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Calendar anomalies in the Gulf Cooperation Council stock markets

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ABSTRACT

We examine calendar anomalies in Gulf Cooperation Council (GCC) stock markets and document a Friday-type effect that occurs on the last trading day of the week and which we call "Wednesday effect", since Wednesday is the last day before the weekend in the leading market for the region. This effect, however, is more pronounced outside the month of *Ramadan*. We also find a statistically significant positive December effect, contrary to the January effect documented in Western countries. The presence of such anomalies may provide money managers with opportunities to optimally time their trades based on daily and monthly price fluctuations.

1. Introduction

The Gulf Cooperation Council (GCC) region is gaining increasing attention on a global scale.[2] The region has weathered well the global financial crisis, and the leading economic GCC country, Saudi Arabia, which is a member of the G20, has announced the largest fiscal stimulus plan as a percentage of GDP. Other developments have also positioned this region on a global scale. Prior to 2008, GCC member countries had witnessed an unprecedented economic boom ignited by high oil prices and resulting in excess liquidity in the form of petrodollars since the turn of the century. GCC Sovereign Wealth Funds have become predominant on the international arena, undertaking strategic investments in different crisis-afflicted industries throughout the world. Additionally, GCC countries have set the course for regional economic and

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[1] Tel.: +1 810 762 3318.
[2] GCC countries include Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates.

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monetary integration among member states, increasing their potential collective role as a global economic player.

More importantly, all GCC countries have gained accession to the World Trade organization (WTO) and they are gradually opening up their markets to foreign investors. Broad-ranging structural reforms and regulations have recently provided greater foreign investors access to GCC financial markets, which had previously remained unknown to institutional investors. A substantial body of evidence analyzing correlation in returns across regional and international markets provides evidence that GCC markets might provide an important venue for international portfolio diversification (Al Janabi et al., 2010; Assaf, 2003; Bley and Heng Chen, 2006; Hammoudeh and Aleisa, 2004; Hammoudeh and Choi, 2005, 2007).[3]

In this paper, we examine whether GCC markets are weakly efficient through the presence of seasonal patterns that can be employed to realize abnormal returns.[4] We focus on two major calendar anomalies that are reported in different stock markets across the globe, the day-of-the-week or Monday effect and the month-of-the-year or January effect. The Monday effect happens when returns are lower or negative on Mondays in comparison with the returns on other days of the week. The month-of-the-year or January effect, which is generally a characteristic of small stocks, occurs when returns are abnormally higher in January compared to other months of the year.

Our motivation is that GCC stock markets are unique in their trading days and holidays. Specifically, they observe different trading days and non-overlapping holiday periods compared to most countries so that calendar anomalies, if any, are likely to be different from those reported for other economies. Monday does not represent the first day of the week in any of the GCC countries and there is no basis for international investors to expect negative returns on that day similar to those documented for other stock markets. Also, the last trading day of the week for the leading regional market or *Tadawul* in Saudi Arabia falls on Wednesday, and events affecting that market on a particular day may be expected to spill over to other GCC countries, especially in light of increased regional integration and projected monetary union (Bley and Heng Chen, 2006). If the day-of-the-week effect reported for other stock markets holds for the GCC region, we expect positive (negative) returns on the last (first) trading day of the week, or Wednesdays (Saturdays). Furthermore, religious holidays and activities for GCC nationals follow the *Hijri* calendar year that is based on lunar months, notwithstanding the use of the Gregorian calendar by businesses and governments. The observed holidays do not coincide with other non-Muslim religious holidays, and one example is *Eid-El-Fitr* that marks the end of the holy month of *Ramadan*. *Ramadan* bears a special significance to GCC investors because Muslims are required to fast during this month and to show care for the less fortunate in society, in addition to exercising spirituality. As a result, the trading activity of GCC investors is likely to be reduced during *Ramadan*, and a month-of-the-year effect, if present, may be associated with the occurrence of this month.

The study of calendar anomalies in the context of GCC countries has received little attention in the academic literature, generally focusing on a single member country and not the region as a whole. For example, Seyyed et al. (2005) investigate seasonality in return volatility associated with the month of Ramadan for the Saudi *Tadawul* stock market, and they document a systematic declining pattern of volatility that reflects reduced trading activity during the fasting period. Al-Saad and Moosa (2005) report a July effect for the Kuwait Stock Exchange which they characterize as a "summer holiday effect"; Al-Saad (2004) also examines the Kuwait Stock Exchange but his results do not show the presence of any holiday effect, although stock returns are significantly higher post liberation of Kuwait following the Iraqi invasion. More recently, Al-Khazali (2008) finds no evidence in support of a day-of-the-week effect in the United Arab Emirates (UAE) stock markets, suggesting that these markets are to a certain extent efficient. Al-Barrak (2009) examines the day-of-the-week effect in three GCC markets (Saudi Arabia, Kuwait, and Dubai) and reports that a daily anomaly exists only in Kuwait stock market. Finally, Bley and Saad (2010) examine three market anomalies in the context of GCC countries; namely day-of-the-week, month-of-the-year, and holiday effects. They find evidence of a day-of-the-week effect in most GCC stock markets, but occurring on days that are different from Friday and Monday. However, they report

[3] In contrast, Al-Khazali et al. (2006) do not find that GCC equity investments provide portfolio diversification gains to investors with long-term horizons, although short-term benefits are likely.

[4] A recent study by Bley (2011) tests for the weak-form efficiency in GCC stock markets and rejects the random walk hypothesis, suggesting that foreign institutional investors might have had a role to play in increasing serial correlation in returns.