Economics and Finance Working Paper Series

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October 2018

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October 30, 2018

Abstract

This paper investigates the impact of business and political news on stock market returns in the Gulf Cooperation Council (GCC) countries. For this purpose, it employs a Markov switching model including a separate index for each of the two categories of news considered. The results indicate the importance of news as drivers of GCC stock returns, with business news playing a more substantial role; further, news released in the largest financial markets in the regions are found to have significant cross-border effects.

Keywords: Business News, GCC countries, Markov switching Model, Political News.

JEL Classification: C32, F36, G15.

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1 Introduction

The effects of macroeconomic news on stock prices have been analysed extensively in the more recent financial literature. The theoretical motivation comes from asset pricing models according to which factors driving macro series such as consumption and investment should also affect asset prices (e.g., Merton, 1973). Information clearly plays a crucial role in financial markets (Strycharz et. al, 2018; Tetlock, 2007 and 2008). Financial news, market announcements, corporate news, and analyst forecasts affect the expectations of investors and might generate high volatility in stock markets (e.g., Tetlock, 2008). Numerous studies have analysed their impact on stock returns (Lavrenko et al., 2000; Chan, 2003; Andersen et al., 2007; Tetlock et al., 2008; Nartea et al., 2009; Alfarano et al., 2011.). McQueen and Roley (1993) found that real news have asymmetric effects on financial markets depending on the state of the economy; Cutler et al. (1989) estimated that macroeconomic news explain approximately one-third of the variance of stock returns whilst financial news have limited predictive power for returns. Birz and Lott (2011) focused on the impact of newspaper headlines on the US stock market, whilst Caporale et al. (2016, 2018a, 2018b) assessed their impact on European stock and bond markets and the FOREX in emerging markets respectively. Studies in behavioural finance have addressed the possibility of human emotions influencing investment decisions (De Long, 1990; Shleifer and Vishny, 1997) and found that the prevailing sentiment in financial reports or news articles affects stock returns (Li, 2006 and Schumaker et al., 2012).

Most of the above papers focus on the developed countries or on a small subset of the emerging economies. There is instead hardly any evidence concerning the members of the Gulf Cooperation Council (GCC) that was established in 1981 (namely, Bahrain, Qatar, Kuwait, Oman, UAE and Saudi Arabia). These are currently classified as emerging countries engaged in the transformation of their economies through the creation of new industry segments and diversification (Shkvarya et al., 2017). The GCC average annual GDP per capita ($69,166) is substantially higher than the world average ($16,961) as reported by the World Bank (2017). Its members have benefited from being oil and gas producers, although they have still been affected by the worldwide slowdown caused by the 2007-8 global financial crisis. Market capitalisation in 2017 was USD451bn in Saudi Arabia, USD132bn in Abu Dhabi, USD130bn in Qatar, USD104bn in Dubai, USD90bn in Kuwait (and slightly lower in Bahrain and Oman). The GCC has recently launched a series of common economic projects to promote integration. However, diplomatic tensions between its member states persist. The latest episode occurred in June 2017, when the main index for the Qatar Stock Exchange dropped by 6.38 per cent amid growing tensions with some neighbouring Gulf states; in particular, Bahrain, Saudi Arabia and the UAE cut their diplomatic relations with Qatar, whilst Kuwait and Oman remained neutral.

An important study by Al-Kindi (2016) applies Media Authoritarian Theory to analyse the media - government relationship in the GCC group. He argues that mass media in these countries were targeted to reform the Arab World in general, and the GCC group in particular. The measures taken included media leadership change, media policies and rules change, and granting greater freedom of

expression, with the aim of replacing "government" media with "state" media. Aday et al. (2012) had previously found that the new media outlets had played an important role in the Arab Spring by spreading information widely across the region.

Ahmed (2011) documented a high degree of market integration within the GCC. Alodayni (2016) estimated a panel VAR to investigate the linkages between the GCC banking system and the real economy. The results show that macro-economic variables, such as the oil price, non-oil GDP, interest rates, stock prices, and housing prices are major determinants of profit and loss for GCC banks. The high degree of dependence of the GCC countries on oil revenues makes them particularly vulnerable to external shocks that could threaten their financial stability; they have therefore built up financial buffers in order to attenuate the impact of fluctuations in international oil prices; moreover, their low debt to GDP ratio also gives them room for fiscal manoeuvring consistent with long-run sustainability.

This paper aims to shed new light on the impact of (negative) business and political news obtained from Bloomberg on GCC stock returns. Similarly to Caporale et. al (2016, 2018a and 2018b) it focuses on the effects of newspaper coverage of such news. However, unlike those studies, the current one adopts a non-linear, Markov-switching econometric framework. Its advantage is that it can distinguish between periods of low and high returns (volatility) respectively; in other words, causality linkages are not constrained to be constant across phases of the economic cycle (i.e., news are allowed to affect stock returns differently in periods of boom and bust) and in different regimes (i.e., news can have a different impact in periods of low and high returns). The adopted specification also controls for news surprises, monetary policy and financial globalisation. In brief, the analysis reveals some interesting differences between the financial markets of the core and peripheral (GCC) countries in the way they respond to news.

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

2   The Model

As already mentioned, in order to analyse the dynamic linkages between (political and business) newspaper news and stock market returns we estimate a regime-switching model [1] allowing for shifts in both the mean and the variance parameters measuring the impact of news in periods of low/high stock market returns and volatilities; the specification is the following:

$$r_{i,t} = \mu(s_t) + \sum_{m=1}^{2} \phi_m r_{i,t-m} + \alpha(s_t) NPN_{j,t-1} + \beta(s_t) NBN_{j,t-1} + Control_{i,t-1} + \sigma(s_t)\varepsilon_t, \ \varepsilon_t \sim N(0,1)$$

(1)

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[1] The model is based on the Markov switching representation proposed by Hamilton (1989, 1990).

$$\mu(s_t) = \sum_{k=low}^{high} \mu^{(k)} \mathbf{1}\{s_t = k\}, \ \alpha(s_t) = \sum_{k=low}^{high} \alpha^{(k)} \mathbf{1}\{s_t = k\},$$

$$\beta(s_t) = \sum_{k=low}^{high} \beta^{(k)} \mathbf{1}\{s_t = k\}, \ \sigma(s_t) = \sum_{k=low}^{high} \sigma^{(k)} \mathbf{1}\{s_t = k\}, \ (t \in \mathbb{T})$$

where $r_{i,t}$ = logarithmic change of stock market indexes i, $NPN_{j,t-1}$ = negative political news in country j, $NBN_{j,t-1}$ = negative business news in country j. A set of control variables is also included, namely domestic macro news surprises, oil prices, domestic interest rates and the VIX as a proxy for global stock market volatility. Given the fact that s_t is unobserved, the estimation of (1) requires restrictions on the probability process governing it; specifically, it is assumed that s_t follows a first-order, homogeneous, two-state Markov chain. Therefore, the regime indicators $\{s_t\}$ are assumed to form a Markov chain on $\mathbb{S}$ with a transition probability matrix $\mathbf{P}' = [p_{low,high}]_{2\times2}$, where:

$$p_{low,high} = \Pr(s_t = high|s_{t-1} = low), \qquad low, high \in \mathbb{S}, \tag{2}$$

and $p_{low,low} = 1 - p_{low,high}$ $(i \in \mathbb{S})$, where each column sums to unity and all elements are non-negative. The probability law that governs these regime changes is flexible enough to allow for a wide variety of shifts, depending on the values of the transition probabilities. For example, values of $p_{low,low}$ $(low \in \mathbb{S})$ that are not very close to unity imply that the structural parameters are subject to frequent changes, whereas values near unity suggest that only a few regime transitions are likely to occur in a relatively short realization of the process (i.e. regime persistence). $\{\varepsilon_t\}$ are i.i.d. errors with $\mathsf{E}(\varepsilon_t) = 0$ and $\mathsf{E}(\varepsilon_t^2) = 1$. $\{s_t\}$ are random variables in $\mathbb{S} = \{1, 2\}$ that indicate the unobserved state[2] of the system at time t. It is assumed that $\{\varepsilon_t\}$ and $\{s_t\}$ are independent. Also, note that the independence between the sequences $\{\varepsilon_t\}$ and $\{s_t\}$ implies that regime changes take place independently of the past history of $\{r_{i,t}\}$.

The autoregressive lag length is selected according to the Schwarz Bayesian Criterion (SBC), allowing for up to two lags. Therefore, the parameter vector of the mean equation (1) is defined by $\mu^{(s)}$, $(s = low, high)$, and $\sigma^{(s)}$, $(s = low, high)$, which are real constants, and the autoregressive terms $\sum_{m=1}^{2} \phi_i$, up to two lags. $\alpha = (\alpha^l, \alpha^h)$ and $\beta = (\beta^l, \beta^h)$ measure the impact of negative political news in country j and negative business news in country j respectively on stock market returns in country i. This vector is estimated by means of maximum likelihood. The density of the data has two components, one for each regime, and the log-likelihood function is constructed as a probability-weighted sum of these two components. The maximum likelihood estimation is performed using the EM algorithm described by Hamilton (1989, 1990).

For comparison purposes, we also estimate the standard linear model normally used in the literature, which we treat as a benchmark. This is given by:

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[2] Regime 1 and 2 are labelled as the low and high regime respectively.

$$r_{i,t} = \mu + \sum_{m=1}^{2} \phi_m r_{i,t-m} + \alpha NPN_{j,t-1} + \beta NBN_{j,t-1} + Control_{i,t-1} + \sigma\varepsilon_t, \ \varepsilon_t \sim N(0,1) \qquad (3)$$

where the parameter vector of the mean equation (2) is defined by the constant parameters $(\mu, \phi_m, \alpha, \beta, \sigma)$.

3   Empirical Analysis

3.1   Data

The series used for the estimation are negative political news (NPN_t), negative business news (NBN_t) and stock market returns (r_t) constructed from the stock market indices of seven GCC countries (Dubai, Abu Dhabi, Bahrein, Saudi Arabia, Kuwait, Oman and Qatar). The data are weekly and run from October 2010 to May 2018 for a total of 399 observations (the sample size reflects data availability for business and political news). The data source for stock market indices and the control variables is the IMF's *International Financial Statistics (IFS),* whereas data on political and business news are taken from Bloomberg. Weekly stock market returns are calculated as the percentage change in stock prices.

Concerning the negative business (political) index, we first counted the number of all business (political) news stories, then the number of stories with a negative connotation only. [3] The news variable in each case is an index defined as the ratio of the number of negative news headlines to the total number of headlines (see the blue line in Figures 2 and 3 for business and political news respectively). Previous research has found that stock returns are sensitive to both negative and positive newspaper news; however negative news have more pronounced effects on returns (Veronesi, 1999; Tetlock, 2007; Wang et al., 2009; Caporale et. al, 2018a). Therefore, in this paper, we focus on negative (political and business) news headlines as a percentage of the total. A week is defined as going from Wednesday to Wednesday in order to control for different weekends in the GCC and the US (for the VIX index). Oil prices are also included in first differences.

Furthermore, in line with the previous literature (Kim et al., 1999; and Simpson et al., 2005) we add macro news surprises to the set of variables. These are calculated as the difference between market expectations, obtained from Bloomberg's contributor composite, and the actual figures released, and are then standardised using the standard deviation of the macroeconomic surprise.

To summarise, the set of variables included in the model is the following:

$r_{i,t}$: Weekly returns of the stock market index for country i at time t calculated as $100*((Stock_{i,t}-Stock_{i,t-1})/(Stock_{i,t-1}))$;

$NPN_{i,t}$: Negative political news as a percentage of total political news (i.e. positive, negative, mixed and neutral) in country i at time t;

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[3] These are classified by Bloomberg as "potentially negative news". Examples of negative business news and negative political news are available from the authors upon request.

$NBN_{i,t}$: Negative business news as a percentage of total business news (i.e. positive, negative, mixed and neutral) in country i at time t;

Oil_t: Oil price returns calculated as $100 * ((Brent_t - Brent_{t-1}) / (Brent_{t-1}))$, where Brent is the US Brent oil price;

$Macro\ Surprises_{i,t}$: Macro surprises calculated as $(Actual_{i,t} - Forecast_{i,t})/\sigma_i$ for country i at time t, where σ_i is the standard deviation of the macroeconomic surprise;

$IntRate_{i,t}$: the 3-month deposit rate in country i at time t;

VIX_t: a measure of the USA option-implied volatility at time t.

Please Insert Figures1-3

Summary statistics for these variables are displayed in Tables 1 and 2. The mean weekly change for stock returns is positive for all countries but Bahrain, Kuwait and Oman. The Abu Dhabi and Dubai stock markets, followed by the Qatar and Saudi Arabia ones, are those with the highest returns. The standard deviation indicates that the highest volatility occurs in the case of Dubai (0.433);Abu Dhabi, Oman, Qatar and Saudi Arabia exhibit similar values ranging from 0.236 to 0.304; Bahrain and Kuwait have the lowest volatilities. The Jarque-Bera (JB) test statistics provide evidence of non-normality for all series.

Interestingly, the percentage of (business and political) negative news rarely exceeds 20%. The highest mean values for negative business news are those for the Qatari, Saudi and UAE ones (0.056, 0.056 and 0.057 respectively; the corresponding standard deviations are 0.048, 0.058 and 0.031); by contrast, the highest mean values for negative political news are those for Bahrain (0.095) followed by Saudi (0.059) and UAE (0.053). It is noteworthy that the percentage of negative business news exceeds that of negative political news in the case of Oman, Qatar and UAE. However, negative political news appear to be more volatile than negative business news in all GCC countries, especially in the case of Bahrain and Oman, where they are at least three times as volatile.

As for the control variables, GDP news surprises seem to be negative for the region as a whole, with an overall index equal to -0.733. However, this disguises cross-country differences; specifically, this variable is positive in Bahrain, Kuwait and the UAE, whereas it is negative in Oman, Qatar and Saudi Arabia.

Please Insert Tables 1-3

Concerning the correlation coefficients (Table 3), it appears that stock market returns in the region are all positively correlated to one another. The highest degrees of correlations are those between the leading stock markets (Qatar, Saudi Arabia and the two UAE indexes) exceeding 0.50, whereas the Bahrain and Oman markets are less strongly correlated. A positive correlation is also found across the region for both business news and political news, especially for the former. Negative business news correlations between Qatar, Saudi Arabia and the UAE all exceed 0.355, with the highest degree of correlation being that between Qatar and UAE (0.477). On the other hand, the highest

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degree of correlation for negative political news occurs between Bahrain and Oman (0.436). All other correlations, albeit positive, suggest a low degree of integration with values in the range $0.029 - 0.349$.

3.2 Empirical Results

A summary of the estimation results for the linear and Markov-switching models, respectively, is presented in Tables 4 and 5.[4] Overall, the results indicate that the latter specification captures satisfactorily the shifts in mean/variance for all series considered. We select the optimal lag length of the mean equation using the Schwarz information criterion. In order to test the adequacy of the models, Ljung–Box portmanteau tests were performed on the standardised and standardised squared residuals. The results for the latter show the inability of the linear model to capture the time-varying nature of the second moment. The non-linear specification chosen aims to address this issue as well.

Please Insert Tables 4 and 5

The linear (benchmark) estimates suggest that negative business news about the largest markets in the region (Qatar, Saudi Arabia and UAE) have a significant and negative cross-border effect on all GCC countries. Domestic negative business news affect significantly the larger stock markets, but not the smaller ones (Bahrain, Kuwait and Oman). The latter seem to be more sensitive to negative news concerning the larger markets rather than to domestic ones. On the contrary, negative business news concerning the smaller markets seem to influence only the peripheral markets but not the leading ones. As for the impact of political news, the results provide very little evidence of any statistically significant effects. The only noticeable exception is given by Saudi Arabia, whose negative political news affect positively all markets except the Qatari one.

Next we discuss the Markov-switching estimation results. It is clear that the non-linear specification fits the data better. The smoothed probabilities (Figure 4) show that two regimes (low and high) can be clearly identified and the second moment governs the switching between the two in all stock markets, though to a less extent in the case of Oman. The transition probabilities indicate that the low volatilitiy regime is characterised by higher persistence compared to the high volatility one $(p_{high,high} < p_{low,low})$.

As for the casual linkages betwen the variables in the system, it appears that the Abu Dhabi stock market is affected by negative business news from Saudi Arabia, Qatar and UAE in the high volatility regime, whereas it is only affected by negative news from Saudi Arabia in the low volatility regime. Negative political news do not seem to affect this market except for those from Saudi Arabia. Bahrain stock returns are affected by business news in Qatar and UAE in the low regime, whereas they are strongly affected by Qatari and Saudi business news in the high regime with point estimates equal to -0.772 and -0.970 respectively. Domestic business news do not seem to have any effect on Bahrain stock returns. The same applies to political news.

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[4]The complete set of estimation results with the associated robust p-values and likelihood function values are reported in the Appendix, Tables A1 - A11.

Please Insert Figure 4

The Dubai stock market is affected by Qatari and domestic business news in both regimes, with point estimates in the high regime equal to -2.211 and -3.052 respectively, these being three times as big as the corresponding values in the low regime, -0.639 and -1.021 respectively. The Dubai stock market only seems to be affected by Saudi political news, although marginally. The Qatar stock market is affected by domestic, Saudi and UAE news in both regimes as well as by Kuwait news in the high regime. The size of the impact is not very different across regimes except for the UAE in the more volatile regime. News from Bahrain and Oman do not have any impact. Only Saudi political news seem to affect the Qatari stock markets in periods of low volatility.

The Kuwait stock market is affected by Saudi (-0.257) and UAE (-0.358) news in the low regime, whereas in the high regime it is affected by Bahrain (-0.241) news, and particularly strongly by Saudi, Qatari and UAE business news with large point estimates equal to -0.982, -0.985 and -0.476 respectively. The Kuwait market is affected by political news originating from Saudi Arabia and Qatar but only in the high regime. The Oman stock market is affected by negative business news from Bahrain (-0.230), Saudi Arabia (-0.972), Qatar (-0.451) and the UAE (-0.164) in the low regime. The same pattern is observed in the high regime. Oman seems to be affected only by Saudi negative political news in the low regime.

Saudi Arabia is greatly affected by domestic (-0.998) and Qatari (-0.397) business news in the low volatility regime; instead in the high regime it is strongly influenced by Qatari (-0.982) and UAE (-4.081) business news. Political news originating in UAE (0.196) affect Saudi Arabia in the low volatility regime, whilst Qatari political news have a negative effect (-0.952) in the high regime.

Please Insert Tables A1-A11

In brief, business news are clearly a more important driver of stock returns than political news. While domestic business news generally seem to play a significant role, this is not the case for political news. The three largest stock markets have a leading role also in terms of the importance given by investors to business news concerning these countries, which affect the smaller markets. The results for political news are instead mixed and no clear pattern emerges. Further, the control variables are statistically significant for all leading markets, the estimated coefficients indicating a negative VIX and interest rate effect, whereas domestic macro news surprises have a significant (often positive) effect only in a few cases. Oil prices do not seem to have a significant effect when the linear model is estimated; however, they are mostly positive and significant when the Markov-switching specification is adopted. [5]

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[5] Trade could be a significant factor driving the stock markets of GCC emerging markets. However, this hypothesis cannot be tested directly using our framework, given the low frequency of the data on trade.

4   Conclusions

This paper uses both linear and non-linear specifications to analyses spillovers between business and political news and stock returns for a group of emerging countries belonging to the Gulf Cooperation Council (GCC) over the period October 2010 - May 2018. It makes several contributions to the existing literature: (i) it considers news in the form of newspaper headlines, that provide an interpretation of business and political releases driving agents' investment decisions; (ii) it adopts an econometric framework shedding light on the potential non-linear dynamic linkages between stock returns and their possible determinants; (iii) it focuses on the GCC countries providing extensive new evidence; (iv) it controls for domestic monetary policy and other economic and financial shocks. The non-linear specification appears to be more data congruent than the benchmark linear model. On the whole, the results suggest the existence of significant linkages between negative business news and stock returns. Importantly, business news from the larger economies have not only domestic but also cross-border negative effects. By contrast, there is weak evidence of causality running from political news to stock returns. A possible explanation is that political news by their own nature are not as easy to classify as business news. Further research could apply more sophisticated criteria to categorise them on the basis of more extensive textual analysis.

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Table 1: Descriptive Statistics

	Stock Market Returns						
	Abu Dhabi	Bahrain	Dubai	KSA	Kuwait	Oman	Qatar
Mean	0.019	-0.003	0.026	0.005	-0.002	-0.021	0.001
Max.	1.089	0.477	1.902	1.049	0.655	1.151	0.978
Min.	-1.603	-0.466	-2.993	-1.431	-0.608	-1.435	-1.261
Std. Dev	0.261	0.119	0.433	0.304	0.144	0.236	0.268
Skew	-0.561	0.146	-0.701	-1.057	-0.115	-0.936	-0.462
Kurt.	7.778	4.991	9.891	7.601	6.665	10.077	5.887
Prb.J-B	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	Business News					
	Bahrain	KSA	Kuwait	Oman	Qatar	UAE
Mean	0.049	0.056	0.036	0.036	0.056	0.057
Max.	0.291	0.484	0.239	0.315	0.322	0.231
Min.	0.000	0.000	0.000	0.000	0.000	0.003
Std. Dev	0.051	0.058	0.038	0.052	0.048	0.031
Skew	1.754	3.318	2.074	2.205	2.125	1.561
Kurt.	6.835	19.148	8.321	8.709	9.791	6.873
Prb.J-B	0.000	0.000	0.000	0.000	0.000	0.000

	Political News					
	Barhain	KSA	Kuwait	Oman	Qatar	UAE
Mean	0.095	0.059	0.044	0.035	0.046	0.053
Max.	1.000	0.566	0.500	1.000	1.000	0.500
Min.	0.000	0.000	0.000	0.000	0.000	0.000
Std. Dev	0.175	0.073	0.083	0.128	0.129	0.077
Skew	2.305	2.335	2.423	5.782	4.874	2.015
Kurt.	8.701	12.913	9.191	40.913	31.621	9.041
Prb.J-B	0.000	0.000	0.000	0.000	0.000	0.000

Note: Stock market returns are the percentage changes in stock prices. News coverage is proxied by story headlines counts. News classified as potential negative were counted. Then All news (potentially negative and positive, mixed and neutral) were counted. The ratio of latter to former is the negative news index. Therefore, the weekly negative news percentage is defined as negative news/All. The sample size covers the period October 2010 to May 2018, for a total of 399 weekly observations.

Table 2: Descriptive Statistics - Control Variables

	Macroeconomic News Surprises						
	Bahrain	KSA	Kuwait	Oman	Qatar	UAE	GCC
Mean	0.426	-0.464	0.088	-0.194	-0.676	0.046	-0.773
Max.	2.407	1.689	2.479	2.610	0.208	2.026	5.466
Min.	-1.868	-2.399	-1.049	-2.586	-3.871	-1.624	-6.601
Std. Dev	0.927	0.875	0.808	0.818	0.947	0.806	2.280
Skew	0.245	0.160	1.632	0.979	-1.628	0.461	-0.270
Kurt.	0.166	-0.243	2.421	2.378	2.461	-0.506	0.109
Prb.J-B.	0.000	0.000	0.000	0.000	0.000	0.000	0.000

	Interest Rates						Others	
	Bahrain	KSA	Kuwait	Oman	Qatar	UAE	VIX	Oil
Mean	1.517	2.010	1.126	1.415	4.753	1.381	2.753	2.820
Max.	3.175	2.250	1.563	2.400	5.500	2.539	3.871	4.736
Min.	1.000	2.000	0.625	1.000	4.500	0.677	2.213	0.000
Std. Dev	0.564	0.049	0.324	0.493	0.366	0.537	0.288	2.033
Skew	1.484	4.644	0.208	0.498	1.100	0.478	0.891	-0.629
Kurt.	1.145	19.584	-1.278	-1.519	-0.273	-0.855	1.036	-1.530
Prb.J-B	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: The sample size covers the period October 2010 to May 2018, for a total of 399 weekly observations.

Table 3: Correlations

	Stock Market Returns						
	Abu Dhabi	Bahrain	Dubai	KSA	Kuwait	Oman	Qatar
Abu Dhabi	1	0.264	0.841	0.505	0.481	0.543	0.636
Bahrain	0.265	1	0.319	0.191	0.414	0.278	0.281
Dubai	0.841	0.319	1	0.561	0.531	0.578	0.649
KSA	0.505	0.191	0.561	1	0.414	0.448	0.514
Kuwait	0.481	0.414	0.531	0.414	1	0.416	0.448
Oman	0.543	0.278	0.578	0.448	0.416	1	0.495
Qatar	0.636	0.281	0.649	0.514	0.448	0.495	1

	Business News					
	Bahrain	KSA	Kuwait	Oman	Qatar	UAE
Bahrain	1	0.109	0.247	0.242	0.105	0.144
KSA	0.109	1	0.127	0.093	0.374	0.358
Kuwait	0.247	0.127	1	0.261	0.308	0.274
Oman	0.242	0.093	0.261	1	0.185	0.194
Qatar	0.105	0.374	0.308	0.185	1	0.477
UAE	0.144	0.358	0.274	0.194	0.477	1

	Political News					
	Barhain	KSA	Kuwait	Oman	Qatar	UAE
Bahrain	1	0.182	0.264	0.436	0.193	0.124
KSA	0.182	1	0.349	0.158	0.029	0.179
Kuwait	0.264	0.349	1	0.276	0.294	0.121
Oman	0.436	0.158	0.276	1	0.112	0.201
Qatar	0.193	0.029	0.294	0.112	1	0.033
UAE	0.124	0.179	0.121	0.201	0.033	1

Note: Correlations statistics are reported. The sample size covers the period October 2010 to May 2018, for a total of 399 weekly observations.

Table 4: Linear OLS - Summary Results

Effects from	Bahrain News		KSA News		Kuwait News		Oman News		Qatar News		UAE News	
Effects to	Bus.	Pol.	Bus.	Pol.	Bus.	Pol.	Bus.	Pol.	Bus.	Pol.	Bus.	Pol.
Bahrain	(+)	(+)	(-)*	(+)*	(-)*	(+)	(-)*	(+)	(+)	(+)	(-)*	(-)*
KSA	(+)	(-)	(-)***	(+)*	(-)	(+)	(+)	(-)	(-)***	(-)	(-)***	(+)
Kuwait	(-)	(-)	(-)***	(+)*	(-)***	(+)	(-)*	(+)	(-)***	(-)***	(-)***	(+)***
Oman	(-)	(-)	(-)***	(+)***	(-)	(+)	(-)	(+)	(-)*	(-)**	(-)	(+)
Qatar	(-)	(+)	(-)***	(+)	(-)*	(+)	(-)	(-)	(-)***	(+)***	(-)***	(+)
UAE (Abu Dhabi)	(-)	(-)	(-)**	(+)*	(+)	(+)	(-)	**(+)**	(-)***	(+)	(-)***	(+)
UAE (Dubai)	(-)	(+)	(-)***	(+)*	(-)	(-)	(+)	(-)	(-)***	(+)	(-)***	(+)

Note: Parameters signs are reported in brackets. *, ** and *** refer to 10%, 5% and 1% statistical significance.

Bus. and Pol. refer to Business and Political News, respectively.

Table 5: Markov switching Model - Summary Results

Effects from	Bahrain News		KSA News		Kuwait News		Oman News		Qatar News		UAE News	
	Bus.	Pol.	Bus.	Pol.	Bus.	Pol.	Bus.	Pol.	Bus.	Pol.	Bus.	Pol.
Effects to							Low Regime					
Bahrain	(+)	(-)	(-)	(+)	(+)	(+)	(+)	(+)	(-)**	(+)	(-)**	(-)
KSA	(+)	(+)	(-)**	(+)	(+)	(+)	(+)	(+)	(-)***	(+)	(-)	(-)*
Kuwait	(-)	(+)	(-)**	(+)	(-)	(+)	(-)	(+)	(-)	(-)	(-)*	(+)
Oman	(-)**	(+)	(-)**	(+)***	(+)	(-)	(+)	(+)	(-)**	(-)	(-)***	(+)
Qatar	(-)	(+)	(-)*	(+)**	(+)	(+)	(-)	(+)	(-)***	(+)	(-)***	(+)
UAE (Abu Dhabi)	(-)	(-)	(-)*	(+)***	(-)	(+)	(+)	**(+)**	(-)	(+)	(-)	(-)
UAE (Dubai)	(-)	(-)	(-)	(+)*	(+)	(+)	(+)	(+)	(-)*	(-)	(-)**	(-)
Effects to							High Regime					
Bahrain	(-)	(+)	(-)***	(-)	(-)	(-)	(-)**	(+)	(-)***	(+)	(+)	(+)
KSA	(+)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)*	(-)***	(+)
Kuwait	(-)**	(+)	(-)**	(+)**	(-)	(+)	(-)	(-)	(-)*	(-)*	(-)**	(+)*
Oman	(-)***	(-)	(-)**	(-)	(+)	(-)	(-)	(-)	(-)**	(-)	(-)	(+)
Qatar	(-)	(+)	(-)**	(+)	(-)**	(+)	(-)	(+)	(-)***	(+)	(-)**	(+)
UAE (Abu Dhabi)	(-)	(+)	(-)*	(+)*	(-)	(+)	(-)	**(-)***	(-)***	(+)	(-)**	(+)
UAE (Dubai)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(+)	(-)*	(+)	(-)*	(+)

Note: Parameters signs are reported in brackets. *, ** and *** refers to 10%, 5% and 1% statistical significance.

Bus. and Pol. refer to Business and Political News, respectively.

Figure 1: GCC Stock Market Returns
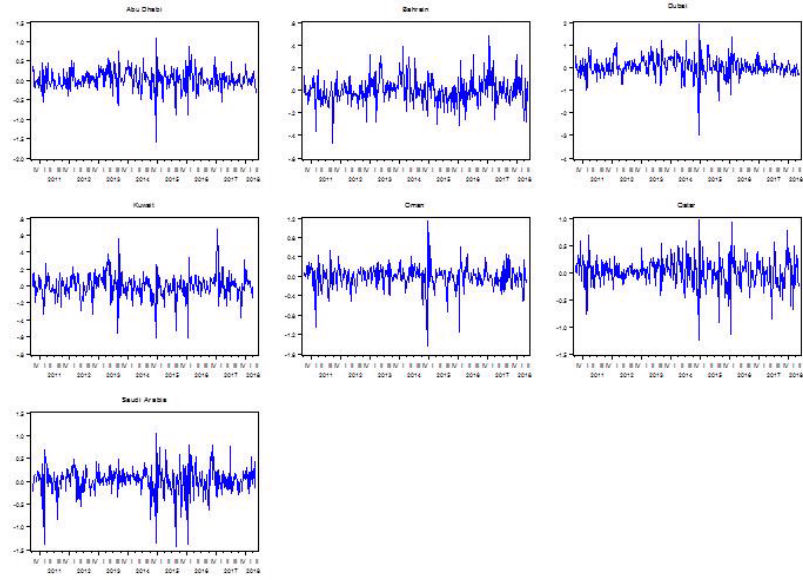
Note: Stock returns in country i are the weekly returns of the stock market index for country i at time t. It is calculated as $100 * ((Stock_{i,t} - Stock_{i,t-1})/Stock_{i,t-1})$.

Figure 2: Business News
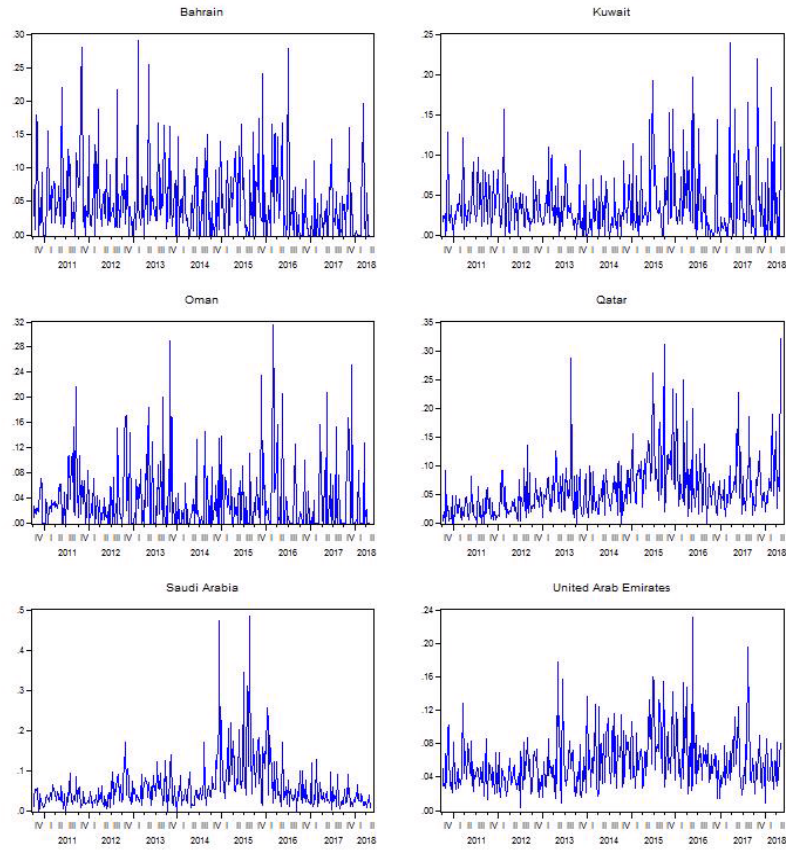
Note: Business news coverage is proxied by story headlines counts. All business news (negative, positive, mixed and neutral) were first counted, then only negative business news were selected. The ratio of latter to former is the business negative news index. Therefore, the weekly negative business news percentage ($NBN_{i,t}$) is defined as (negative news)/All.

Figure 3: Political News
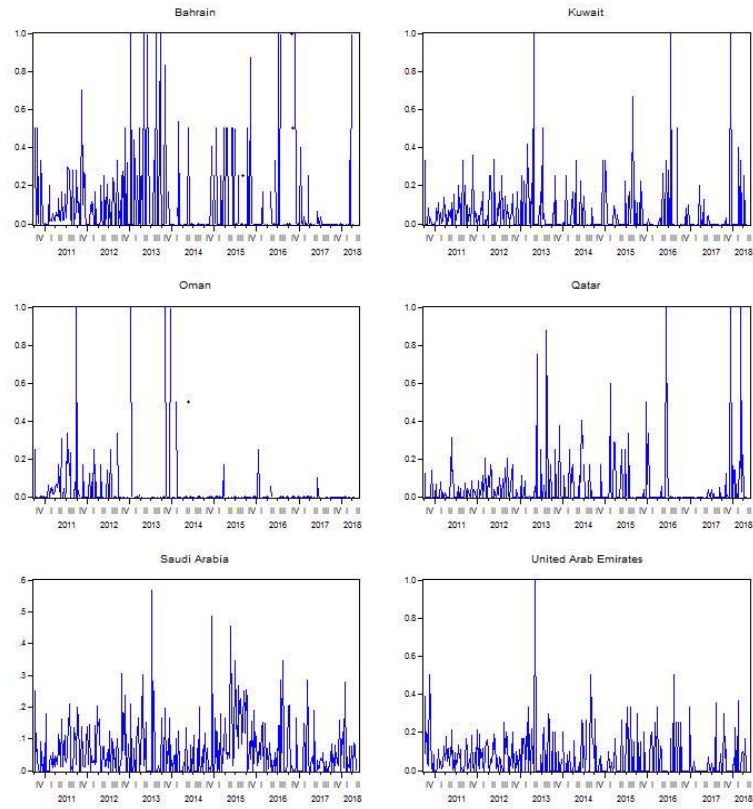
Note: Political news coverage is proxied by story headlines counts. All political news (negative, positive, mixed and neutral) were first counted, then only negative political news were selected. The ratio of latter to former is the negative political news index. Therefore, the weekly negative political news percentage ($NPN_{i,t}$) is defined as (negative news)/All.

Figure 4: Stock Market Returns and Smoothed Probabilities
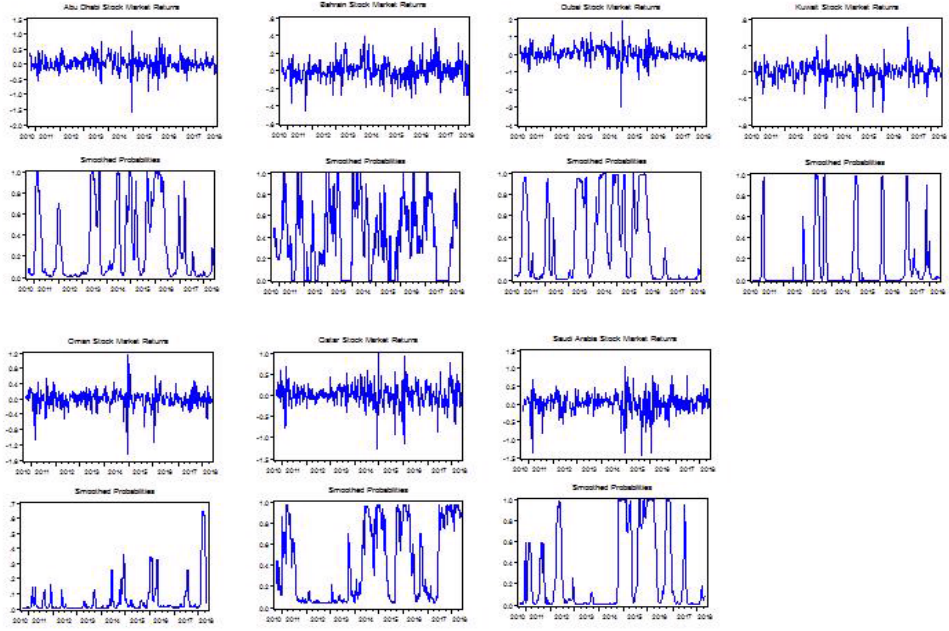
Note: Stock returns in country i are the weekly returns of the stock market index for country i at time t. Smoothed probabilities refer to the probability to be in the high regime for country i at time t.

5 Appendix

Table A1: Linear Results for the Bahrain & Kingdom of Saudi Arabia Stock Markets

Bahrain Stock Market

News from ->	Bahrain		KSA		Kuwait		Oman		Qatar		UAE	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
μ	0.099	0.064	0.100	0.001	0.102	0.007	0.094	0.166	0.126	0.001	0.102	0.003
Business News	0.002	0.448	-0.008	0.024	-0.013	0.049	-0.007	0.528	0.004	0.407	-0.012	0.055
Political News	0.000	0.931	0.003	0.038	0.002	0.308	0.003	0.314	0.001	0.552	-0.001	0.671
r_{t-1}	-0.078	0.512	-0.039	0.572	-0.025	0.748	-0.134	0.400	-0.072	0.361	-0.080	0.275
r_{t-2}	-0.015	0.935	-0.095	0.331	-0.155	0.182	-0.054	0.819	-0.109	0.360	-0.009	0.937
Oil	-0.002	0.333	-0.001	0.467	-0.002	0.223	-0.001	0.735	0.000	0.805	0.000	0.778
VIX	-0.007	0.000	-0.003	0.011	-0.003	0.007	-0.005	0.022	-0.004	0.004	-0.004	0.002
Bah. Surprises	0.002	0.014	0.000	0.718	0.001	0.177	0.001	0.273	0.000	0.859	0.000	0.722
Bah. Interest	-0.003	0.106	0.001	0.493	-0.001	0.261	-0.001	0.446	-0.001	0.247	0.001	0.576
σ	0.098	0.000	0.095	0.000	0.101	0.000	0.094	0.000	0.096	0.000	0.095	0.000
$Q_{(4)}$	1.565		3.443		4.098		2.112		3.086		3.331	
$Q^2_{(4)}$	13.567		14.543		13.976		14.012		14.784		13.998	
Log-lik	400.67		412.65		442.02		315.12		426.07		371.12	

KSA Stock Market

News from ->	Bahrain		KSA		Kuwait		Oman		Qatar		UAE	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
μ	0.129	0.127	0.043	0.325	0.010	0.890	-0.125	0.277	-0.043	0.488	0.005	0.913
Business News	0.013	0.161	-0.064	0.023	0.019	0.340	0.024	0.177	-0.008	0.451	-0.036	0.004
Political News	-0.006	0.273	0.027	0.076	-0.009	0.259	-0.001	0.939	-0.006	0.201	0.000	0.993
r_{t-1}	0.120	0.338	0.007	0.925	0.282	0.014	-0.007	0.976	0.135	0.192	0.066	0.367
r_{t-2}	-0.285	0.070	-0.092	0.368	-0.102	0.479	0.043	0.849	0.054	0.699	-0.180	0.069
Oil	0.002	0.683	0.003	0.240	0.006	0.145	0.009	0.113	0.006	0.101	0.003	0.358
VIX	-0.007	0.226	-0.001	0.657	0.000	0.987	0.006	0.448	0.010	0.030	0.001	0.854
KSA Surprises	-0.001	0.626	0.001	0.355	0.000	0.829	0.008	0.023	0.003	0.081	0.002	0.108
KSA Interest	0.002	0.321	-0.004	0.549	-0.021.	0.112	-0.007	0.107	-0.012	0.099	-0.009	0.108
σ	0.151	0.000	0.152	0.000	0.153	0.000	0.155	0.000	0.154	0.000	0.151	0.000
$Q_{(4)}$	2.065		3.009		4.221		3.003		2.995		2.885	
$Q^2_{(4)}$	12.012		14.231		13.065		13.943		14.067		13.223	
Log-lik	426.25		500.47		386.36		340.19		426.71		440.21	

Note: Autocorrelation and heteroscedasticity-consistent p-values (Prob.) are reported. $Q_{(4)}$ and $Q^2_{(4)}$ are the Ljung-Box test (1978) of significance of autocorrelations of four lags in the standardized and standardized squared residuals, respectively.

Table A2: Linear Results for the Kuwait & Oman Stock Markets

Kuwait Stock Market

News from ->	Bahrain		KSA		Kuwait		Oman		Qatar		UAE	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
μ	0.087	0.261	0.088	0.021	0.001	0.984	0.094	0.265	0.087	0.064	0.093	0.020
Business News	-0.002	0.734	-0.022	0.000	0.004	0.305	-0.039	0.002	-0.006	0.353	-0.021	0.001
Political News	-0.002	0.380	0.004	0.041	0.000	0.946	0.002	0.505	-0.002	0.452	0.000	0.840
r_{t-1}	-0.043	0.695	-0.036	0.527	-0.018	0.815	-0.028	0.808	-0.023	0.713	0.002	0.969
r_{t-2}	0.039	0.796	-0.006	0.947	-0.297	0.008	-0.117	0.512	0.019	0.832	-0.052	0.532
Oil	0.003	0.329	0.000	0.894	0.004	0.066	0.007	0.072	0.002	0.279	0.004	0.053
VIX	-0.002	0.376	-0.002	0.115	0.002	0.345	-0.002	0.517	-0.003	0.118	-0.004	0.010
Kuw. Surprises	0.000	0.544	0.000	0.381	-0.001	0.249	0.001	0.269	0.000	0.501	0.000	0.452
Kuw. Interest	0.001	0.841	-0.001	0.728	0.005	0.038	0.003	0.418	0.001	0.923	0.001	0.586
σ	0.132	0.000	0.131	0.000	0.137	0.000	0.135	0.000	0.141	0.000	0.036	0.000
$Q_{(4)}$	2.996		2.553		3.006		3.109		2.786		3.001	
$Q^2_{(4)}$	11.098		12.987		12.453		13.112		11.012		12.187	
Log-lik	467.95		416.32		496.78		405.52		502.01		478.55	

Oman Stock Market

News from ->	Bahrain		KSA		Kuwait		Oman		Qatar		UAE	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
μ	0.006	0.764	0.001	0.905	0.009	0.541	-0.045	0.123	0.011	0.407	-0.007	0.567
Business News	-0.004	0.053	-0.011	0.000	-0.004	0.225	0.002	0.770	-0.006	0.045	-0.014	0.000
Political News	0.000	0.743	0.002	0.050	0.001	0.390	-0.002	0.394	0.002	0.265	0.000	0.993
r_{t-1}	0.010	0.760	0.006	0.809	0.031	0.293	0.118	0.039	0.016	0.564	0.027	0.345
r_{t-2}	-0.014	0.746	-0.011	0.746	0.027	0.528	-0.111	0.036	0.002	0.963	-0.051	0.210
Oil	-0.152	0.014	-0.109	0.007	-0.250	0.000	-0.353	0.001	-0.138	0.003	-0.138	0.003
VIX	1.154	0.000	1.114	0.000	1.191	0.000	1.351	0.000	1.118	0.000	1.163	0.000
Oman Surprises	0.001	0.368	0.000	0.649	0.001	0.248	0.000	0.830	0.001	0.477	0.000	0.570
Oman Interest	0.001	0.597	0.001	0.555	0.001	0.912	0.002	0.318	0.001	0.913	0.001	0.736
σ	0.148	0.000	0.145	0.000	0.151	0.000	0.144	0.000	0.147	0.000	0.152	0.000
$Q_{(4)}$	2.007		2.552		2.445		2.652		2.772		2.441	
$Q^2_{(4)}$	9.994		10.007		11.567		12.987		12.223		13.032	
Log-lik	504.09		512.98		505.05		432.11		459.01		448.13	

Note: See notes Table A1.

Table A3: Linear Results for the Qatar & UAE (Abu Dhabi) Stock Markets

	Qatar Stock Market											
News from ->	Bahrain		KSA		Kuwait		Oman		Qatar		UAE	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
μ	0.063	0.313	0.058	0.179	0.066	0.157	0.027	0.741	0.116	0.040	0.053	0.245
Business News	-0.007	0.457	-0.032	0.000	0.006	0.649	-0.001	0.958	-0.001	0.885	-0.034	0.005
Political News	0.001	0.870	0.002	0.601	-0.001	0.831	-0.003	0.611	0.006	0.410	0.000	0.892
r_{t-1}	0.133	0.133	0.055	0.290	0.033	0.538	0.162	0.073	0.054	0.404	0.051	0.371
r_{t-2}	-0.180	0.215	-0.114	0.131	-0.023	0.784	-0.120	0.444	-0.226	0.022	-0.107	0.217
Oil	-0.010	0.002	-0.003	0.126	-0.001	0.639	-0.003	0.352	-0.002	0.544	-0.003	0.188
VIX	-0.005	0.210	-0.002	0.350	-0.006	0.023	-0.005	0.289	-0.004	0.236	-0.006	0.053
Qatar Surprises	-0.002	0.126	-0.001	0.538	-0.001	0.352	-0.001	0.615	0.000	0.798	-0.001	0.284
Qatar Interest	0.002	0.517	0.001	0.823	0.001	0.565	0.004	0.254	0.003	0.314	0.002	0.392
σ	0.155	0.000	0.153	0.000	0.162	0.000	0.149	0.000	0.158	0.000	0.199	0.000
$Q_{(4)}$	3.556		4.098		4.112		4.336		4.068		3.995	
$Q^2_{(4)}$	11.098		12.345		11.954		10.886		10.739		12.976	
Log-lik	438.48		386.56		397.11		290.49		362.64		445.02	

	UAE (Abu Dhabi) Stock Market											
News from ->	Bahrain		KSA		Kuwait		Oman		Qatar		UAE	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
μ	0.051	0.390	0.075	0.071	0.106	0.040	-0.089	0.166	0.016	0.719	-0.011	0.812
Business News	-0.005	0.596	-0.060	0.000	-0.013	0.501	0.019	0.398	-0.044	0.000	0.002	0.844
Political News	0.000	0.963	0.005	0.232	-0.002	0.760	-0.003	0.669	0.008	0.069	0.003	0.475
r_{t-1}	0.183	0.041	-0.050	0.463	-0.020	0.810	-0.083	0.470	-0.093	0.201	-0.062	0.411
r_{t-2}	-0.347	0.013	0.106	0.230	0.164	0.130	0.008	0.958	0.281	0.004	0.035	0.746
Oil	-0.007	0.123	-0.005	0.181	-0.002	0.725	-0.003	0.581	-0.003	0.369	0.001	0.952
VIX	-0.004	0.383	-0.002	0.639	-0.007	0.103	0.002	0.684	0.001	0.788	-0.003	0.446
UAE Surprises	0.002	0.456	0.001	0.974	-0.002	0.523	0.007	0.053	0.001	0.928	0.002	0.583
UAE Interest	-0.007	0.032	-0.009	0.001	-0.008	0.004	-0.001	0.781	-0.005	0.026	-0.004	0.096
σ	0.271	0.000	0.266	0.000	0.283	0.000	0.279	0.000	0.291	0.000	0.288	0.000
$Q_{(4)}$	4.885		4.563		4.442		4.551		4.138		4.342	
$Q^2_{(4)}$	10.453		11.876		9.987		10.895		12.776		12.098	
Log-lik	420.54		384.39		500.88		276.34		462.03		470.88	

Note: See notes Table A1.

Table A4: Linear Results for the UAE (Dubai) Stock Market

News from ->	Bahrain		KSA		Kuwait		Oman		Qatar		UAE	
	UAE (Dubai) Stock Market											
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
μ	0.123	0.137	0.287	0.001	0.073	0.353	0.091	0.345	0.065	0.413	0.059	0.459
Business News	0.001	0.948	-0.111	0.782	-0.031	0.401	-0.027	0.387	-0.113	0.001	-0.141	0.005
Political News	-0.005	0.372	0.481	0.081	0.011	0.336	0.006	0.616	-0.006	0.541	0.012	0.371
r_{t-1}	-0.136	0.008	0.203	0.001	-0.048	0.361	-0.045	0.469	-0.091	0.077	-0.061	0.219
r_{t-2}	0.188	0.019	-0.091	0.193	0.152	0.059	0.157	0.083	0.159	0.043	0.157	0.048
Oil	0.009	0.191	0.012	0.079	0.006	0.339	0.001	0.834	0.009	0.178	0.002	0.732
VIX	-0.001	0.846	-0.017	0.001	-0.004	0.511	-0.008	0.265	-0.001	0.333	-0.001	0.807
UAE Surprises	0.001	0.775	-0.073	0.002	0.005	0.352	0.001	0.992	0.004	0.369	0.002	0.693
UAE Interest	-0.006	0.141	-0.005	0.050	-0.009	0.029	-0.005	0.247	-0.009	0.024	-0.009	0.021
σ	0.421	0.000	0.427	0.000	0.410	0.000	0.424	0.000	0.412	0.000	0.409	0.000
$Q_{(4)}$	1.754		3.667		2.113		1.532		1.978		1.963	
$Q^2_{(4)}$	6.445		7.554		8.112		8.445		9.223		8.554	
Log-lik	435.55		399.03		421.97		470.51		432.77		446.44	

Note: See notes Table A1.

Table A5: Markov Switching Results - Bahrain Stock Market

News from ->	Bahrain		KSA		Kuwait		Oman		Qatar		UAE	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
					Regime Low							
μ^l	0.037	0.052	0.057	0.003	0.064	0.006	0.024	0.301	0.056	0.000	0.067	0.003
Business News	0.071	0.181	-0.088	0.290	0.003	0.694	0.043	0.456	-0.136	0.025	-0.481	0.041
Political News	-0.014	0.662	0.015	0.618	0.158	0.102	0.032	0.897	0.033	0.465	-0.047	0.339
σ^l	0.033	0.000	0.027	0.000	0.028	0.000	0.031	0.000	0.051	0.000	0.032	0.000
					Regime High							
μ^h	0.089	0.003	0.333	0.000	0.106	0.002	0.081	0.006	0.132	0.000	0.079	0.008
Business News	-0.070	0.320	-0.970	0.001	-0.809	0.115	-0.636	0.045	-0.772	0.007	0.204	0.714
Political News	0.011	0.615	-0.004	0.911	-0.097	0.558	0.071	0.498	0.033	0.103	-0.021	0.343
σ^h	0.036	0.000	-0.038	0.931	0.039	0.000	0.037	0.000	0.062	0.000	0.038	0.000
					Control Variables							
r_{t-1}	0.261	0.000	0.162	0.000	0.244	0.000	0.272	0.000	0.228	0.000		
r_{t-2}	-0.083	0.129	-0.047	0.327	-0.012	0.787	-0.087	0.144	-0.085	0.342		
Oil	0.070	0.000	0.005	0.512	0.006	0.344	0.074	0.000	0.027	0.000	0.010	0.000
VIX	0.054	0.000	-0.023	0.018	-0.019	0.020	0.052	0.000	-0.071	0.000	0.049	0.025
Bah. Surprises	-0.062	0.000	-0.028	0.000	-0.028	0.000	-0.063	0.000	-0.074	0.000	-0.072	0.000
Bah. Interest	-0.010	0.317	-0.062	0.000	-0.057	0.000	-0.013	0.207	-0.080	0.000	-0.007	0.406
					Transition Matrix Parameters							
$p_{low,low}$	0.922	0.000	0.911	0.000	0.931	0.000	0.909	0.000	0.943	0.000	0.903	0.000
$p_{high,high}$	0.877	0.000	0.898	0.000	0.887	0.000	0.899	0.000	0.901	0.000	0.893	0.000
$Q_{(4)}$	0.488		0.228		0.233		0.523		0.144		0.377	
$Q_{(4)}^2$	4.009		4.552		3.997		3.889		3.657		4.453	
Log-lik	427.510		475.452		443.491		491.383		398.982		416.141	

Note: Autocorrelation and heteroscedasticity-consistent p-values (Prob.) are calculated by means of maximum likelihood method. $Q_{(4)}$ and $Q_{(4)}^2$ are the Ljung-Box test (1978) of significance of autocorrelations of four lags in the standardized and standardized squared residuals, respectively. $p_{low,low}$ and $p_{high,high}$ are the transition probabilities measuring the persistency of the low and high regimes, respectively.

Table A6: Markov Switching Results - Kingdom of Saudi Arabia Stock Market

News from ->	Saudi Arabia		Bahrain		Kuwait		Oman		Qatar		UAE	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
						Regime Low						
μ^l	0.042	0.070	-0.067	0.512	-0.031	0.701	-0.013	0.875	0.110	0.033	0.092	0.075
Business News	-0.998	0.018	0.413	0.515	0.324	0.654	0.051	0.866	-0.397	0.000	-0.282	0.404
Political News	-0.066	0.156	-0.042	0.817	0.550	0.461	0.398	0.676	0.005	0.336	0.196	0.096
σ^l	0.057	0.000	0.047	0.000	0.049	0.000	0.044	0.000	0.045	0.000	0.055	0.000
						Regime High						
μ^h	0.112	0.039	0.053	0.045	0.106	0.046	0.129	0.024	0.125	0.181	0.276	0.013
Business News	-0.042	0.104	0.238	0.546	-0.101	0.791	-0.046	0.509	-0.982	0.100	-4.081	0.014
Political News	-0.104	0.188	-0.019	0.185	-0.056	0.594	-0.007	0.791	-0.952	0.090	-0.398	0.360
σ^h	0.081	0.000	0.087	0.000	0.081	0.000	0.061	0.000	0.056	0.000	0.068	0.000
						Control Variables						
r_{t-1}	0.194	0.000	0.198	0.000	0.193	0.000	0.161	0.000	0.154	0.000	0.147	0.000
r_{t-2}	-0.085	0.109	-0.058	0.301	-0.105	0.736	-0.048	0.216	-0.075	0.207	-0.054	0.291
Oil	0.254	0.000	0.221	0.000	0.255	0.000	0.239	0.000	0.248	0.000	0.247	0.000
VIX	-0.013	0.000	-0.085	0.000	-0.017	0.000	-0.064	0.000	-0.012	0.000	-0.166	0.000
KSA Surprises	-0.059	0.000	-0.108	0.000	-0.058	0.000	-0.096	0.000	-0.060	0.000	-0.098	0.000
KSA Interest	-0.031	0.000	-0.038	0.000	-0.031	0.000	-0.039	0.000	-0.032	0.000	-0.037	0.000
						Transition Matrix Parameters						
$p_{low,low}$	0.963	0.000	0.955	0.000	0.945	0.000	0.944	0.000	0.952	0.000	0.943	0.000
$p_{high,high}$	0.922	0.000	0.895	0.000	0.905	0.000	0.934	0.000	0.918	0.000	0.949	0.000
$Q_{(4)}$	0.272		0.464		0.311		0.544		0.257		0.440	
$Q^2_{(4)}$	2.665		2.797		3.097		3.862		3.774		4.071	
Log-lik	506.765		430.342		491.730		483.592		410.928		483.394	

Note: See notes Table A5.

Table A7: Markov Switching Results - Kuwait Stock Market

News from ->	Kuwait		Bahrain		KSA		Oman		Qatar		UAE	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
Regime Low												
μ^l	0.041	0.040	0.025	0.645	0.037	0.049	0.037	0.005	0.046	0.039	0.051	0.025
Business News	-0.043	0.753	-0.055	0.280	-0.257	0.078	-0.288	0.463	-0.143	0.305	-0.358	0.055
Political News	0.018	0.492	0.007	0.568	0.141	0.749	0.055	0.410	-0.065	0.181	0.071	0.259
σ^l	0.042	0.000	0.031	0.000	0.042	0.000	0.041	0.000	0.036	0.000	0.037	0.000
Regime High												
μ^h	0.056	0.028	0.032	0.049	0.045	0.337	0.047	0.049	0.148	0.015	0.086	0.201
Business News	-0.997	0.314	-0.241	0.028	-0.982	0.012	-0.180	0.102	-0.985	0.034	-0.476	0.045
Political News	0.355	0.464	0.044	0.161	0.784	0.004	-0.103	0.473	-0.348	0.056	0.040	0.058
σ^h	0.048	0.000	0.051	0.000	0.047	0.000	0.048	0.000	0.045	0.000	0.045	0.000
Control Variables												
r_{t-1}	0.331	0.000	0.384	0.000	0.339	0.000	0.309	0.000	0.357	0.000	0.375	0.000
r_{t-2}	-0.032	0.537	-0.051	0.386	-0.056	0.321	0.023	0.664	-0.143	0.527	-0.062	0.243
Oil	0.038	0.001	0.139	0.000	0.228	0.000	0.274	0.000	0.250	0.000	0.261	0.000
VIX	-0.065	0.000	-0.026	0.000	-0.064	0.000	-0.077	0.000	-0.087	0.000	-0.066	0.000
Kuw. Surprises	0.023	0.000	0.031	0.000	0.010	0.003	0.007	0.026	0.017	0.000	0.013	0.000
Kuw. Interest	-0.025	0.000	-0.033	0.000	-0.079	0.000	-0.036	0.018	-0.055	0.001	-0.042	0.000
Transition Matrix Parameters												
$p_{low,low}$	0.923	0.000	0.951	0.000	0.929	0.000	0.932	0.000	0.943	0.000	0.922	0.000
$p_{high,high}$	0.934	0.000	0.897	0.000	0.904	0.000	0.899	0.000	0.908	0.000	0.905	0.000
$Q_{(4)}$	0.309		0.475		0.468		0.489		0.507		0.302	
$Q^2_{(4)}$	2.065		2.667		3.109		3.211		3.443		3.653	
Log-lik	373.75		338.62		391.752		375.823		377.831		384.415	

Note: See notes Table A5.

Table A8: Markov Switching Results - Oman Stock Market

News from ->	Oman		Bahrain		KSA		Kuwait		Qatar		UAE	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
Regime Low												
μ^l	-0.112	0.343	-0.087	0.090	-0.123	0.229	-0.043	0.259	0.078	0.037	0.034	0.000
Business News	0.338	0.873	-0.230	0.044	-0.972	0.048	0.092	0.476	-0.451	0.040	-0.164	0.009
Political News	0.832	0.258	0.042	0.145	0.934	0.001	-0.906	0.177	-0.102	0.706	0.079	0.295
σ^l	0.052	0.000	0.042	0.000	0.043	0.000	0.046	0.000	0.041	0.000	0.049	0.000
Regime High												
μ^h	0.012	0.743	0.041	0.000	0.065	0.032	0.041	0.076	0.092	0.124	0.112	0.000
Business News	-0.264	0.203	-0.175	0.004	-0.359	0.047	0.197	-0.102	-0.495	0.042	-0.938	0.787
Political News	-0.008	0.545	-0.007	0.633	-0.072	0.517	-0.035	0.270	-0.110	0.114	0.033	0.419
σ^h	0.076	0.000	0.071	0.000	0.075	0.000	0.053	0.000	0.063	0.000	0.062	0.000
Control Variables												
r_{t-1}	0.453	0.000	0.401	0.000	0.421	0.000	0.431	0.000	0.412	0.000	0.381	0.000
r_{t-2}	-0.204	0.000	-0.251	0.005	-0.179	0.000	-0.231	0.000	-0.451	0.000	-0.171	0.000
Oil	0.019	0.944	0.048	0.000	0.032	0.000	0.031	0.000	0.026	0.000	0.034	0.000
VIX	-0.093	0.056	0.045	0.000	0.074	0.000	0.081	0.000	-0.053	0.789	0.074	0.787
Oman Surprises	0.059	0.017	-0.029	0.000	-0.021	0.000	-0.020	0.000	-0.026	0.000	-0.030	0.419
Oman Interest	-0.112	0.000	-0.159	0.000	-0.105	0.000	-0.167	0.000	-0.185	0.001	-0.098	0.000
Transition Matrix Parameters												
$p_{low,low}$	0.711	0.021	0.732	0.021	0.713	0.099	0.721	0.043	0.734	0.015	0.728	0.011
$p_{high,high}$	0.798	0.092	0.702	0.324	0.798	0.218	0.778	0.124	0.708	0.209	0.797	0.204
$Q_{(4)}$	0.642		0.379		0.260		0.212		0.375		0.256	
$Q^2_{(4)}$	2.998		3.008		3.225		3.674		4.097		4.432	
Log-lik	355.808		353.033		366.787		399.777		383.571		356.402	

Note: See notes Table A5.

Table A9: Markov Switching Results - Qatar Stock Market

News from ->	Qatar		Bahrain		KSA		Kuwait		Oman		UAE	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
					Regime Low							
μ^l	0.158	0.000	0.041	0.401	0.043	0.120	0.081	0.029	0.041	0.420	0.148	0.000
Business News	-1.150	0.002	-0.051	0.826	-0.782	0.093	0.050	0.464	-0.064	0.809	-1.365	0.002
Political News	0.021	0.199	0.014	0.617	1.138	0.014	0.135	0.123	0.191	0.216	0.046	0.626
σ^l	0.052	0.000	0.063	0.000	0.069	0.000	0.058	0.000	0.061	0.000	0.060	0.000
					Regime High							
μ^h	0.191	0.000	0.061	0.117	0.119	0.003	0.105	0.026	0.065	0.112	0.175	0.012
Business News	-1.939	0.005	0.058	0.825	-0.664	0.036	-0.986	0.039	-0.038	0.825	-2.050	0.026
Political News	-0.159	0.399	0.007	0.530	0.011	0.406	0.029	0.893	0.033	0.502	0.181	0.533
σ^h	0.071	0.000	0.074	0.000	0.082	0.000	0.075	0.000	0.078	0.000	0.081	0.000
					Control Variables							
r_{t-1}	0.247	0.000	0.335	0.000	0.273	0.000	0.286	0.000	0.343	0.000	0.267	0.000
r_{t-2}	-0.116	0.021	-0.114	0.042	-0.114	0.032	-0.131	0.000	-0.131	0.000	-0.101	0.000
Oil	0.099	0.000	0.004	0.866	0.069	0.000	0.147	0.000	0.051	0.161	0.093	0.000
VIX	-0.080	0.000	-0.074	0.000	-0.033	0.000	-0.020	0.000	-0.070	0.000	-0.015	0.000
Qatar Surprises	-0.029	0.000	0.016	0.117	0.012	0.143	-0.029	0.000	0.000	0.982	-0.036	0.000
Qatar Interest	-0.032	0.000	-0.033	0.000	-0.033	0.000	-0.038	0.000	-0.036	0.000	-0.036	0.000
					Transition Matrix Parameters							
$p_{low,low}$	0.944	0.000	0.947	0.000	0.936	0.000	0.941	0.000	0.939	0.000	0.952	0.000
$p_{high,high}$	0.909	0.000	0.899	0.000	0.921	0.000	0.911	0.000	0.907	0.000	0.928	0.000
$Q_{(4)}$	0.271		0.249		0.286		0.224		0.259		0.274	
$Q^2_{(4)}$	3.332		4.221		4.452		3.775		3.412		3.078	
Log-lik	389.135		390.684		399.105		408.811		386.710		426.600	

Note: See notes Table A5.

Table A10: Markov Switching Results - UAE (Abu Dhabi) Stock Market

News from ->	UAE		Bahrain		Kuwait		KSA		Oman		Qatar	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
					Regime Low							
μ^l	0.168	0.001	0.064	0.000	0.082	0.194	0.093	0.084	0.048	0.446	0.112	0.006
Business News	-0.185	0.142	-0.085	0.238	-0.147	0.131	-0.457	0.093	0.491	0.950	-0.194	0.619
Political News	-0.077	0.110	-0.019	0.294	0.002	0.941	0.023	0.003	0.217	0.632	0.014	0.614
σ^l	0.047	0.000	0.048	0.000	0.066	0.000	0.047	0.000	0.049	0.000	0.048	0.000
					Regime High							
μ^h	0.234	0.005	0.103	0.120	0.108	0.000	0.101	0.003	0.118	0.003	0.219	0.005
Business News	-0.311	0.047	-0.032	0.826	-0.497	0.263	-0.275	0.061	-0.158	0.497	-0.998	0.010
Political News	0.088	0.279	0.006	0.853	0.213	0.212	0.029	0.043	-0.012	0.059	0.092	0.794
σ^h	0.079	0.000	0.078	0.000	0.076	0.000	0.074	0.000	0.082	0.000	0.085	0.000
					Control Variables							
r_{t-1}	0.215	0.000	0.312	0.000	0.231	0.000	0.208	0.001	0.301	0.000	0.232	0.000
r_{t-2}	-0.029	0.117	-0.003	0.358	-0.018	0.671	-0.051	0.237	-0.047	0.462	-0.021	0.618
Oil	0.065	0.005	0.044	0.023	0.016	0.086	0.048	0.001	0.044	0.023	0.068	0.000
VIX	-0.044	0.000	-0.046	0.000	-0.084	0.000	-0.038	0.000	-0.061	0.000	-0.042	0.000
UAE Surprises	-0.267	0.000	-0.260	0.000	-0.198	0.000	-0.260	0.000	-0.258	0.000	-0.272	0.000
UAE Interest	-0.034	0.039	-0.035	0.064	-0.104	0.000	-0.003	0.829	-0.025	0.163	-0.029	0.077
					Transition Matrix Parameters							
$p_{low,low}$	0.921	0.000	0.913	0.000	0.906	0.001	0.926	0.000	0.932	0.000	0.933	0.000
$p_{high,high}$	0.871	0.000	0.885	0.000	0.834	0.000	0.854	0.000	0.818	0.000	0.832	0.000
$Q_{(4)}$	0.380		0.369		0.263		0.455		0.404		0.366	
$Q^2_{(4)}$	3.895		3.393		4.005		4.525		4.619		3.911	
Log-lik	544.556		448.861		478.692		554.100		446.299		526.100	

Note: See notes Table A5.

Table A11: Markov Switching Results - UAE (Dubai) Stock Market

News from ->	UAE		Bahrain		Kuwait		KSA		Oman		Qatar	
Variable	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
						Regime Low						
μ^l	0.237	0.000	0.121	0.260	0.161	0.106	0.172	0.105	0.133	0.217	0.239	0.000
Business News	-1.021	0.001	-0.239	0.721	0.794	0.653	-0.577	0.407	0.360	0.735	-0.639	0.077
Political News	-0.097	0.245	-0.051	0.887	0.774	0.102	0.084	0.091	0.786	0.726	-0.148	0.213
σ^l	0.079	0.000	0.075	0.000	0.071	0.000	0.072	0.000	0.077	0.000	0.073	0.000
						Regime High						
μ^l	0.406	0.000	0.155	0.003	0.203	0.000	0.229	0.000	0.161	0.009	0.359	0.000
Business News	-3.052	0.098	-0.221	0.486	-0.577	0.152	-0.153	0.736	-0.476	0.342	-2.211	0.084
Political News	0.237	0.273	-0.085	0.368	-0.111	0.315	-0.355	0.164	0.087	0.479	-0.075	0.842
σ^l	0.105	0.000	0.114	0.000	0.121	0.000	0.108	0.000	0.099	0.000	0.096	0.000
						Control Variables						
r_{t-1}	0.228	0.000	0.344	0.000	0.245	0.000	0.246	0.000	0.368	0.000	0.246	0.000
r_{t-2}	-0.043	0.095	-0.012	0.746	-0.052	0.265	-0.609	0.409	-0.076	0.212	-0.023	0.320
Oil	0.161	0.000	0.042	0.025	0.029	0.094	0.092	0.023	0.192	0.000	0.132	0.000
VIX	-0.063	0.000	-0.091	0.000	-0.071	0.000	-0.051	0.000	-0.096	0.000	-0.096	0.000
UAE Surprises	-0.400	0.000	-0.361	0.000	-0.360	0.000	-0.381	0.000	-0.354	0.000	-0.330	0.000
UAE Interest	-0.075	0.006	-0.068	0.006	-0.036	0.137	-0.098	0.000	-0.130	0.000	-0.051	0.000
						Transition Matrix Parameters						
$p_{low,low}$	0.959	0.000	0.922	0.000	0.934	0.001	0.932	0.000	0.944	0.000	0.937	0.000
$p_{high,high}$	0.919	0.000	0.907	0.000	0.921	0.000	0.896	0.000	0.917	0.000	0.922	0.000
Q$_{(4)}$	0.446		0.396		0.373		0.485		0.576		0.286	
Q$^2_{(4)}$	2.445		3.671		3.229		4.006		4.234		3.887	
Log-lik	407.562		416.900		396.145		394.877		434.406		397.040	

Note: See notes Table A5.