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FINANCIAL INTEGRATION IN THE GCC REGION: MARKET SIZE VERSUS NATIONAL EFFECTS

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Abstract

This paper examines financial spillovers between the four largest equity markets, by market capitalization, in the GCC region using a VAR-GARCH (1,1) framework that sheds light on interdependence as well as contagion following the 2014 oil crisis. The UAE being a federation including two stock exchanges (Abu Dhabi and Dubai), it is possible to test whether being part of a federal union matters more than market size in terms of financial integrations. Soil a federal union matters and in the volatility, from

terms of financial integration to the spiral and participated by the spiral and in the volatility, from the larger markets of Saudi Ara a and Qatar to the two smaller ones of the UAE, which confirms that market capitalization is a more important determinant of financial integration than belonging to a feeter participation there, contagion appears to have occurred, i.e. spillovers from the larger may ets have accome stronger as a result of the 2014 oil crisis. Finally, there is also evidents of spillovers from the smaller to the larger markets.

Keywords: Stock Parkets, (C.C., Volatility transmission.

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1 Introduction

In recent decades the October 1987 stock market crash in the US, the 1992 European Exchange Rate mechanism (ERM) crisis, the 1997 East Asia crisis and the 2008 global financial crisis have generated renewed interest among academics, policy makers and practitioners in understanding the transmission of shocks across financial markets, both developed and emerging. Following the seminal paper by King and Wadhwani (1990), one strand of the literature has used conditional correlation anal

single stock exchange is likely to affect the liquidity and trading volumes of those markets; the presence of separate regulatory authorities (the Securities and Commodities Authority for Abu Dhabi and the Financial Services Authority for Dubai) is another important factor to take into account. The two markets have in fact pursued different strategies, with Abu Dhabi focusing on internal growth and Dubai aiming to mirror developments in the main international financial markets. The possibly negative consequences of market fragmentation in the UAE and the potentially beneficial network effects of consolidation have been recently debated. Differences in their governance and business models, as well as the possibility of hierarchies resulting from consolidation, are the main arguments that have been used against a merger (for further details, see Paltrinieri, 2015).

The current set-up offers an interesting opportunity to test whether the "large country effect" or being part of a federal state is a more important factor for financial integration, in this case whether or not the linkages between the stock markets of Abu Dhabi and Dubai, that belong to the same country, are stronger than those with the largest markets in the region, namely Qatar, and Saudi Arabia; our modelling approach is particularly suitable for addressing such issues.

The layout of the paper is as follows. Section 2 outlines the econometric modelling approach. Section 3 describes the data and presents the empirical findings. Section 4 summarises the main findings and offers some concluding remarks.

2 The model

We represent the first and second moments of the GCC stock market returns using a VAR-GARCH(1,1) process. In its most general specification the model takes the following form:

$$\mathbf{x}_t = + \mathbf{x}_{t-1} + (\mathbf{t}_{t-1}) + \mathbf{u}_t$$
 (1)

where $\mathbf{x}_t = ($ t t t t - t) and \mathbf{x}_{t-1} is the corresponding vector of lagged variables. The residual vector $\mathbf{u}_t = ($ $_{1,t}$ $_{2,t}$ $_{3,t}$ $_{4,t})$ is four-variate and normally distributed $\mathbf{u}_t \mid _{t-1}$ $(\mathbf{0} \quad _t)$, its conditional variance covariance matrix being given by:

The parameter vector of the mean return equation (1) includes the constant $= \begin{pmatrix} 1 & 2 & 3 & 4 \end{pmatrix}$,

$$t = \begin{pmatrix} 2 \\ 1,t-1 \\ 1,t-1 \\ 2,t-1 \\ 1,t-1 \\ 2,t-1 \\ 2,t-1 \\ 3,t-1 \\ 4,t-1 \\ 3,t-1 \\ 4,t-1 \end{pmatrix} + \begin{pmatrix} 2 \\ t-1 \\ t-1 \\ 4,t-1 \\ 4,t-1 \\ 4,t-1 \end{pmatrix}$$

where

=

defined as the logarithmic differences of the four stock market indices which are shown in Figure 1.

In order to test the adequacy of the estimated models, Ljung - Box portmanteau tests

and the volatility, from the larger markets of Saudi Arabia and Qatar to the two smaller ones in the UAE, which confi	>

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TABLE 1: Estimated VAR-GARCH(1,1) model

Saudi Arabia		a Dubai		Qatar		Abı	u-Dhabi			
Conditional Mean Equation										
1	0 061 (0.002)	2	0 103 (0.000)	3	0 069 (0.006)	4	0 062 (0.000)			
11	0.000)	22	0 084 (0.005)	33	0 124 (0.000)	44	- 0 002 (0.942)			
12	0 049 (0.033)	21	0 157 (0.000)	31	0 027 (0.044)	41	0 088 (0.000)			
13	0 085 (0.000)	23	0 105 (0.031)	32	0.000)	42	0 017 (0 ⊊225)€©	125) dBbcp@\$ ~ ~ 1õCdl‰ 0 67		
14	- 0 027 (0.451)	24	- 0 009 (0.874)	34	- 0 031 (0.381)	43	0 061 (0.015)			
	- 0 009 (0.637)		0 015 (0.563)		0 025 (0 .271)		- 0 007 (0.609)			
	0 057 (0.000)		0.000)		0 288 (0.000)		0 063 (0.000)			
	0.000)		0 216 (0.000)		0 295 (0.000)		0 075 (0.000)			
Conditional Variance Equation										
11	- 0 001 (0.000)	22	0 364 (0.000)	•	(0.000)	44	0 401 (0.000)			
11	- (10. 100)	22	0 801 (0.555)	33 \$€	(0.000)	44	(0.000)	9		
12	0 149 (0.317)	21	218	31	-0666 (0.pad)	41	- 0 514 (0.000)			
12	0 496 (0.008)	2	215 .089)	31	0 193 (0.155)	41 4(447	0 239 (0.304)			
13	0 447 (200 2) 447	2325	. (4470 1.4 4 470	12 ji 24	N 4(4470	7				

and LB² are the Ljung-Box test (1978) of signifi

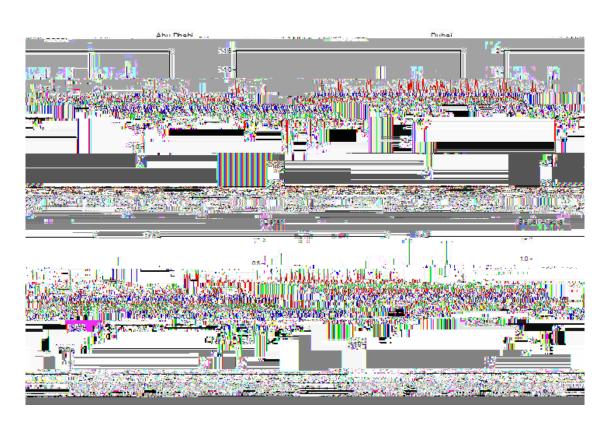


Figure 1: Stock Market Returns