Macroeconomic Determinants of the Behavior of Dhaka Stock Exchange (DSE)

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ABSTRACT

Many past studies documented a strong evidence of a linkage between stock prices and macroeconomic activities across different stock markets and time horizons. However, most of these studies have focused on developed economies and highlighted the impact of either domestic variables or a few global factors. In recent times, the impact of global macroeconomic factors upon stock returns has garnered a lot of interest due to globalization. The aim of this paper is therefore to examine the combined influence of global and domestic macroeconomic factors upon stock returns and extend this relationship to an emerging market of Bangladesh. Using Vector Autoregression (VAR) model, findings indicate a considerable impact of money supply for the stock returns of Dhaka Stock Exchange (DSE). Additionally, an insignificant influence of the world price index is observed, which implies a complete segmentation of DSE from the global financial markets. Finally, the study highlights regulatory changes and policy-making decisions from the perspective of Bangladesh.

KEYWORDS


INTRODUCTION

Numerous empirical studies like Fama (1981; 1990), Chen, Roll and Ross (1986), Mukherjee and Naka (1995), Mookerjee and Yu (1997), Humpe and Macmillan (2009), Buyuksalvarci (2010), and many others have provided substantial evidence that movement in stock returns are highly sensitive to changes in macroeconomic variables. Most of these studies have largely focused on the developed economies in support of the argument that macroeconomic variables are excellent candidates for determining returns because changes in these measures will affect firms’ cash flows and influence the risk-adjusted discount rate (Gunasekarage et al., 2004). The presence of this evidence has thus made the relationship between stock returns and macroeconomic variables a subject of growing interest over the last few decades.

Previous studies like Kwon and Shin (1999), Ibrahim and Aziz (2003) and Tan et al. (2006) argued that returns on stocks reflect underlying real economic activity and that the stock market of a country is totally segmented from other stock markets across the world. As such, a relationship between stock returns and only domestic macroeconomic activities can persist in the long run. However, since domestic variables can be influenced by external macroeconomic factors like stock price movements in the global economy, international interest rates that govern capital flows, world oil prices and such others, movements in the global variables can have a gradual impact on the stock returns as well. Accordingly, some global macroeconomic factors were taken into account by Brown
and Otsuki (1993) and Buckberg (1995) and their findings claimed that stock markets of few developed
economies are perfectly integrated due to the trend of globalization.

However, compared to the developed economies, the impact of globalization has influenced
the emerging markets of the developing economies to a larger extent. This is because emerging
stock markets in developing economies are smaller in size and relatively illiquid. As such, this
growing influence of foreign investors and international investments may not tie the movement in
stock returns to domestic macroeconomic factors. Moreover, such markets have volatile prices and
supernormal yields, as a result of which they are less static and may be partially segmented from
the global capital markets. Following this evidence, there is a strong potential that both domestic
and global macroeconomic variables can impact the stock returns in emerging stock markets of the
developing economies.

This paper thus aims to complement the literature, by extending this presumed relationship
between stock returns and a set of pre-determined domestic and global macroeconomic variables,
to the emerging stock market of Bangladesh. Evidence for this relationship are drawn in this study
through the research methods of Vector Autoregression (VAR) and by applying empirical tests like
Johansen cointegration and Vector Error Correction (VEC) estimates. Empirical findings of this
research will provide further insights into understanding the underlying macroeconomic factors
that can significantly impact the stock returns of a selected stock market of Bangladesh. This study
can also assist various academicians, researchers, policy makers and particularly the government of
Bangladesh to consider the influence of macroeconomic factors when regulating the stock market,
its returns and its policies.

LITERATURE REVIEW

Studies on the linkage between stock returns and macroeconomic variables are motivated by the
use of various asset pricing specifications, based on which a number of empirical research has been
conducted in both developed and emerging economies across the world. As such, the current study
highlights the notable empirical studies in this regard, followed by the research platform of the study
and finally, the theoretical background of the proposed constructs has been discussed to determine
the gaps for the study.

Empirical Studies on Developed Economies

Notable studies regarding the relationship between stock returns and macroeconomic variables mostly
center on the findings of Fama and Schwert (1977), Fama (1981; 1990), Chen, Roll and Ross (1986),

Fama and Schwert (1977) conducted a time-series analysis on the NYSE stocks and studied the
expected and unexpected components of the inflation rate during the 1953-71 period. From their
empirical study, a negative relationship is observed to exist between the stock returns and inflation
rates. Fama (1981) then documented evidence of a strong positive relationship between stock returns
and macroeconomic factors such as capital expenditures, real rate of return on capital and output by
conducting a time-series analysis of the NYSE stock returns. Findings from this study also reported
consistent evidence of a negative relationship between stock returns and inflation rates.

Built on this study, Chen, Roll and Ross (1986) conducted both cross-sectional and time-series
regressions on the NYSE stocks over the period of 1953-83. Strong positive correlations are found
from this study between the stock returns and industrial production index, changes in risk premium
and yield curve, and expected and unanticipated inflation. In fact, the macroeconomic-based risk factor
model developed in conducting this study is particularly influential in majority of the studies that
later investigated this link between stock returns and macroeconomic variables. Empirical evidence
by Fama and French (1989) on the NYSE stocks and corporate bonds over the period 1927-87,
further revealed that dividend yield, default spread and term spread can explain cross-sectional and
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