CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY, ISLAMABAD

Impact of Monetary Policy on Volatility of Stock and Country Credit Rating

by

Amen Razzaq Butt

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This thesis is dedicated to my Parents whose categorical encouragement and prop up made it possible for me to finish the work.

CAPITAL UNIVERSITY OF SCIENCE & TECHNOLOGY

ISLAMABAD

CERTIFICATE OF APPROVAL

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May Allah bless them all.

Abstract

The aim of this study is to explore the impact Monetary Policy on volatility of stock.it further explains the impact of Monetary policy and Macro-economic variables (control of corruption, current account balance, export growth rate, GNP per capital, Interest rate, net Foreign debt, propensity to invest, Rule of law) on country credit rating of NEST and BRICS countries. The sample period of this study is July 1997 to December 2015. Countries included in this study are Nigeria, Mexico, Pakistan, India, Srilanka, Indonesia, Brazil, Vietnam, Philippines, Egypt and China. The finding of the study indicates that rise in interest in Mexico and Brazil result in increase in the volatility of stock. Whereas in India, china, Philippine, Srilanka, Pakistan, Vietnam and Indonesia increase in interest rate leads to decrease in volatility of stock. Egypt shows an insignificant relationship between the interest rate and volatility is observed in Egypt. Increased in volatility increase the uncertainty in stock market which effect the country credit rating. Market volatility has a negative relationship with country credit rating. The impact of macroeconomic variable on country credit is treated by the coefficient model. The impact of macroeconomic variable on country credit rating we use common effect model. The result of Provide GNP Per Capita, Propensity to invest and Export Growth Rate has significant impact on country credit rating.

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Chapter 1

Introduction

In recent years the importance of country credit rating has increased dramatically.Soverign credit ratings are assessment that a borrower may default on its obligations. Many international investor rely on country credit rating before making any decision of investment in specific country. The rapid growth of developing nations in 1970's and increase in number of rescheduling of debt in the early 1980's country risk has become an important topic of concern for the financial determinants.

Credit rating of the country is influenced by various factors which include macroeconomic dynamics as well as the market specific facts. Sovereign credit rating is a ranking criteria defined by rating agencies in term of countries economic and financial obligations. It has very important role in defining the country access to global debt market. The credit rating for a country links to the political, economic and financial performance of that country from the point of country ability to pay back its loan. The rating agencies use quantifiable and qualitative sector (economic, social, and political) to allocate a credit rating to a debtor.

There are the various variables which affects the country credit rating. In theory, it states that political instability reduces the country ability to pay which effects the country credit rating. It is vital to have some sustainable economic growth in the economy. Poor countries have less tendency to reduce its consumption. Low GNP per capita countries are less capable to resolve debt service problems by

applying austerity programs. The larger reserves to imports ratio provides that the greater reserves are available to deal the external debt and thus probability of non-payment of debt is low.

This study develops the link between Stock market volatility on credit rating which is previously. Generally credit rating is determined by country specific stock market development. Stock market variation is ignored in determining the country credit rating. Development in stock market has positive effect on growth for higher level of per capita GDP, advanced levels of legal development and lower levels of country credit risk. This specifies that the growth of country ultimately increase the credit rating of country. Country should liberalise their stock market for the development and growth of the country.

Eglected by the rating agencies while rating the country. When the prices of stock changes in any country the volatility of stock increases or decreases which causes the uncertainty in country. When an investor wants to invest in any country, he/she not only consider the economic condition of country but also the takes the insight of market when volatility increases, the risk of particular stock increases ultimately which influence an investor decision.

In past few decades, the importance of impact of volatility of stock on country credit rating has been increased and the main task is to provide information on which the investor takes their decision. These agencies usually plays more important role then the government. After the financial and economic crises in 2008 and 2009, volatility has increased remarkably. Policy makers looks at the agencies as a potential basis contributing to increase the volatility in financial market. Volatility in stock increases, it increases the financial instability level and its unpredictability, later increase in levels of volatility are linked with greater risk for market contributors. However an increase in volatility and their perceived risk have same effects about the macroeconomic uncertainty by increasing output volatility. Credit rating have significant impact on stock market volatility. In past few decades the importance impact of volatility of stock on country credit rating has been increased and the main task is to provide information on which the investor takes their decision. These agencies usually plays more important role then the

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Stock market volatility has a great interest for both policy makers and market participants others are more concerned about the effect of volatility on stock market.

Any shift in monetary policy plays an important role in the pricing of financial instruments. The expectation of financial market players are measured on the basis of the two fundamental hypothesis. The first is adaptive expectation which

only rely on past information to find the bond or stock market value. The second hypothesis is based on past and current available information and also on understanding of market behaviour.

Any change in Money supply, exerts a large impact on both output and prices. There is significant relationship between the stock prices, the monetary policy and the economic growth. Any change in monetary policy in expansionary phase can lead to increase in financial wealth and ultimately its consumption increase, which leads to increase in economic growth of country. If a country economic growth is increasing day by day it exerts a significant impact on credit rating of country. In case of unexpected shocks in money supply, a monetary policy in tighter phase results increase in interest rates which leads to the lower economic activity and thus it effects the country credit ratings.

1.1   Problem Statement

BRICS and NEST countries are emerging markets that has attracted the local and international investors. During last few years, in NEST and BRICS market, observed remarkable growth and high voltality.Therefore markets are normally influenced by regional, domestic and international dynamics. Such behaviour towards volatility of sock and country credit rating has serious concern and it needs investigation. Investor before investing in any country wants to know about the credit rating of country and their macroeconomic variable which one or other way effect the country credit rating. Thus the current study aims to investigate the impact of monetary policy on volatility of stock, how the volatility of stock effect the credit rating of BRICS and NEST countries.

1.2   Research Objectives

This study is aimed with the following objectives.

To provide the insight about the impact of monetary policy on volatility of stock market.

To provide insight about the impact of volatility of stock on the country credit rating.

To explore the impact of macroeconomic factors on country credit rating.

1.3   Research Gap

This study investigate the influence of monetary policy on the volatility of stock and how it effect the credit rating of Nest and Brisk countries as this area is less explained before.

1.4   Research Questions

Q1: What is the impact of monetary policy on volatility of market?

Q2: what is the impact of volatility of stock on country credit rating?

Q3: What is the impact of macroeconomic variable on country credit rating?

1.5   Significance of the Study

This study is helpful for policy maker, investor and academia. Investor can use the effective approaches against monetary policy and the stock market volatility. Through this study they can be able to know about the facts that influence rating of the selected countries. These can be helpful in better resource allocation. For economic policy maker, it helps them to understand about information related to the interest rates, returns and volatilities in stock so that they could be able to make effective policy to exhibit better economic outlook of the country. Policies can be formulated and executed to manage the volatilities of stock markets. For domestic fund manager, the change in interest rates and the volatility of stock prices can provide the advantage in predicting the behaviour of market reaction to change in macroeconomic scenario. For academic point of view this study is helpful for researchers to have in depth knowledge about the monetary policies,

stock volatility and the country credit rating of NEST and BRICS countries. They can also extend this literature in the said domain.

1.6   Organization of the Study

This study has been structured in Five Chapters as detailed below

Chapter no 1 includes the Introduction, Problem statement, Research objectives, Research Gap, and Significance of study. Chapter no. 2 includes the literature review. Chapter no. 3 includes Research Methodology. Chapter no. 4 includes Results and Analysis. Chapter no. 5 includes Discussion and Conclusions.

Chapter 2

Literature Review

2.1 Monetary Policy

Sourial and Shawky (2002) conducts an extensive research to explore the linkage between the monetary policy, volatility of stock and country credit rating. The study provides that boom in stock prices is associated with economic expansion which boosts the investor confidence towards companies' future, their productivity, and their future growth. Therefore overinvestment, overconsumption and overbrowning are recognised and transmuted into wealth effect. However in few circumstances, stock volatility may increase without any corresponding increase in the economic fundamentals during the period of stable and low inflation, especially when credit and monetary aggregates grows faster than the nominal output.

Any shift in monetary policy plays an important role in the pricing of financial instruments. The expectation of financial market players are measured on the basis of the two fundamental hypothesis. The first is adaptive expectation which only rely on past information to find the bond or stock market value. The second hypothesis is analysed by Muth and Lucas s in 1960s which is based on past and current available information and also on understanding of market behaviour.

Number of monetary policy indicators are there to explain the impact of monetary policy shift on the financial market behaviour. Their significance is subject to the

level in which the markets are investigated and those instruments are used which causes the shift.

Monetarists, Friedman, put emphasis that any change in Money supply, exerts a large impact on both output and prices. In late sixties, Tobin explains the stock prices and the monetary policy relationship and its impact on real economic growth by using his famous tobin's q theory. The study explains that there is positive relationship among the money supply and economic growth. In seventies, Modiliani argues that increase in monetary policy in expansionary phase can lead to increase in financial wealth and ultimately its consumption will increase. In case of unexpected positive shocks in money supply, a monetary policy in tighter phase results increase in interest rates that will further raise the money supply to prevent from inflationary pressures, and this phenomenon is called liquidity effect.

loannidisa and Kontonikas (2006) reports the monetary policy impact on stock return in thirteen OECD countries for the period of 1972-2002.The result specifies that shifts in monetary policy affects stock return considerably, as supported by the theory of monetary policy transmission through stock market. Monetary policy efforts to attain a set of goals that explains in terms of macroeconomics variable like real output, employment and inflation. The action of monetary policy are such as variation in discount rate of central bank have an indirect effect on variables and lags are involved in the mechanism of policy transmission. Financial market in wider sense are fast to incorporate the new evidence. Hence more and instant impact of modification in the instruments of monetary policy can be recognised by using financial data. To identify the relationship between the financial assets and monetary policy are important to improve the transmission mechanism of monetary policy since a changes in assets prices plays an important role in many channels.

Bernanke and Kuttner (2005) states that some spectator's views stock market as an supreme source of macroeconomics volatility to which legislators may wish to respond. Prices of stock reveals boom bust cycles and volatility which leads to constant deviation from their ultimate values that may be adjusted once, have a positive effect for the wider economy. Conferring to the discounted cash flows

model prices of stock are equivalent to the present values of estimated cash flows. The monetary policy thus play a significant role in defining the equity returns by changing the discount rate used by the members or by manipulating the members of markets of future economic activity.

Hofmann and Goodhart (2000) establish link between the asset price movements, credit aggregates, and growth in a major economies. It is connected to lower stock prices which gives the higher discount rates for the anticipated cash flow or lower future economic activity. In case of expansionary monetary policy, it is usually considered as a good announcement and these days are particularly related with the lower interest rate and increase in economic movement and larger profits for firms. So stock market members give importance to policies on the stance of the monetary authority as inferred by changes in indicators of central bank policy. Business press infers movements in asset price to monetary policy shifts, attributing for increase in stock markets to low interest rates.

Jensen,Mercer and Jhonson (1996) further explain the Fama and French(1989) by proposing the monetary environment effect on investors . Jensen et al (1996) study finds that in stock return predictable difference depends on monetary and business situations with expected higher stock returns in tighter monetary policy than in expansionary policy. The results indicate that asymmetric information between stock return and business condition can foresee the future stock returns only in the era of easy money period.

Qayyum and Qayum (2007) discuss the monetary policy and stock return relationship in Pakistan. The studies apply the different estimation techniques including Engle granger two step procedure and bivariate EGARCH method and reports that change in monetary policy will have a significant influence on the volatility of stock market. In theory, stock prices is effected by the monetary policy through the balance sheet and wealth effect channel as mentioned by the Bernanke, Gilchrist, and Gertler (1996), Gertler and Bernanke (1999) and Good hart and Hofmann (2000).The interest channel suggest that monetary policy in tighter phase increase the interest rate in which the cash flow of firm in future are capitalized which causes the stock price to decline. While ease in monetary policy increase, the economy

activity level overall and stock price return is positive as argued by Cassola and Morana (2004).

Qayyum et al (2007) states that there are many ways and channel, through which the economy is effected by the monetary policy. The traditional monetary policy transmission mechanism i.e. the money channel and credit have one common thing that they can easily work through the financial markets. Economist approve that price index of stock market is one of the important indicator in developed countries, which is affected by the rules of monetary policy. It indicates that relationship between the monetary policy and stock market is extremely important to take the advantage of useful insight of the transmission mechanism of monetary policy.

Bomfim (2001) discuss the news and pre-announcement effect on stock market in perspective of exposing the information to public of monetary policy decision and it also discuss the decisions of policy makers on actual interest rates affect stock market volatility. The results recommend that stock market have a tendency to be a moderately quiet, which shows that volatility is unusually lower on past days regularly scheduled policy announcement. The surprise component in these decisions in short run lift the volatility in stock market significantly, and significant surprises-higher than expected values of the target funds rate-tend to have a larger effect on volatility than negative surprise.

Zarea, Azalib and Habibullah (2013) examines that stock market volatility exhibit an asymmetric response to monetary policy over bear and bull periods in Asians countries when pooled mean group (PMG) is employed. Using the data from 1991 to 2012 result shows that in Monetary policy in contractionary phase (rise in interest rate) has a stronger effect on sock volatility in bearish market than bulls which are consistent with the expectation of finance constraints model.

Fernandez-Amador, Gchter, Larch Pete (2011) explains the role of monetary policy that how changes in policies by the European central bank (ECB) can affect the markets. Monetary policy in expansionary phase can increase the liquidity in German, Italian and French market. Monetary policy has influence on volatilities of the European index return. Result suggests that shanghai interbank offer rate, stock market and monetary market react differently to the changes of interest

rate and required reserve ratio (RRR).Decrease in R or RRR can bring a greater variation into stock and bring lesser variation into monetary market.

Belke and Beckmann (2014) applies CVAR model to explain the stock market in term of long run and short term in three emerging and five developing economies. The empirical finding determine that monetary policy impact on stock prices is very limited. Apart from japan no significant affect is identified.

Abouwafia,Marcusq and Chambers (2014) examine the impact of monetary policy and real exchange rate shocks on the performance of stock market of Oman, Saudi Arabia, Jordan and Egypt by using structural vector autoregressive model. Both in long and short run constraints applied to recognise the structural stocks. The heterogeneity of the results represents the Different characteristics of stock market and different frame work of monetary policy. Real stock exchange rate and monetary policy have an important impact on the prices of stock of the countries in short run that apply a relatively more flexible exchange rate and independent monetary policy. Tighter monetary policy leads to decrease in stock prices in all countries with different dynamics and magnitudes. Though fall in prices of stock is only statistically significant for Egypt and Kuwait.

Hung Tai (2016) states the price movements in different stock market state provide input of monetary authorities when they deciding monetary policy. The study reports that during bubbles in stock market (stock market crises), chartist's influences on policy decisions to the increase (lower) interest rate.

Papadamoua and Siriopoulos (2014) investigates that effect of formation of MPC (monetary policy committee) on the risk of interest rate which life insurance companies and bank face in UK.By applying GARCH-M methodology, The returns of stocks are modelled on the CAPM and the fama-french asset-pricing models, improved with interest rate risk factor . The result indicate that interest rate changes by bank of England the volatility and the stock return.

Bouakez, Essid, and Normandin (2013) investigates the three questions which are: does stock return react to monetary policy shock? ii) Does the monetary policy transmission mechanism is altered by the stock return. iii) Does monetary policy analytically respond to stock return? The study uses structural vector

auto-regression that reduces the limitations which is normally imposed by previous studies and find the shocks of monetary policy by manipulating the conditional heteroscedasticity of the structural innovations. The study reports that monetary policy and stock return relationship is much weaker as recommended by the previous studies.

Assefa, Esqueda, and Mollick (2016) examines the return of quarterly stock of 19 developing and 21 developed economies from period of 1999 to 2013.During this time period the stock return is 1.188% per quarterly in developed economies as compared to developing countries that report 4.220% per quarterly. By using dynamics panel, in developing countries the study finds statistically significant negative influence of interest rates on stock returns.

Sellin (2001) surveys on stock prices and monetary policy and conclude that there is positive influence of money supply on stock prices. Kurihara (2006) reports in his studies that when interest rates decrease during the Japanese quantative easing period not direct influence the stock market though stock market does effect the stock prices.

Tibebe, Omar and Varella (2016) uses quarterly stock return of 19 developing countries and 21 developed countries from 1999 to 2013 and report that quarterly stock returns of developed economies is 1.188% contrast to developing economies which is 4.220% and the finding of the study reports significant negative effect of interest rates on stock return in developed countries which is consistent with expected cash flows hypothesis.

Gospodinov and Jamali (2014) investigate the result of volatility in stock market to changes in monetary policy. By applying the vector auto regressive model, the finding show a significant stock returns and volatility to monetary shocks.

H1: Interest Rate has significant influence on volatility of stock.

2.2   Political Instability

Sovereign credit rating is a Sovereign credit rating is a valuation criteria defined by rating agencies in term of countries economic and financial obligations. It has very important role in defining the country access to international debt market. The evaluation of sovereign credit rating for a country links to the political, economic and financial performance of that country from the point of country ability to pay back its loan. The rating agencies uses quantifiable and qualitative variables (economic, social, and political) in order to give them a credit rating to a debtor.

Cantor and Packer (1996) states that an empirical literature has emerged that analyses the importance of the factors of sovereign credit ratings using historical data. Cantor and Packer (1996) report that single-year linear regression model with eight macroeconomic variables can describe more than 90% of the variability of the sovereign credit ratings for 1995. The study find a statistically significant effect on GDP growth variables, GDP per capita, inflation, external debt, the economic development and default history on rating.

Canuto, Santos and Porto (2012) analyses for the period 1998-2002, 66 countries by using a panel data analysis. The authors use sovereign ratings established by Moody's, Standard & Poor's emphasized that a high sovereign rating (which involves a low sovereign risk) is the result of high per capita income, high economic growth and a low government debt.

Allber (1980) states that Political instability can decrease the ability of a country to pay its debt.Cooray, Dzhumashev and Schneider (2016) reports a relationship between the corruption, public debt and shadow economy. The study explore countries over the period of 1996-2012.By using the ordinary least square (OLS), fixed effects, system generalized methods of moments (GMM) model and result provide that increases in corruption leads to increase the economy and public debt also.

Another study taken by the Brewer and Rivoli (1990) focus on impact of political instability and also test the effect of economic variables in determining the creditworthiness. The sample include highly indebted developing countries, the

creditworthiness indicator of country is mainly taken from the institutional investor, Euro money data. The explanatory variable are political instability and conflict and economic variables which are the current account to GNP ratios and external debt to GNP.The data on credit worthiness is for 1987. The result shows that the government system as a proxy for political stability is significant, and the other two variables which proxying the degree of political legitimacy and the degree of armed conflict are not significant.

H2: There exist a negative relationship between the Political instability and country credit rating.

2.3 Rule of law

Mauro (1995), Mo (2001), Tanzi & Davoodi (2002) literature proves that corruption discourages the investment and it reduces the growth and also limit productivity. Lambsdorff (2003) reports that country with higher corruption face higher inflation. Country credit rating report a positive significant trend with control of corruption. Because corruption reduces the country productivity which makes it hard for a country to pay back its debt on time.

The Friedman et al (2000) concludes that corruption is directly connected to the illegal activity of offices which leads to reduction in tax revenues. Similar findings are put forward by Johnson et al (1997) that argues that unofficial sector declines the ability of government to provide public goods to the official sector. Tanzi and Davoodi (2002) debate that corruption is linked to an increase in public expenditure.

Lee (1993) studies the effect of economic variables and credit rating. In a sample of 29 countries which have high debts, this study explain largely institutional investor data, with some estimates based on Euro money ratings. This study include three economic variables, the ratio of domestic of public debt to GDP, the ratio of external debt to GNP, Per capita GDP growth. Variables of debt service like the ratios of total debt to exports and reserves to imports. The study propose

that indicators of creditworthiness are described by the economic performance of the country rather than by their situation of politics.

Depken, LaFountain, & Butters (2007) concludes that how corruption badly influence country's ability to pay back its debt. Corruption influence sovereign creditworthiness through its impact on the size of the prescribed sector of an economy. The study ?nd that sovereign creditworthiness calculated by credit ratings, decreasing in Corruption. It follows from our benchmark estimates that Decrease in corruption by one standard deviation improves sovereign credit ratings by almost a full rating category. Soto (1989) and Johnson (1997) state the link between corruption and creditworthiness drives economic activity, such as investment and production.

Budik and Ezr (2015) study the impact of Corruption on economies of the selected countries economy. The finding of the study shows that increase in Corruption Perceptions Index increases the probability of sovereign default and decreases the country's competitiveness.

H3: There exist negative relationship between the country credit rating and corruption.

Allber (1980) states that in any country political instability can lessen the country capability to pay back its debt. The study consider two types of political instability indicator. According to Kaufmann et al., (2010) the level of confidence that agents has on quality of property rights, contract enforcement, crime violence, and courts. The study find a highly positive significant relationship between the country credit rating and rule of law.

Koubi (2008) states that the efficiency level of legal system and the quality of services provided by the law enforcement agencies and the government of country are linked to the Stable return on financial stock and the depth of financial market.

Hewko (2002) argues that transparent legal system reduce the transaction cost which attracts many foreign investors to invest in that specific country which increases the investor confidence level. When the investment increases in specific

country its credit rating become higher because now country has more ability to pay back its debt.

H3: There exist positive relationship between the Rule of Law and country credit rating.

2.4   Current Account

Current account balance is vital to have sustainable economic growth in the economy. Claude, cosset and joy (1991) states that current account balance is negatively linked to the probability of default since the deficit in current account mainly equals to the amount of new funding required apart from the capital amount provided by direct foreign investment.

Badr and khadrawi (2016) study the impact of macroeconomic variables on the sovereign credit rating (SCR) of Egypt and further examine the influence of investment environment on the SCR by applying the dynamic ordinary least squares (DOLS) method from the period started from 1990 to 2014. The results specify that GDP growth, fiscal balance, inflation, reserves, current account balance, public domestic debt, and the government effectiveness have important impact on the sovereign credit rating in Egypt.

H4: Current Account balance has significant impact on Country credit rating.

2.5   GNP Per Capita

Poor countries may have less capability to decrease its consumption than the richer one. Low GNP per capita countries are less able to resolve debt service difficulties by applying austerity programs.

Saka and Orhan (2015).study the determinants of sovereign debt rating represents the three main rating agencies, over the period of 1995-2005. By Using ordered response and linear models, their results show that any Changes in GDP growth,

GDP per capita, government balance and government debt have a short-run impact on a country's credit rating, while external debt, government effectiveness, default history, and foreign reserves are significant long-run elements.

Bulow and Rogoff (1989) state that the higher levels of developed countries can be less disposed to default on their foreign commitments because their economies are often significantly integrated with the world economy. So developed economies are mostly exposed to the creditor's lawful right to upset the trade or seize assets abroad.Accordig to the earlier studies on sovereign debt, the possibility of recourse to direct sanctions is an essential condition for sovereign lending.

Gaillard (2009) uses an ordered Probit model to check the association between more than a hundred economic and financial variables and regional government ratings. His study finds that three variables (the GDP per capita, default history of the sovereign issuer, and the net direct debt to operating revenue ratio of the local government) explain 80% of sub-sovereign ratings.

H5: There exist a positive significant relationship between the Gross National product (GNP) per capita and country credit rating.

2.6 Propensity to Invest

Cosset and Claude (1991) states that Propensity to invest variable explain a country's predictions for future growth. The reason to not paying its debt is decrease in function of propensity to invest as the cost of default increase with future output).

H6: There exist a significant positive relationship between propensity to invest and the country credit rating.

2.7 Reserve to Import Ratio

The larger reserves to imports ratio provides that the larger reserves are available to deal the external debt and thus probability of default chances will decrease. Obstfeld et al. (2010) provides that the addition of reserves is an indicator of

developing country's goals to raise the domestic financial system development, and to encourage the integration of system internationally, and facilitate to combat the "fear of floating".

Kondo and Hur (2011) propose a model in which holdings of reserves of an emerging countries are a reaction to their risk of foreign debt rollover. This empirical study based on theoretical schemes that tends to under forecast levels of reserves not only in emerging economies but also in China (Aizenman and Marion, 2003; Edison, 2003; Park and Estrada, 2009; Jeanne and Rancire (2011).

H7. There exist a significant positive impact of reserve to import ratio on the country credit rating.

2.8   Export Growth Rate

Conventially the earlier studies has discussed that countries with instable exports are more exposed to foreign exchange crises and less credit worthy. Eaton and Gersovitz (1981) study shows that smaller the default risk, larger will be the fluctuations in exports. The underlying logic is that the country with unstable exports are in more need of taking loans to smooth the consumption and are therefore encouraged to maintain its good credit record. Instability in exports as identified by instability of export earnings, that results from price volatility or volume, may have positive or negative effects on GDP growth. On the adverse side, it is assumed that increase in export instability exerts a harmful impact on private investment decisions, and adversely affects the efficiency of capital.

Haque, Kumar, Mark, & Mathieson (1996) investigates the period 1980 to 1993 to explore the economic determinant of credit worthiness of developing countries. The study find that economic fundamentals, inflation, growth, the ratio of the current account balance to GDP and the ratio of nongold foreign exchange reserves to imports, describe a variation in the credit rating. Increase in global interest which is independent of the domestic economic fundamentals rates, adversely affect the developing country credit rating. A country structure of its exports also get affected directly.

Dawe (1996) reports that instability in exports exert a negative impact on the growth of eighty- five countries. Love (1992) also finds that in causality analysis of 20 developing countries export and income instability have a negative relationship which effect the growth rate of subsequent countries.

H8: There exist significant Positive impact of Export Growth Rate on country credit rating.

2.9   Net Foreign Debt to Export

Ramamurti (1992) concludes that in African countries if a greater portion of revenue from export is used to pay the external debt, then very less amount of foreign exchange will be available for growth and industrial investment. This indicates that Investment and economic growth, and external debt servicing could have an inverse relationship.Feder (1980) report that export revenue and debt servicing have positive relationship because countries with export potential have a tendency to obtain more loans from foreign countries, to carry larger external debt and have a larger foreign debt servicing burden. Thus the positive connection between economic growth and export revenues may not be expected because export resources are directed to servicing external debt instead of investment.

Levy (1988) concludes that external economic growth and economic aid are positively interconnected. Islam (1992) resists that foreign resources, in highly aggregative form, do not show any positive contribution to economic growth in Bangladesh.

Fry (1989) state that foreign debt unharmfully influence investment and saving in developing countries.Levine and Renelt (1992) provide that the relationship between exports and economic growth indirectly study the connection between the trade and growth as well as the proportion of investment in GDP.

Greenidge, Drakes and Craigwell (2010) discover empirically the causal relationship between the external and sovereign rating by using the panel causality test for 32 developed emerging countries by using the data for the period of 1998 to

2008.The author concluded the bidirectional causality relation between sovereign rating and external debt. The study find that sovereign rating is one important factor that determine whether the lender provides the credit and interest rate.

H9: There exist a negative relationship between Net Foreign debt to export and country credit rating.

2.10 Country Credit Rating

Feder and Uy (1985) focus on large sample of 55 countries and use the large range of economic explanatory varaibles.The study applies logistic transformation to the sovereign creditworthiness rankings, which is followed by regression analysis. Nine economic explanatory variables are considered: the ratio of reserves to imports, the ratio of debt to GNP; terms of trade, GNP per capita, average export growth rate; GDP growth, concentration of exports, an oil exporter dummy; and a dummy for countries with debt-servicing difficulties. Their result show that all variables are significant.

Feder and Uy's (1990) also study the impact of variations in economic variables on sovereign creditworthiness in a simulation model of the economy. The result concludes that increase in rate of GDP growth, holding the export rate constant, enhance the credit worthiness rating. Whereas the higher growth rate requires heavier borrowing to provide resources for increased investment, which may reduce the creditworthiness in following periods. If there is increase in growth rate of exports it will significantly strengthen creditworthiness. For example if export growth rate increased by 1% it will increase the credit worthiness by approximately 5% and it reflects higher export growth rate. It reduces the borrowing requirement which leads to the lower ratio of debt to GDP and improve the sovereign creditworthiness further.

Norden and Weber (2004) examine price adjustment at, before and after announcements of rating by using methodology of traditional event study. If there is a new information in market due to credit rating, price should respond after an event of rating. On the other side it is also possible that credit rating only reflects those

information which is market already knows, which in result suggest that prices do not respond to the rating event at all. In this matter market price always react to the current firm news, however credit rating respond with a time lag or do not change at all due to practical reasons such infrequent reviews, or particular rating policies.

Chapter 3

Data Description and Methodology

3.1 Data Description

This study uses the lending rates as the proxy of monetary policy, daily data of stock market indices and the monthly data of country credit rating of NEST and BRICS countries include Nigeria, srilanka, china, Egypt, maxico, vaitnam, brazil, Indonesia, india, philipine and Pakistan. The data of lending rates is collected from IMF data base, stock indices from relevant stock exchange, macroeconomic variables from World Bank and country credit rating data from the S&P. A grouping of different quantifiable and qualitative variables (economic, social, and political) in order to allocate a credit rating to a debtor. The period of study is 01/07/1997 to 31/12/201.

3.2 Impact of Volatility and Macroeconomic Variable on Credit Rating

The impact of macroeconomic variables and volatility of stock on country credit rating is examined by using panel data. Initially the study uses the common co-efficient model as given below.

$$CR_{i,t} = \beta_0 + \beta_1 CA_{i,t} + \beta_2 CC_{i,t} + \beta_3 FD_{i,t} + \beta_4 GNP_{i,t} + \beta_5 GR_{i,t} + \beta_6 IMPi, t + \beta_7 invest_{i,t} \beta_8 \sigma_{i,t}^2$$
$$+ \beta_9 LAW_{i,t}$$

There is the possibility that intercept is country specific. Fixed effect model is applied. To decide between fixed effect and common effect model likelihood ratio test is applied. If f-statistic is significant it indicates that fixed effect model is appropriate than common effect model. Secondly Hausman test is used to choose between fixed effect and random effect model if the houseman statistics is significant it indicates that fixed effect model is more appropriate.

$CR_{i,t}$ = Credit rating "i" at time "t"

CC = Control of corruption

CA = Current account

GNP = Gross national product

GR = Export Growth Rate

FD = Foreign debt to export

RES = Reserve to import ratio

Invest = Propensity to invest

LAW = Law of country

3.2.1 Dependent Variable

Credit rating is used as dependent variable. Credit rating is generally analysed in Alphabet discussed below

Ratings	Weightage
AAA+	1
AA+	0.95
A+	0.9
AAA	0.85
AA	0.8
A	0.75
AAA-	0.7
AA-	0.65
A-	0.6
BBB+	0.55
BB+	0.5
B+	0.45
BBB	0.4
BB	0.35
B	0.3
BBB-	0.25
BB-	0.2
B-	0.15
CCC+	0.1
C	0.05

AAA+

Credit quality is highest because risk factor is small.

AA+, AA, AA-

It also has higher credit rating where protection factors are strong but because of economic condition risk is modest and slightly change from time to time

A+, A, A-

It has good credit quality where its protection factor are adequate, risk factor varies from change in economy

BBB+, BBB, BBB-

Credit quality is adequate as factors which protects are enough and reasonsable.in case if there is any change in the economy risk factor consider as a variable

BB+, BB, BB-

It seems like obligation like to be consider as factor of production have capacity of weakening in case if there is any change in economy.

B+, B, B-

Obligation seems to be fulfil if factor of production has capacity to have flexible in case if there is any change in the economy.in this category there is a chance of upward and downward movements.

CCC+

In this category there is high level uncertainty towards its obligation where factor of production is risky

C

Very risky.

3.2.2   Independent Variables

Political Instability: is measured by using two different proxies.

1) Control of corruption

2) Rule of Law

Control of Corruption data is taken from World Bank. It deals with public power and its use to get private benefits. It is hypothesised that there exist a significant positive relationship between the control of corruption and country credit rating.

Rule of Law data is taken from World Bank. It deals with agents who accept the procedures of society, property rights, the courts, and the police. It is hypothesised that there exist a significant positive relationship between rule of law and country credit rating.

Gross national product per capita is the proxy of economic growth. Its data is taken from the world bank.it is measured in term of GDP per capital growth annual. It is grounded on persistent local currency. GDP per capita is gross domestic product divided by midyear population. It is hypothesised that there exist a Positive relationship between Gross National Product per Capita.

Gross National Product Per Capita = Total GDP/Total Population.

3.2.3 Export Growth Rate

Export Growth rate is the proxy of Economic growth. Its services signify the importance of all goods and other market services delivered to the world. It covers transport, the cost of merchandise, shipping, , travel, insurance, , license fees, payments and other services, like construction, communication, , business personal, monetary information, , and services of government. It do not include investment income, benefit of employees and transfer payments. Its data is taken from the World Bank. Export Growth = $(\text{Exp}_t - \text{Exp}_{t-1})/\text{Exp}_{t-1}$ It is hypothesised that there exist a Positive relationship between Export Growth Rate and Country Credit Rating.

3.2.4 Net Foreign Debt to Export

Net Foreign Debt to Export is the Proxy of total debt services.it is measured as total debt service to export and goods services. Total debt service is the addition of primary repayments and interest essentially paid in cash, goods, or services on long term debt, interest paid on short term debt, and repayments (repurchases and charges) to IMF. Its data is taken from World Bank.

FD = Total Debt service/Export and good services

It is hypothesised that there exist a Negative relationship between Net Foreign Debt to Export and Country Credit Rating.

3.2.5 Current Account

Current account balance is the proxy of balance of trade. Current account balance is the addition of net exports of goods and services, net primary income, and net secondary income. Data is taken from World Bank. It is hypothesised that Current account has significant impact on Country Credit Rating.

3.2.6 Reserve to Import Ratio

Reserve to import ratio is the proxy of economic Growth. It is measured as total reserves divided by total inputs.

RES = Total reserves/Total inputs

It is hypothesised that there exist a Negative relationship between Reserve to import ratio and Country Credit Rating.

3.2.7 Propensity to Invest

Propensity to invest is the proxy of economic growth. Growth of any economy is measured by its real income to its citizen or any change in volume of its output.

INVEST = Real income/Total change in volume of its output.

It is hypothesised that there exist a no relationship between propensity to invest and Country Credit Rating.

3.2.8 Monetary Policy

Monetary policy is captured by using the interest rates. Interest rate is captured by using the lending rates. Lending rate is the bank rate that typically used to meet the short- and medium-term financing requirements of the private sector. This rate is usually distinguished agreeing to creditworthiness of debtors and purposes of financing. The condition applies on these rates differ by country. It is hypothesised that there exist a significant positive relationship between interest rate and Country Credit Rating.

3.2.9 Volatility of Market

Volatility is a measure of the dispersion of returns for a given security or market index. Volatility can be calculated by applying the standard deviation of returns from the market. Commonly, the more the volatility the riskier the market.

Volatility of Market=Standard Deviation of Stock Market Return.

3.2.10 Impact of Interest Rate on Volatility of Stock

The Role of interest rate in determining the volatility of stock is explained by through GARCH MODEL we use this equation.

$$\sigma_{i,t}^2 = \beta_0 + \beta_1 \mu_{i,t-1}^2 + \beta_2 \sigma_{i,t-1}^2 + \beta_3 IR_t$$

Where as

$R_{i,t}$ = Returns of country "i" at time "t"

$\sigma_{i,t}^2$ is the volatility of a specific regional market at time "t"

$\mu_{i,t-1}^2$ is the error term of a specific country

$\sigma_{i,t-1}^2$ is the lagged variance from a specific country.

IR_t = Interest rate of country at time "t"

Return of specific country estimated by daily market index whereas IR is provided through lending rate.

The term BRICS is first introduced in 2006 by Goldman Sachs.The countries included in BRICS are Brazil, Russia, India, China and South Africa. It is the group of the fastest Growing nations of the world.

Emerging and growth-leading economies (EAGLEs) is a group of important emerging market developed by BBVA Research. The EAGLE economies are projected to lead worldwide growth in the next 10 years, and to deliver key opportunities for investors. As part of the EAGLEs proposal, the EAGLEs' Nest is a second set of

countries. The EAGEs' Nest membership is subject to a yearly revision and can change according to forecasted economic performances.

Nest countries include Bangladesh, Brazil, China, Egypt, India, Indonesia, Iran, Malaysia, Mexico, Nigeria, Pakistan, Philippine, Russia, Turkey and Vietnam.

NEST and BRICS countries are emerging markets that focuses the local and international investors as well. During last few years, in NEST and BRICS market, observe remarkable growth and high volatility. Their markets are influenced by regional, domestic and international dynamics. Such behaviour towards volatility of stock and country credit ratings has serious concern and it needs investigation. Investor before investing in any country wants to know about the credit rating of country and their macroeconomic variable which one or other way effect the country credit rating. Thus the current study aims to investigate the impact of monetary policy on volatility of stock, how the volatility of stock effect the credit rating of NEST and BRICS countries. The countries included in the Study are Nigeria,Maxico,Pakistan,India,Srilanka,Indonesia,Vietnam,Philipines,Brazil,Egypt and china. The rest of the countries are not included due to unavailabity of data of different variables.

3.3   Data Description

The stock markets index include are as follows:

Countries	Markets	Index
Nigeria	Nigeria stock Market	NGE
Mexico	Mexican Bolsa Stock Exchange	MXX
Pakistan	Karachi Stock Exchange	KSE
India	Bombay Stock Exchange	BSE

Sri Lanka	Colombo Stock Exchange	CSE
Indonesia	Jakarta Stock Exchange	JKSE
Vietnam	Ho Chi Minh city stock exchange	VNINDEX
Philippines	Philippines Stock Exchange	PSEI
Brazil	Sao Paulo Stock Exchange	BVSP
Egypt	Cairo stock exchange	Xx:Dwej
China	Shanghai composite	SSEC

TABLE 3.1: Impact of monetary policy on volatility of stock and country credit rating:
DECSRIPTION OF THE EXPLAINATORY VARIABLE:

Variable Sign	Motivation	Expected
GROSS NATIONAL PRODUCT(GNP) PER CAPITA GROWTH	Poor countries are less flexible to reduce their consumption as compare to the wealthier countries. Low GNP per capita countries are less capable to solve its debt service complications.	+
PROPENSITY TO INVEST	Propensity to invest variable forecast a future growth of a country. The reason to default is a decrease in function of this variable as the future output is associated with the cost of default. Cost of default will increase with the future output.	+
Reserve To Import Ratio	The higher reserves are related to imports the more reserve are available there is less chance of probability of default.	+
Current Account Balance	Current account balance is negatively linked to the probability of default since the deficit in current account is largely equal to the amount of new financing required.	+

EXPORT GROWTH RATE	Traditionally literature has proved that countries having fluctuating export are more at risk of foreign exchange crises and are have less chances of default. But in difference E Eaton and GERSOVITZ (1981) conclude in his paper that countries having the volatile exports are frequent in taking borrowing for smooth consumption and hence more encouraged to keep a worthy credit record.	+
Net Foreign Debt to Export	High amount of net foreign debt to exports ratio country is more exposed to foreign exchange crises and with high chances of default.	-
Political instability	Political instability can decrease a countrys capability to service its debt (Allber 1980).	-
Interest Rate	A country with higher interest rate increases the cost of financing, which ultimately reduce the growth activity in country.so a country willingness to service debt can be reduced.	-

Chapter 4

Results and Discussion

4.1 Descriptive Statistics

Table 4.1 Reports the result of descriptive statistics of variable studied.it covers measure of central tendency mean, median and measure of discussion standard deviation skewness and kurtosis.

TABLE 4.1: Descriptive Statistics for the Macro-Economic Variable Period 1997-2015.

	CA $	CC %	FD %	GNP $	GR %	IMP $	Invest %	IR %	LAW %
Mean	22.47	36.47	17.69	132.76	27. 08	80.78	4.64	0.005	38.74
Median	1.47	36.03	14.45	3.49	23.68	33.90	4.93	0.00	39.28
Maximum	420.5	65.85	115.3	7924.6	89.77	821.5	14.19	0.88	61.24
Minimum	-920.0	5.87	0.49	-14.35	6.98	10.28	-13.1	9.42	10.2
Std.dev	138.4	14.19	16.43	980.1	15.71	117.7	3.31	0.06	12.43
Skewness	2.75	0.115	2.63	7.44	1.88	2.82	-0.84	13.07	-0.32
Kurtosis	27.07	2.23	12.86	56.62	7.06	13.67	7.21	172.00	2.475
Jarque-bera	4420.4	4.68	906.2	22454.6	222.8	1058.1	149.3	212033.4	4.99
Probability	0.00	0.096	0.00	0.00	0.00%	0.00	0.00	0.00	0.08

In the table 4.1 the Average account balance of sample countries is 22.47billion$. The average variation is observed as 138billion$ during the sample period. The maximum current account balance is for china that is 420.56billion$ in the year 2008.The maximum unfavourable current account balance for Pakistan in 1997 and it touches to -920billion$.The data is found positively skewed. The value of kurtosis is more than 3 indicates the Peaked of data. The Jarque-Bera statistics confirms that data is not normal.

Average control of corruption of sample countries during the period of 1997 to 2015 is 36.47%.The average variation is observed as 14.19% during the sample period. The maximum control of corruption is for Brazil that is 65.85% in the year of 1999.The minimum control of corruption for Nigeria is 5.87% in 2015. The data is found positively skewed. The value of kurtosis is less than 3 indicates the flatness of data. The Jarque-Bera statistics confirms that data is normal.

Average net foreign debt of sample countries during the period of 1997 to 2015 is 17.69%. The average variation is observed as 16.43 during the sample period. The maximum net foreign debt is for Brazil that is 115.3% in the year of 1999. The minimum net foreign debt for Nigeria in 2013 is 0.49%. The data is found positively skewed. The value of kurtosis is more than 3 indicates the peaked of data. The Jarque-Bera statistics confirms that data is not normal.

Average GNP of sample countries during the period of 1997 to 2015 is 132.76%. The average variation is observed as 980.1 during the sample period. The maximum GNP is for china that is 7924.6$ in the year of 2015.the minimum GNP is for Indonesia that is -14.35$ in the period of 1998. The data is found positively skewed. The value of kurtosis is more than 3 indicates that the peaked of data. The Jarque-Bera statistics confirms that data is not normal.

Average Expected growth rate in average of sample countries during the period of 1997 to 2015 is 27.08%. The average variation is observed as 15.71 during the sample period. The maximum growth rate is for Vietnam is 89.77% in the period of 2015.the minimum Growth rate is for Brazil is 6.98% in the period of 1997. The data is found positively skewed. The value of kurtosis is more than 3 that indicates the peaked of data. The Jarque-Bera statistics confirms that data is not normal. Average of reserve to import ratio of sample countries during the period of 1997 to 2015 is 80.78billion$. The average variation is observed as 117.7. The maximum reserve to import ratio for china is 821.15billion$ in the period of 2005. The minimum reserve to import ratio is for Pakistan that is 10.28billion$ in the period of 1998. The data is found positively skewed. The value of kurtosis is more than 3 that indicates the peaked of data. The Jarque-Bera statistics confirms that data is not normal.

Average propensity to invest of sample countries during the period of 1997 to 2015 is 4.64%. The average variation is observed as 3.331%. The maximum propensity to invest for china 14.19% in the year of 2007.The minimum propensity to invest for Indonesia that is -13.1% in the year of 1998. The data is negatively skewed. The value of kurtosis is more than 3 indicates that the peaked of data. The Jarque-Bera statistics confirms that data is not normal.

Average of interest rate of sample countries during the period of 1997 to 2015 is 0.005%. The average variation is observed as 0.06. The maximum interest rate for Nigeria is 0.88% in the year of 2009.The minimum interest rate is for Vietnam 9.24% in the period of 2005.the data is positively skewed. The value of kurtosis is more than 3 indicates that the peaked of data. The Jarque-Bera statistics confirms that data is not normal.

Average value of rule of law of sample countries during the period of 1997 to 2015 is 38.74%. The average variation is observed as 12.43. The maximum rule of is observed for India 61.24% in the period of 1999. The minimum rule of law is observed for Nigeria that is 10.2% in the period of 2015.the data is negatively skewed. The value of kurtosis is less than 3 indicates that the flatness of data. The Jarque-Bera statistics confirms that data is not normal.

4.2   Reports the Result of Correlation Analysis

The objective of correlation analysis is to capture the multicollinearity among the variables.

TABLE 4.2: Correlation Matrices.

	CA	CC	FD	GNP	GR	IMP	INVEST	Volatility of stock	LAW
CA	1.000								
CC	0.303	1.00							
FD	-0.06	0.34	1.000						
GNP	0.22	0.09	-0.11	1.00					
GR	-0.05	-0.15	-0.33	-0.02	1.00				
IMP	0.23	0.26	-0.082	-0.08	-0.15	1.000			
INVEST	0.19	-0.00	-0.38	0.10	0.18	0.15	1.00 -		
Volatility of Market	-0.00	-0.10	-0.07	-0.01	-0.03	-0.02	0.12	1.000	
LAW	0.23	0.69	0.02	0.03	-0.032	0.29	0.19	-0.16	1.00

Control Of corruption is highly correlated with rule of law with value 0.697461.In other case no significant Correlation is observed. Thus it can be calculated that No problem of multicollinearity exixts.The VIF test also confirm the same.

4.3 Estimation of Volatility of Market by using GARCH MODEL

Table # 4.3 represents the impact of monetary policy on volatility of market captured through GARCH model. The interest rate is the proxy of monetary policy and it is captured by using the lending rates.

TABLE 4.3: Impact of Monetary Policy on volatility of Market.

Country name	C	ARCH	GARCH	IR
India	-0.00000356	.053	0.93	.016
Z statistic	(-5.39)	(25.47)	(387.8)	(7.051)
Indonesia	1.770000	0.062	0.930	-0.0004
Z statistic	(15.857)	(31.671)	(483.42)	(-1.898)
Srilanka	0.000152	0.1023	0.8753	-0.5544
Z statisic	(10.69)	(20.2795)	(183.554)	(-10.642)
China	0.00010	0.12265	0.5226	-0.0014

Z statisic	(13.931)	(11.09299)	(18.057)	(-60.650)
Vaitnam	2.68000	0.242	0.8599	-0.034
Z statisic	(62.0662)	(13.343)	(413.10)	(-8071.79)
Pak	2.670000	0.0869	0.8997	-0.0000035
Z statisic	(25.159)	(30.603)	(348.27)	(-0.6457)
Brazil	.000000017	0.0558	0.9279	0.0030
Z statisic	(-0.309)	(24.608)	(289.871)	(6.3146)
Philipine	0.0000039	.5377	0.4905	-0.00014
Z statisic	(91.56275)	(57.1147)	(118.97)	(-3.4704)
Maxico	.00000000448	0.56801	0.9241	0.0102
Z statisic	(-0.4162)	(23.527)	(300.212)	(12.4379)
Egypt	0.133917	0.1397	0.8672	-378.847
Z statisic	(1.088086)	(18.3875)	(175.4002)	(-1.0858)

GARCH captures the persistence of volatility whereas ARCH term captures the input of past price behaviour on volatility. Result indicates that if the interest increase in Mexico and Brazil it will also increase the volatility of stock. Whereas in India, china, Philippine, Srilanka, Pakistan, Vietnam and Indonesia increase in interest rate leads to decrease in volatility of stock. Egypt shows an insignificant relationship between the interest rate and volatility of stock.

4.4 Impact of Macroeconomic Variables on Country Credit Rating

Table # 4.4 reports the impact of macroeconomic variable on country credit rating.

TABLE 4.4: Common Coefficient Model.

VARIABLE	COEFFICIENT	T-STATISTICS	PROB
C	0.514433	16.26003	0.0000
CA	-1.26E-07	-0.002271	0.9982
CC	0.000842	0.905788	0.3664
FD	-0.000734	-1.356550	0.1768
GNP	1.62E-05	2.195381	0.0295
GR	-0.001144	-1.982560	0.0491
IMP	-6.68E-05	-1.020450	0.3090
INVEST	0.008693	3.685848	0.0003
IR	0.005102	0.048838	0.9611
LAW	0.001279	1.516356	0.1314
Adjusted R squared	0.269345		
F-statistics	6.008739		
Prob(F-Statistic)	0.000000		

Common coefficient model is estimated that Intercept is same for all cross section and time series. This assumption may not be true.so fixed model is applied.

EQUATION: $CR_{i,t} = \beta_i + \beta_1 CA + \beta_2 CC + \beta_3 FD + \beta_4 GNP + \beta_5 GR + \beta_6 IMP + \beta_7 invest + \beta_8 \sigma^2 + \beta_9 LAW$

4.5 Impact of Macroeconomic Variable on Country Credit Rating

Table # 4.5 reports the result of Fixed Effect Model used to explain the impact of macroeconomic variable on country credit rating.

TABLE 4.5: Fixed Effect Model

VARIABLE	COEFFICIENT	T-STATISTICS	PROB
C	0.514433	16.26003	0.0000
CA	-1.26E-07	-0.002271	0.9982
CC	0.000842	0.905788	0.3664
FD	-0.000734	-1.356550	0.1768
GNP	1.62E-05	2.195381	0.0295
GR	-0.001144	-1.982560	0.0491
IMP	-6.68E-05	-1.020450	0.3090
INVEST	0.008693	3.685848	0.0003
IR	0.005102	0.048838	0.9611
LAW	0.001279	1.516356	0.1314
Adjusted R squared	0.269345		
F-statistics	6.008739		
Prob(F-Statistic)	0.000000		

4.6 Impact of Macro-Economic Variable on Volatility on Country Credit Rating

Table # 4.6 represents the result of Random Effect Model

TABLE 4.6: Random Effect Test.

	COEFFICIENT	T-STATISTICS	PROB
C	0.378578	5.381539	0.0000
CA	-7.27E-05	-1.342220	0.1815
CC	-0.001907	-1.919003	0.0568
FD	9.90E-05	0.159621	0.8734
GNP	3.54E-06	0.563129	0.5742
GR	0.001080	0.907650	0.3655
IMP	-0.000158	-2.520706	0.0127
INVEST	0.001365	0.596698	0.5516
Volatility of Market	-0.022531	-0.257987	0.7968
LAW	0.005847	4.038070	0.0001
Adjusted R squared	0.510256		
F-statistics	10.01230		
Prob (F-Statistic)	0.000000		

The explanatory power of Fixed Effect Model is 22.45% and value of F statistic is significant which shows that all variable is not equal to zero.

<center>TABLE 4.7: Huasmen Test</center>

	STATISTICS	PROBABILITY
FIXED EFFECT TEST	90.986900	0.0000
RANDOM EFFECT TEST	105.101041	0.0000

To decide between fixed effect and common effect model likelihood ratio test is applied the result of the test are significant which indicate that fixed effect model is more appropriate than common effect model whereas Hausmen test is used to choose between fixed effect and random effect model. The hausmen statistics is significant therefore it is finalised that fixed effect model is more appropriate.

4.7 Discussion

The study provides a significant relationship between the GNP per capita and country credit rating. In empirical studies, Claude and Roy (1990) report that richer countries have more capability to reduce its consumption than poor countries. Higher GNP per capita countries may be able to resolve debt services problems that increases the credit rating of a country. Same is the case of lower GNP Lower GNP per capita countries may be less able to resolve debt services problems by applying austerity programs that decrease the credit rating of a country.

The study reports a significant relationship between the propensity to invest and country credit rating. This variable measure a country predictions for future growth. Typically, Growth increases when income increases, and decreases when income decreases. The reason to default is reducing the function of the propensity to invest since the cost of not paying its debt increases with the future output. Lenders favour countries that borrow to invest over those who borrow to consume. The main importance of this evidence is that, from a policy point of view, borrowing countries that consume all the proceeds of external funding risk being down rated and paying a higher cost of future credit

The study reports a significant relationship between current export growth rate and country credit rating. Yler (1981) conclude that export performance is important, along with capital formation, in explaining the intercountry variance in

GDP growth rates.it is obvious that when export rate of any country increases, It will ultimately increase the country reserve which increase the credit rating of country as well.

The study reports an insignificant relationship between the country credit rating and corruption. The empirical studies shows that if the corruption is not properly controlled, it will decrease the credit rating of country (Depken, LaFountain, & Butters, 2007).

The study reports insignificant relationship between current account balance and country credit rating. Whereas the empirical studies shows that higher amount of deficit in current account during the pre-crises period leads damaged banking system and country creditworthiness (Lane and Milesi-Ferretti, 2011).

The study provide the no significant relationship exist between volatility of stock and sovereign credit rating. Volatility measures the uncertainty in specific country. If the uncertainty in a country increases it will increase the risk of that specific country. So in any country increase in risk leads to decrease their credit rating. Whenever investor want to invest in specific country he not only consider the country economic condition but also consider its stock prices as well. If the uncertainty in prevailing country regarding stock increases it will eventually effect the investor's decision.

The study reports insignificant relationship between the net foreign debt and credit rating. Whereas empirical studies shows that a country with a high net foreign to export ratio is more exposed to the crises of foreign exchange and more likely to default.

The study further reports an insignificant relationship between the Reserve to import ratio and country credit rating (Aizenman and Marion 2003, Edison 2003, Park and Estrada 2009, Jeanne and Rancire 2011). The larger reserves are available, the country is more able to service its external debt and probability of default is decrease.

The study also reports an insignificant relationship between the rule of law and country credit rating. In any country, instability in politics can reduce the country

ability to pay back its debt (Allber 1980). But in Pakistan no such relationship is observed during the sample period.

Chapter 5

Conclusion

5.1   Conclusion

This study addresses the link among monetary policy, volatility of stock and country credit rating in BRICS and NEST countries.

First the impact of monetary policy on volatility of stock is examined. Economies have several channel and path through which monetary policy can affect the activities of economy. Many economist have consensus on this that price index of stock market is one of the important factor in developed economies which can be effected by rules of monetary policy. This indicates that stock market and monetary policy relationship is very essential to take the advantage of insight of transmission mechanism of monetary policy. This study addresses the linkage between the volatility of stock market and the monetary policy in NEST and BRICS countries by using the GARCH Model. The result indicates that stock market reacts to any changes in the monetary policy.

The study indicates that if the interest increase in Mexico and Brazil it will also increase the volatility of stock. Whereas in India, china, Philippine, Srilanka, Pakistan, Vietnam and Indonesia decrease in interest rate leads to decrease in volatility of stock. Egypt shows an insignificant relationship between the interest rate and volatility of stock.

In case if the interest rate increases it will increase the cost of borrowing of companies. Means their debt expenses will increase in future by cutting down the revenues which indicates that estimated amount of future cash flow may drop. This ultimately decrease the values of company stock. With a lower expectation growth rate investor may show his interest towards the company stock, which makes the stock less desirable.

The decrease in interest rate reduce the cost of borrowing that makes the loan cheaper which ultimately increases the spending .This increases the company profit by making it possible for them to invest in their businesses and making more money and thereby making more profit. Increasing profits may increase the possibility of company giving out more dividends to share holder. Thus increasing profits may lead to investors increasing the share price and thus the share market may move up.

Government should adopt the supportive monetary policy to make the economy perform better. Increase in interest rates and decrease in interest rates in both cases may affect the stock market. In lowering the interest rate consumer spending power increases which causes the inflation to increase. Which only increase the spending level of a consumer rather than increasing their living standards. It also decrease the saving level of a person.it is also harmful for those whose earning is only from saving. In case of increase in interest rates it only will benefit to some users like banking sector and insurance companies.so Government should adopt those rates which is equally beneficial for every person and economy of the country and also helps economy to perform better.

The 2nd thing that is discussed is the role of volatility of stock in explaining the country credit rating. Stock prices movements effect the credit Rating.Fama (1970) reports that financial markets are efficient and efficient markets are those where "at any time security prices completely reflects all information.so if the news about the particular stock is not favourable it causes the uncertainty in stock prices which will directly affect the rating of country. The importance of country credit rating has been increased and their main task is to provide information on which the investor takes their decision. These agencies usually plays more important role

then the government. After the financial and economic crises in 2008 and 2009, volatility has increased markedly. Policy makers looks at the agencies as a potential source contributing to increase the volatility in financial market.as volatility in stock increases, it increases the financial instability level and its unpredictability, since increase in volatility levels are linked with greater risk for market members. However an increase in volatility and supposed risk have same effects related to the macroeconomic insecurity by magnifying output volatility.

The 3rd thing is impact of macro-economic variables on country credit rating. In this study nine variables have taken by using the fixed effect Model, among them the result of three variables are significant which includes Gross national product, Export growth rate and Propensity to invest which shows that Gross National Product measures the economic growth. When GNP of country increases it means that there is some positive activity is going on in country. Which leads to increase the economic growth of country. If a country is economically strong it's easy for them to pay back to its debt that leads to increase the country credit rating. Markets are very sensitive to the threats to economic growth and the prosperity of country, and as a result of this they react quite sharply to the tension which is prevailing in market.so any uncertainty concerning future of economic policy, it is likely to unfavourably affect investment and therefore, physical capital accumulation.

Same is the case with Export Growth rate.it measures the growth rate. Countries having fluctuating exports are more risk of foreign exchange crises and have less chances of default.so the countries with higher exports growth rates indicates the greater economic activity which leads to increase the credit rating of country. Propensity to invest variable explain a country's predictions for future growth. The reason to not paying its debt is decrease in function of propensity to invest as the cost of default increase with future output.

This study also give information to manager, Regulator and investor. Manager may use this information as it is necessary for him to have a closer look at surrounding. If he has a proper information about the stock prices, political stability

monetary policy of specific country he can make a better decision for the company which ultimately increase the wealth of company and shareholder too.

For investor he can easily decide which country is more suitable for his investment. Their credit rating, political stability, rule of law is suitable for his investment.is this specific country is reliable enough to give back his amount in the form of healthy profit.

For regulator implementing the policies one should must have the information about the political condition of country their credit rating and rule of law. Regulator job is to maintain the market variation. When there is a variation in market it will affect the credit rating of country. So regulator must have knowledge about the market so that he can give the right information to the investor.

5.2 Future Direction

The study focused on BRICS and NEST countries. Which are the emerging economy in world. In future large set of countries may be exceeding and researcher can also research on it by selecting the developed countries.

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