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Borsa İstanbul Review

Borsa İstanbul Review 14-4 (2014) 224–235
http://www.elsevier.com/journals/borsa-istanbul-review/2214-8450

Tripartite analysis across business cycles in Turkey: A multi-timescale inquiry of efficiency, volatility and integration

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Received 3 July 2014; revised 21 September 2014; accepted 21 September 2014
Available online 2 October 2014

Abstract

In the current era of globalization, deregulation and liberalization of markets have led to financial integration amongst developing and developed countries. The sudden massive inflow of capital into developing country's stock markets begs the question of whether or not the markets are sufficiently efficient to handle the increasing integration of markets. Furthermore, the relationship between the integration and efficiency of stock markets tends to be of greater importance during economic downturns. Taking Turkey as a case study owing to its economic growth and importance in two successful blocs, i.e. the EU and the OIC, we attempt to analyse the linkages between stock market efficiency and integration during the different phases of the economy. The findings of our study provide an interesting insight into the relative improvement in volatility, efficiency and integration across business cycles, in a multi time scale analysis.
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JEL classifications: C22; E44; G1

Keywords: Islamic finance; Stock market efficiency; Multifractal

1. Introduction

It is argued that the increasing linkages between countries brought on by financial integration often cause capital flows to emerging markets to be pro-cyclical and highly volatile in nature (Steffen, 2012). This subsequently increases financial instability and output volatility as observed more clearly during crisis periods. Yet at the same time, as emerging markets become more attractive to foreign investors for diversification, stock markets are able to increase their liquidity and informational transparency, allowing for higher degree of efficiency and integration. On a macroeconomic level, it is argued that financial integration tends to improve financial infrastructure, as it leads to improved allocation of resources, enhancing both consumption and income risk-sharing and reduces volatility of consumption growth. Additionally, as linkages increase, it can also lead to adoption of international accounting standards and a closer monitoring of the market, allowing markets to be more transparent. Hence, in an environment where increasing linkages improve the domestic market, problems of asymmetric information are curtailed and efficiency is maximized (Islamaj, 2014).

Pioneered by Fama (1965), the Efficient Market Hypothesis (EMH) has been widely discussed and deliberated for the efficiency of stock returns. Random walks in stock returns are critical in formulating the rational expectation models and testing the weak form market efficiency, which states that the current price is reflective of all information included in the past prices. Therefore, as stock prices incorporate all vital information, the returns should be based on a random pattern. Contrarily, if stock prices

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Peer review under responsibility of Borsa İstanbul Anonim Şirketi.

http://dx.doi.org/10.1016/j.bir.2014.09.001
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were predictable, there would be distortions in the pricing of capital and risk, thus inhibiting economic development (Worthington & Higgs, 2005). A market characterized by predictable stock returns stunts the ability of the market to perform its role in attracting foreign investment, enhancing domestic savings and lastly, refining the pricing and accessibility of capital, all of which depend on the random walk. Therefore, a lack of random walk could potentially have serious implications on the capital of an economy and the economy itself (Worthington & Higgs, 2005). Considering the vast significance of market efficiency as a crucial tool contributing towards effective research allocation and investment and growth in an economy, the link between efficient stock prices and effective allocation of investment resources has attracted considerable literature. Several studies show that efficient stock markets augment the efficiency of capital allocation (Wurgler, 2000) consequently persuading higher productivity and economic growth (Durnev, Randall, & Bernard, 2004). Furthermore, an efficient stock market would facilitate greater efficient corporate capital investments (Durnev et al., 2004). Hence, in order to understand the level of efficiency in a market, testing for weak form efficiency becomes imperative, as it is indicative of an efficient market. Additionally, it serves as both a theoretical and predictive model about how financial markets operate and contribute in impelling more people to invest in stock markets.

In the current era of globalization, deregulation and liberalization of markets have led to financial integration amongst developing and developed countries. If assets of identical risk in different countries lead to parallel levels of expected returns, the markets are said to be integrated. In the midst of internal, regional and global turmoil, financial integration becomes increasingly important to study as a crisis in one country could have a contagion effect in another. Many authors have supported the positive impact of market integration on growth (see Edison, Klein, Ricci, & SlØk, 2004; Henry, 2007; Kose, Prasad, Rogoff, & Wei, 2009). While there is evidence of benefits on economic and stock market growth, the level of integration is far from perfect for emerging markets (see Bekaert, Harvey, Lundblad, & Siegel, 2011; Carrieri, Chaieb, & Errunza, 2013; Carrieri, Errunza, & Hogan, 2007).

Drawing to the core of our study, Turkey began its liberalization in the 1980s, which allowed for foreign trade and profit transfer, attracting several foreign investments into the country growing its economy by 4% in 2013 and a further 2.3% growth is projected for 2014 (IMF, 2013). It was through extensive reforms in the external and financial sectors, that the Turkish economy became increasingly integrated with the world. This integration, in the midst of a universal assimilation of emerging markets with developed countries, brings about the discussion on market integration across countries and stock markets (see Nazlioglu & Erdem, 2010; Neaime, 2002; Oskam and Burrell, 2004).

Additionally, the East Asian, Russian, Mexican, global crisis and the Euro crisis have all brought the issue of contagion between emerging markets and developed market in the limelight. Turkey, in particular is of interest owing to large amounts of capital inflows, predominantly in the short-term and portfolio investments. Capital inflows increased abundantly in the early 1990s, with the exception of the Gulf crisis in 1991 and the internal crisis of 1994, increasing from $1.9 billion in 1987 to $8.9 billion in 1993 (Yentuk, 1999). During the financial crisis of 1994, the capital account reached a deficit of $4 billion.

Keeping in mind, the effect different business phases has on stock markets, this paper attempts to analyse the Turkish stock market's level of efficiency and its integration with several markets during the different vicissitudes in the economy. The objective of this paper is to firstly, derive the efficiency of the Turkish stock market in line with different phases of the economy and secondly, to understand the level of integration of Turkish stocks with the world average and its major trading collaborates, i.e. Asia Pacific and European Union. Thirdly, the present study contributes to existing literature on the EMH by focussing on an emerging market and linking efficiency with other vital measures, i.e. volatility and integration. Furthermore, we contribute towards a dearth in literature regarding Turkey by studying a multilateral effect on its stock market, on which no prior papers have been found. Hence, based on these objectives, we formulate the following research questions: (1) Is the volatility higher during economic busts than booms? (2) Does the Turkish stock show improved efficiency during economic booms than bust periods? (3) Is the Turkish stock market highly integrated with the world average, Asia Pacific and European Union?

It is owing to its strategic political and economic importance that we chose Turkey. Turkey lies in the heart of two important blocs, the European Union and the Organization of Islamic Countries, with a potential of being a regional superpower, and it uniquely represents a bridge between the western and Islamic worlds being a modern Muslim country. Moreover, the economic importance of Turkey arises from its significant role in the distribution of energy from the Middle East to Europe. Ranked the 18th largest economy in the world, it becomes significant to analyse its economic viability. The Turkish stock market lies in the heart of this bourgeoning prominence, ranking 8th in terms of traded value among emerging markets. Furthermore, the stock market has a significant foreign investor base, to the tune of US $ 65 billion in equities and daily equities average trade volume reached US $ 1.7 billion in 2013. The Turkish stock market is further becoming increasingly significant to investors and policymakers alike, owing to current global political instability. With increasing Western sanctions against Russia, Turkey is expected to be at the receiving end of capital flows intended for Russia. By way of significant increase in market activities, the Turkish stock market and the economy as whole becomes a rather interesting and fertile prospect. Coupled with Turkey's strengthening economic ties with the EU, Iran, Qatar amongst others, deliberating on the sustenance of Turkey's stock market, found through the volatility and integration nexus, can allow policymakers and economist to make better strategic investments.

The remainder of this paper is organised in the following manner: Section 2 details a review of existing literature, while Section 3 provides the data and methodology used. Section 4 elucidates the empirical results obtained. Lastly, Section 5 concludes the study.

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