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# Calendar anomolies and stock market volatility in selected Arab stock exchanges

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## Abstract

While seasonal effects for both advanced and emerging markets have been investigated extensively in mean and variance equations, Arab region asset markets have received much less attention. The objective of this article is to fill this gap in the literature by investigating the day-of-the-week effect in 12 major Arab stock markets using Arab Monetary Fund (AMF) daily index returns from May 2002 to December 2005. Our estimation strategy utilizes Autoregressive (AR) and Generalized Autoregressive Conditional Heteroscedastic (GARCH)-type specifications to allow for a time-varying variance. Among the most important results of this article are, first, is one-third of these markets exhibit significant day-of-the-week effect in returns. Second, two-third of these markets exhibit significant day-of-the-week effect on volatility. Third, most of these dayof-the-week effects are focused within the beginning and the end of the trading week. Finally, the existence of a significant risk premium was confirmed in five of the 12 studied markets.

## Notes

<sup>1</sup> A common occurrence in which stock returns tend to be negative Friday through Monday.

<sup>2</sup> A general increase in stock prices during the month of January. This rally is generally attributed to investors buying stocks that have dropped in price following a sell-off at the end of December by investors seeking to create tax losses to offset any capital gains.

<sup>3</sup> The four markets are Abu-Dhabi market in UAE (3 May 2004 to 31 December 2004), Doha market in Qatar (23 August 2004 to 31 December 2005), Dubai market in UAE (3 May 2004 to 31 December 2005) and Palestine market (1 January 2005 to 31 December 2005).

<sup>4</sup> The market of Dubai in UAE exhibits the highest risk-return schedule among all markets. Again, this may be attributed to the short sample period covered for this market.

<sup>5</sup> The reason for not including all trading days is to avoid the dummy variable trap which gives rise to perfect collinearity among the dummy variables and the constant term (Greene, <u>1997</u>).

<sup>6</sup> For a list of the excluded trading days in each market, see Table 3.

<sup>7</sup> It is straightforward to show that Bollerslev's (1986) GARCH model is based on the infinite ARCH model introduced by Engle (1982).

<sup>8</sup> The GARCH-LM test is a Lagrange Multiplier test to examine whether the standardized residuals exhibit additional ARCH effects.

<sup>9</sup> The Richardson and Smith (<u>1994</u>) is run under the null of no autocorrelation and is distributed  $\chi^2$  with k degrees of freedom. If the null cannot be rejected, it can be deduced that the specification of the conditional mean in (2) is equal to a constant plus the calendar dummy variables and a residual. On the other hand, if the null is rejected, an AR(1) model is estimated on the series.

 $^{10}$  Similar results are obtained in Apollinario et al. (2006).

 $^{\rm 11}$  D  $_{\rm Fri}$  was excluded since it has no significant variable coefficients.

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