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Macroeconomic Sensitivity, Risk-Return Trade-Off and Volatility Dynamics Evidence From Developed and Developing Markets

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ABSTRACT

This study aims to examine the impact of macroeconomic factors on the stock return volatility along with the pricing of risk, and asymmetry and leverage effect on a comparative basis for the USA and UAE markets. Further, these three dimensions are also investigated with regard to various firm's features (such as firm's size and age). The daily data for the period 4th January 2010 to 29th December 2017 of firm stock returns from the New York Stock Exchange (NYSE), the Abu Dhabi Securities Exchange (ADSE), and the Dubai Financial Market (DFM) is considered and three time-series models were applied. The results from GARCH (1. 1) indicated that all the economic factors have significant impact on the stock return volatility in both the markets. Similarly, the study also found evidence of asymmetry & leverage effect using EGARCH in the NYSE (for all firms) and the UAE (partially). Finally, for a majority of the firms, a positive risk-return relationship is found in the UAE and a negative risk-return relationship is found in the NYSE using GARCH-in the mean. Interestingly, these results in context of both markets were different with respect to various firm features such as firm size and age. In light of these results, it is concluded that both the markets have different dynamics with regard to all three dimensions. Hence, the investors have a clear opportunity to diversify their risk and investments across developed and emerging markets.

KEYWORDS

Leverage Effect, Macroeconomic Variables, NYSE, Risk-Return Trade-Off, UAE Stock Markets

1. INTRODUCTION

During the past few years, a considerable focus of researchers has been observed on the relationship between macroeconomic factors and stock market development (Moore & Wang, 2014). This relationship has been examined theoretically and empirically; however, the main driving forces behind this relationship is still unexplored. Researchers are unanimously agreed upon the importance of stock

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markets and their role in a particular economy (whether developed or emerging). More specifically, efficient markets reflect a healthy and strong economy. However, the uncertainty in the stock markets in the form of returns volatility to investors can force the local and foreign investors to withdraw their funds from these markets. In the last couple of decades as also observed by the researchers, there is high correlation is found in the development of stock markets and the country's economic factors (Khan et al., 2016). Furthermore, investors are interested to diversify their investments in the uncorrelated markets of the world. More precisely, investors are seeking the investment opportunities in both developed and emerging markets (Jan et al., 2018).

The current study considers the stock markets of US (developed) and UAE (emerging). The history of stock markets in UAE is not very long and most of them are established only a few years ago. Particularly, the Abu Dhabi Securities Exchange (ADX) (formerly known as Abu Dhabi Securities Market (ADSM)) and the Dubai Financial Markets (DFM) are the most recent and important markets of Middle East as a whole (Obeidat, 2009). [1]The Abu Dhabi Securities Exchange was created on 15th November 2001 and Dubai Financial Market started functions on 26th March 2000. These were created under the supervision of Emirates Securities and Commission Authority and also the members of "Federation of Euro-Asian Stock Exchanges". The number of listed firms at ADX is greater than DFM but the trading volume is higher at DFM than ADX. There are four main sectors i.e. Banking, Insurance, Service, and Industry and Hotels listed on Abu Dhabi Securities Exchange. In short both of these emerging stock markets are playing a major role in the financial development of UAE.

The United States stock markets on the other hand are considered as the largest markets of the world. The major stock exchanges of US include NYSE, AMEX, and NASDAQ. The NYSE (also known as "the Big Board") was established on May 17, 1792[2]. The NYSE is considered one of the oldest and largest stock exchanges by market capitalization of its listed firms at US$ 21.35 trillion as of June 2017. Similarly, the average daily trading worth estimated as on December 2013 equals to US$170 billion.

The remaining of the paper is divided into four other sections. The section two presents the existing literature on the researched area. In section three the empirical models, analytical procedure, data, and methodology is discussed. Section four discusses the empirical results. The final section will conclude the paper.

2. REVIEW OF LITERATURE

The existing empirical work on measuring and forecasting the stock return volatility is quite extensive. There is an ongoing debate in financial literature that both in developed and emerging markets the stock prices are very sensitive to the macroeconomic fundamentals (Kumari & Mahakud, 2015). According to Schwert (1989), if the macroeconomic factors can predict the expected future cash flows and discounts, then these can also predict the stock market volatility. Theoretically, dividend discount model (DDM) and arbitrage pricing theory (APT) provide a link between macroeconomic factors and stock return volatility (Chen et al., 1986). These models claim that any expected or unexpected variation in interest rates, exchange rates, inflation, GDP, or money supply can also bring change in the stock return volatility via expected future cash flow and dividends (Fah et al., 2011). The understanding regarding the role of macroeconomic factors in determining the stock return volatility is of great importance to investors (in maximizing investments and hedging strategies) as well as policy makers (to ensure macroeconomic stability). Some earlier work in context of stock return volatility show varying results. Black (1976) and then Christie (1982) indicated a link of stock return volatility with financial leverage and interest rates. Similarly, Schwert (1989) highlighted the role of macroeconomic variables in determining stock return volatility and additionally admitted that this relationship is stronger during recessions. Most of the initial work in context of stock return volatility has been done in context of developed markets. For instance, the impact of macroeconomic variables on the Canadian stock market volatility was conducted by Koutoulas and Kryzanowski (1996). Their macroeconomic determinants

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