Emerging Markets Reward Risk: Empirical Evidence from MENA during 2008 Financial Crisis

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ABSTRACT

The relationship between risk and return in Middle East and North Africa (MENA) region stock markets is estimated during 2008 international financial crisis; including Jordan, KSA, Morocco, and Turkey. For comparison purpose, stock markets from Europe are also examined; including, FTSE (UK), CAC40 (France), DAX (Germany), and the Swiss market. The empirical findings show evidence that; contrary to European stock markets; MENA region stock markets generally reward risk during 2008 financial crisis. This result is important for international asset managers and investors to consider investing in emergent markets from MENA region.

KEYWORDS

2008 Financial Crisis, ARMA, EGARCH, MENA, Risk-Return Tradeoff, Risk Reward, Stock Markets

1. INTRODUCTION

Recently, several works have focused on studying stock market; including examining market efficiency (Lahmiri et al, 2014; Lahmiri, 2013a, 2014a, 2014b, 2015, 2016a, 2016b, 2016c), modeling and forecasting market prices (Lahmiri, 2011; Lahmiri, 2012b, 2012c; Lahmiri & Boukadoum, 2015), and investigating the effects of technology and governance on market behavior (Ikpefan & Oligbo, 2012; Narang, 2012; Choudhury, 2013; Shaw et al, 2014). Besides, the linkage between asset risk and return is an interesting issue in portfolio management and corporate finance that merits deeper investigation in emergent markets. Indeed, the risk-return relationship (Merton, 1973, 1980) has become an important concern for investors and academicians. From a theoretical point of view, in equilibrium additional risk taken by an investor should be compensated through higher expected return according to theory (Merton, 1973, 1980). As a result, risk and return are expected to be positively related.

In practice, each investment instrument in the financial markets including stock, bonds, and derivatives is characterized by a return expectation and its associated risk. For instance, an investor who is willing to buy a given stock wants to understand the relationship between its volatility and returns. Such information is helpful for buy/sell/hold decision-making and portfolio diversification. Indeed, investments can no longer be selected based on their returns but also by considering their respective risk measured by volatility. For example, a high (low) risk asset is expected to yield high (low) return. Thus, an asset with high return and low risk is preferable than another one with low return and high risk. In this regard, risk modeling is receiving a growing interest; for instance; in finance and energy applications (Lahmiri, 2012a, 2013b, 2013c). This growing interest in the topic may have been motivated by the following three elements. First, the existence of economic theory that provides foundations of relationship between asset risk and return. Second, there exist several advanced...
econometric methods for time series analysis and modeling to capture variability in financial data. Third, there are several empirical studies that documented the subject across international market. In this regard, comparisons could be performed.

In finance, asset allocation should be made based on the relative relationship between return and risk. Surely, assessing expected returns relative to risk is crucial for portfolio strategists in order to efficiently allocate assets to form portfolio. In addition, forecasting the stock market is mostly accompanied with forecasting its volatility. Such task is very important to model the influence of assets to the market value. The GARCH-in-Mean (generalized autoregressive conditionally heteroskedastic in the mean: GARCH-M of Engle et al. (1987) is the most common model used to evaluate the time-varying risk-return relationship (French et al., 1987; Campbell & Hentschel, 1992; Bansal & Lundblad, 2002; Girard et al., 2002; Xing & Howe, 2003; Baillie & DeGennaro, 1990; Glosten et al., 1993; Nam et al., 2001). The GARCH-M model allows the introduction of the conditional variance, or some function of it, as a regressor in the mean equation. Thus, the validity of the positive relationship between risk and return can statistically be tested. Following GARCH-based processes, the conditional error follows a particular distribution with conditional variance defined as a linear function of past square errors and lagged conditional variance (Bollerslev, 1986; Engle et al., 1987; Corhay & Rad, 1994). Indeed, GARCH-based processes allow for volatility clustering. For instance, large changes are followed by large changes, and small by small. This pattern in volatility of financial time series has long been examined and found to be as an important feature of stock returns behavior (French et al., 1987; Campbell & Hentschel, 1992; Bansal & Lundblad, 2002; Girard et al., 2002; Xing & Howe, 2003; Baillie & DeGennaro, 1990; Glosten et al., 1993; Corhay & Rad, 1994; Nam et al., 2001).

The empirical literature using GARCH-M reported conflicting findings. In other words, empirical literature examining this issue is not unanimous. For instance, Baillie and DeGennaro (1990), Glosten et al. (1993), and Nam et al. (2001) have reported a negative relationship between risk and return, while French et al. (1987), Campbell and Hentschel (1992), Bansal and Lundblad (2002), Girard et al. (2002), and Xing and Howe (2003) have reported a positive relationship. Most previous works examined the risk-return tradeoff in developed countries (French et al., 1987; Campbell & Hentschel, 1992; Bansal & Lundblad, 2002; Girard et al., 2002; Xing & Howe, 2003; Baillie & DeGennaro, 1990; Glosten et al., 1993; Nam et al., 2001), and some attention has been paid to developing countries (Curci et al., 2002; Forgha, 2012).

More recently, Christensen et al (2015) found that the risk-return trade-off in American market is positive only during crises, otherwise insignificant. Roggi and Giannozzi (2015) studied the liquidity risk effect on stock prices of financial and non-financial companies during crisis events over the period from 2008 to 2010. The empirical results indicated that investor is strongly and negatively related to illiquid stocks during crisis periods. Chiang et al (2015) found positive evidence to support the risk-return tradeoff between for all advanced markets (except Germany), all Asian markets, and Argentina in Latin American markets. In addition, the positive risk-return relationship was found to be more pronounced during the tranquil period Chiang et al (2015). Wu and Lee (2015) examined whether the intertemporal risk-return relationship in the U.S. stock market varies with bull and bear markets. They concluded that the risk-return relationship is significantly positive in bull markets, but significantly negative in bear markets. Booth et al (2015) studied the nature of the momentum-reversal phenomenon in U.S. stock returns from 1962 to 2013. The empirical results showed that risk dominates momentum’s initial effect. Consequently, stock returns move in the opposite direction. In addition, this relationship is related to institutional trading. Dewandaru et al (2015) examined the systemic risk, return, volatility, and correlation in Islamic indices in wavelet domain. They found equal returns with lower risks at higher scales for some Islamic indices.

The purpose of this chapter is to compare the risk-return relationship in Europe and the Middle East and North Africa (MENA) region during the 2008 international financial crisis. Indeed, the accurate characterization of the relationship between risk and return in financial time series data during a crisis period is critical for risk management and international capital allocation. Therefore,
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