in the sample.

Methodology

Acknowledging the contemporary interrelationship between capital and risk, the simultaneous model developed by Shrieves and Dahl (1992) is utilized in this research. The model is adjusted and modified by incorporating the adjustment process in bank capital and risk level due to the pressure of the economic crisis and capital regulation. In the Shrieves and Dahl model, observed changes in bank capital and risk levels are decomposed into two components, a discretionary adjustment and a change caused by factors exogenous to the bank such that:

$$\Delta CAP_{j,t} = \Delta d\ CAP_{j,t} + E_{j,t} \quad (1)$$

$$\Delta RISK_{j,t} = \Delta d\ RISK_{j,t} + U_{j,t} \quad (2)$$

Where:

$\Delta CAP_{j,t}$ and $\Delta RISK_{j,t}$ are the observed changes in capital and risk for bank j in period t.

$E_{j,t}$ and $U_{j,t}$ are the exogenously determined variables. Capital exogenous shocks occur mainly as a result of unanticipated changes in earnings, while asset credit risk exogenous shocks occur mainly as a result of unanticipated economic developments such as changing assets or loan quality (Hart and Jaffee, 1974 and Marcus, 1983).

$\Delta^d\ CAP_{j,t}$ and $\Delta^d\ RISK_{j,t}$ are endogenously determined adjustments (discretionary changes) in capital and risk.

The discretionary changes in capital and risk $\Delta^d CAP_{j,t}$ and $\Delta^d\ RISK_{j,t}$ are modeled using the partial adjustment framework, thereby recognizing that Market illiquidity and various adjustment costs prevent banks from adjusting instantaneously to achieve desired capital and risk levels. In this framework, banks are assumed to aim for optimal capital and risk levels (or target levels). Banks adjust their capital and risk to meet their target level since the exogenous shocks force actual levels away from target levels. Full adjustment might be too costly or unfeasible. Subsequently, banks may be observed making only partial adjustments towards their target levels. The discretionary changes in capital and risk are proportional to the difference between the target levels and the levels existing in period t-1.

$$\Delta^d CAP_{j,t} = \alpha\ (CAP^*_{j,t} - CAP_{j,t-1}) \quad (3)$$

$$\Delta^d RISK_{j,t} = \beta\ (RISK^*_{j,t} - RISK_{j,t-1}) \quad (4)$$

Where $CAP^*_{j,t}$ and $RISK^*_{j,t}$ are bank $_j$'s target capital and risk levels, respectively. In the partial adjustment framework, the discretionary changes in capital and risk are proportional to difference between the target level and the level existing in period t-1. Substituting equations (3) and (4) into equations (1) and (2), the observed changes in capital and risk can be written:

$$\Delta CAP_{j,t} = \alpha\ (CAP^*_{j,t} - CAP_{j,t-1}) + E_{j,t} \quad (5)$$

$$\Delta RISK_{j,t} = \beta\ (RISK^*_{j,t} - RISK_{j,t-1}) + U_{j,t} \quad (6)$$

While there are numerous variables that affect changes in capital and risk, equations 7 and 8 predict that changes in capital and risk in period t are a function of the target capital and risk levels, the lagged capital and risk levels, and any exogenous factors or shocks.

$$\Delta Cap = \alpha_0 + \alpha_1 REG_t + \alpha_2 ROA_t + \alpha_3 SIZE_t + \alpha_4 \Delta RISK_t + \alpha_5 COUNTRY_t + \alpha_6\ GROWTH_t - \alpha_7 CAP_{t-1} + \varepsilon_t \quad (7)$$

$$\Delta Risk = \beta_0 + \beta_1 REG_t + \beta_2 LLP_{j,t} + \beta_3 SIZE_t + \beta_4 COUNTRY_t + \beta_5 GROWTH_t + \beta_6 \Delta Cap_t - \beta_7 Risk_{t-1} + v_t \quad (8)$$

Bank capital and risk level targets are not observable and are affected by exogenous variables as well as discretionary bank behavior (endogenous variables).

Model Specification

Proxy for Capital

Two measures can be used to measure banks capital, the Ratio of Capital to Assets ratio (RCTA) or the Ratio of Capital to Total Weighted assets (RCWA)[3]. This measure has become more popular since the introduction of risk weighted capital standards and has been used by Jacques and Nigro (1997), Aggrawal and Jacques (1998) and Ediz, and Michael and Perrandin (1998). In this research Ratio of Capital to Total Weighted assets (RCWA) is used.

Proxy for Credit risk

To measure the bank risk, the risk-weighted total assets to total assets ratio is used as the proxy for risk (RWA).

Explanatory Variables

The target capital and risk levels of a bank are not observable, they are assumed to depend on some set of observable variables describing the bank's financial condition and the state of the economy in each country:

Size

Size (SIZE) is measured by Total Assets. It is expected to have an influence toward the targeted risk and capital levels due to its relationship with risk diversification, investment opportunity, and access to equity capital, Shrieves and Dahl (1992), Aggarwal and Jacques (1998).

Bank Profitability

Bank Profitability is measured by Return on Assets (ROA). It is used as a performance measure, and is defined as the ratio of banks before-tax net income divided by its total assets, Aggarwal and Jacques (1998).

Provisions for Loan Losses

Provisions for loan losses (*LLP*) will be exploited in our estimations. The relationship of this variable with risk-taking depends on the definition of credit risk (Rime, 2001; Heid et al., 2003; Cannata and Quagliariello, 2006). Provisions are used either to cover the losses already recorded and written-off of total loans,[4] or to cover (future) expected losses, leading to a positive relationship between the amount of bad loans and the provisions for loan losses. Given the nature of the indicator of risk-taking adopted by this study, we expect a positive relationship between *LLP* and *RISK*.

Gross domestic product

GROWTH is the rate of GDP growth included in the capital and the risk equations in order to take account of country-specific macroeconomic shocks.

Regulatory Pressure

Regulatory pressure is among the most important factors that influence capitalization level and risk taking of banks. This variable detects whether banks subject to minimum capital standards, feel "threatened" by regulatory constraints, which force them to boost their capital and/or reduce their risk. The regulatory pressure variables, proposed by Ediz et al. (1998) and Aggarwal and Jacques (1998). The variable is:

- REG = 1 if a bank has capital adequacy ratio less than the regulatory capital requirement 8%.
- REG = 0 if a bank has le capital adequacy ratio equal to or more than the regulatory capital

[3] This ratio was used by Shrieves and Dahl (1992) and Rime (2001).

[4] This results in a decrease in risk weighting.

requirement 8%.

Country dummy

COUNTRY is the country dummy variable (1 if bank i belongs to country j, 0 otherwise)

Empirical Results

In this section we present the results for the system based on the ratio of capital to risk-weighted assets (RCWA) implemented by using the OLS, the Fixed effect and the Random effect models. While OLS model comprise autocorrelation, it produces biased results, so we adopted Fixed Effect Model and Random Effect Model to generate consistence and efficient estimations of the parameters of interest. The empirical results reject the hypothesis that changes in capital and changes in risk do not affect each other or not affected by exogenous and endogenous variables. Therefore the alternative hypotheses are retained. Table 5 reports the results of the equations 7 and 8. In the capital equation, the bank size (SIZE) has a negative and significant effect on capital, indicating that large banks have easier access to capital markets and can therefore operate with lower amounts of capital or that they feel less pressure to increase their capital ratios because of a " too-big-to-fail". Furthermore, this finding could provide evidence in favor of scale economies whereby larger banks will generally enjoy a higher level of screening and monitoring than their smaller counterparts resulting in a reduction excess capital held as insurance. Moreover, the negative coefficient is consistent with the notion that smaller banks are less diversified than their larger counterparts and therefore hold larger capital buffer. The lagged value of capital CAPt-1 is positive and has a significant coefficient in the three models, implying that increasing capital within the last year would increase the change in capital in the current year. The variable ROA has a significant and positive impact on capital, indicating that profitable banks can more easily improve their capitalization through retained earnings rather than issuing new securities. This could be due to the undeveloped financial market and/or the ownership nature of banks, which is family owned to a large instinct. The GDP growth (GROWTH) has no effect on target capital. The positive and significant impact of the regulatory pressure variable (REG) on capital level indicates that banks close to the minimum legal requirements tend to improve their capital adequacy in order to avoid the regulatory penalties and to provide a buffer against shocks to equity. These finding are in line with the findings of Aggarwal and Jacques, (1998) and Ediz et al., (1998).

In the risk equation, the bank size (SIZE) has a negative and significant effect on the level of bank risk which indicates that larger banks have lower risk than smaller ones. This result, which is consistent with the findings of Godlewski (2005) and Murinde and Yaseen (2004), demonstrates that a larger size allows a greater diversification to mitigate the credit risk exposure. The loan loss provision (LLP) has negative and significant impact on risk level, which suggests that increasing provisions and allowance in banks reduces the level of risk. The regulatory pressure (REG) has positive and significant impact on the risk level, implying that increased capital requirements induce banks to increase their capital ratios by increasing their level of risk. The observed increases in the level of risk may be due to attempts by the banks to generate higher expected returns which in turn increase their retained earnings and hence capital. This finding is inconsistent with the findings of Shrives and Dahl (1992), Rime (2001) who concluded that regulation has no effect on the level of risk. The lagged level of risk RISKt-1 has a negative and significant effect on risk change, because the increased level of risk in the last year will decrease change in risk in current year. Return on assets (ROA) has a positive and significant impact on the risk change which implies that profitable banks increase their level of risk. Also the GDP growth

has a positive and significant impact on the level of risk. This finding suggests that, during periods of economic instability, banks are willing to forgo additional returns by investing in high risk investments. Our results show a negative and significant relationship between changes in capital ΔCap and changes in risk levels ΔRisk. This negative relationship suggests that banks increased their level of capital, in response to capital requirements, by decreasing their level of risk. Shrieves and Dahl (1992) and Aggrawal and Jacques (1998) find also a negative relationship between ratio of capital to Risk-Weighted Assets (RCWA) and Risk. While Rime (2001) concluded that there is no significant relationship between RCWA and Risk.

Conclusion

In this study we have examined banks capital and risk behavior of banks from Jordan, Saudi Arabia, UAE, and Kuwait to test the reaction of these banks to regulatory pressure during the period 2004-20012. The regression results suggest that there is a strong positive effect of regulation on the level of capital, stated by Shrieves and Dahl (1992), Rime (2001). In addition regulation affects positively the risk levels. The study concludes that banks close to the minimum regulatory capital requirements improve their capital adequacy by increasing their capital and decreasing their risk taking. In addition, our results suggest that during economic crisis, banks tend to increase their risk taking. Evidence from different geographic areas and other type of banks, such as the Islamic banks may be subject of further research.

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Table 1 Banks in Kuwait

N.	Name	Year
1	NBK	1952
2	Commercial Bank of Kuwait (K.S.C	1960
3	Gulf Bank	1960
4	Al Ahli Bank of Kuwait	1967
5	Al Ahli United Bank	1971
6	Burgan Bank	1971
7	Kuwait International Bank	1973
9	Kuwait Finance House	1977
10	Boubyan Bank	1982

Table 2 Banks in Saudi

N	Name	Year
1	The National Commercial Bank	1953
2	The Saudi British Bank	1978
4	Alinma Bank	1980
5	Banque Saudi Fransi	1977.
6	Riyad Bank	1980
7	Samba Financial Group (Samba)	1980
8	Saudi Hollandi Bank	**1977**
9	Arab National Bank	1979

Table 3 Banks in UAE

N.	Name	Year
1	National Bank Of Abu Dhabi	1968
2	Abu Dhabi Commercial Bank	1985
3	Arbift	1976
4	Union National Bank	1982
5	Commercial Bank Of Dubai	1969
6	Emirates Nbd Bank	1980
7	Mashreq Psc	1967
8	Bank Of Sharjah	2004
9	United Arab Bank	1975
10	The National Bank Of R.A.K	1976
11	Commercial Bank International	1991
12	National Bank Of Fujairah	1982
13	National Bank Of U.A.Q	1982
14	First Gulf Bank	1979
15	Dubai Bank	2002

Table 4 Banks in Jordan

N.	Name	Year
1	Arab Bank Plc.	1930
2	Arab Banking Corporation (Jordan)	1990
3	Arab Jordan Investment Bank	1980
4	Bank Of Jordan Plc	1960

5	Cairo Amman Bank	1960
6	Capital Bank Of Jordan	1995
7	Jordan Commercial Bank	1977
8	Jordan Kuwait Bank	1976
9	Jordan Ahli Bank Plc	1955
10	Societe Generale De Banque / Jordanie	1990
11	The Housing Bank For Trade & Finance	1973
12	Bank Al Etihad	1978

Table 5: Results for the system based on the Ratio of Capital to Total Weighted Assets (RCWA)

	OLS Model		***Fixed Effect Model***		***Random Effect Model***	
Variables	ΔCAP_t	$\Delta RISK_t$	ΔCAP_t	$\Delta RISK_t$	ΔCAP_t	$\Delta RISK_t$
Constant	*0.782*	*0.794*	*0.691*	*0.131*	*-0.081*	*0.399*
	(1.041)	*(5.497)*	*(0.322)*	*(1.947)*	*(-0.442)*	*(2.201)*
Δ ***RISK***$_t$	*-0.149**		*-0.141**		*-0.203**	
	(-1.736)		*(-1.692)*		*(-3.283)*	
SIZE$_t$	*-0.259**	*-0.044***	*-0.089*	*-0.014**	*-0.076**	*-0.036*
	(-1.705)	*(4.012)*	*(-1.654)*	*(1.654)*	*(-1.733)*	*(1.326)*
CAP$_{t-1}$	*0.090***		*0.05**		*0.079**	
	(2.137)		*(1.624)*		*(1.619)*	
ROA$_t$	*0.087***	*0.701***	*0.121***	*0.918**	*0.179*	*0.699**
	(2.137)	*(2.098)*	*(1.548)*	*(1.688)*	*(1.611)*	*(1.688)*
GROWTH$_t$	*0.061*	*0.621****	*0.049*	*0.729****	*0.039*	*0.679***
	(0.79)	*(2.41)*	*(0.62)*	*(2.77)*	*(0.55)*	*(2.63)*
LLP$_t$		*-0.483**		*-0.617**		*-0.581*
		(-3.186)		*(-6.928)*		*(-0.552)*
RISK$_{t-1}$		*-0.170**		*-0.483***		*--0.282**
		(-7.872)		*(-1.998)*		*(-2.481)*
Δ ***CAP***$_t$		*-0.048***		*-0.042**		*-0.260**
		(-0.011)		*(-3.104)*		*(-2.318)*
Country dummies						
Saudi	*1.284**	*6.295**	*1.298**	*7.142***	*1.288*	*6.814**
	(1.627)	*(1.711)*	*(1.791)*	*(1.624)*	*(1.728)*	*(1.788)*
Jordan	*0.751**	*5.680***	*1.911*	*4.914**	*0.811*	*6.188**
	(0.531)	*(1.274)*	*(0.626)*	*(1.077)*	*(0.574)*	*(1.724)*
UAE	*1.553**	*7.988***	*1.412**	*8.819**	*1.389**	*7.486***
	(1.931)	*(2.082)*	*(1.842)*	*(2.384)*	*(0.811)*	*(1.989)*
Kuwait	*1.764**	*8.688**	*1.79***	*9.142***	*1.62**	*8.917**
	(1.34)	*(1.416)*	*(1.41)*	*(2.113)*	*(1.27)*	*(1.945)*
Regulatory pressure						
Saudi	*0.641***	*1.044**	*0.205***	*0.029***	*0.173**	*0.056***
	(2.241)	*(3.013)*	*(0.61)*	*(2.321)*	*(0.43)*	*(2.133)*
Jordan	*0.013**	*0.339***	*0.021*	*0.297**	*0.072*	*0.821**
	(0.313)	*(2.867)*	*(0.68)*	*(2.0183)*	*(0.48)*	*(2.928)*
UAE	*0.342**	*2.381**	*0.078**	*1.187***	*0.049***	*1.091*
	(1.21)	*(2.31)*	*(0.45)*	*(1.012)*	*(0.28)*	*(1.001)*
Kuwait	*0.489**	*1.421**	*0.412***	*1.228*	*0.392**	*0.985**
	(2.018)	*(0.458)*	*(0.371)*	*(0.392)*	*(0.317)*	*(2.782)*
R square	*0.312*	*0.137*	*0.349*	*0.413*	*0.248*	*0.087*
Adjusted R-square	*0.189*	*0.089*	*0.236*	*0.316*	*0.188*	*0.519*

Note: Absolute t statistics in parentheses; * significant at 1%; ** significant at 5%; *** significant at 10%