CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY, ISLAMABAD

Impact of Macroeconomic Variables on Stock Markets: An Evidence from Emerging and Developed Markets

by

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This work is dedicated to my beloved parents who supported me, encourage me, and prayed for me and to my respected supervisor Dr. Jaleel Ahmed, who has been a constant source of inspiration.

CERTIFICATE OF APPROVAL

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Abstract

This study revolves around the analysis of the influence of macro-economic variables on to the stock markets of emerging and developed economies. Secondary data is used for this research process. The data of stock prices is extracted from the stock exchanges of the respective countries. The stock prices are used to calculate the stock returns. Selected independent macro-economic variables' data is taken from the website of International Financial Statistics. The time period of the collected data is from 2003Q1 to 2018Q4. Hypotheses are tested to figure out whether there is any significant linkage between stock returns and macro-economic variables. In order to test this relationship, Regression Analysis is employed. The results indicate that exchange rate, interest rate and inflation growth have significant linkage with the stock returns. Stock return's relationship with Industrial growth is not significant.

Keywords:Inflation growth, Stock returns, Stock Market, Macroeconomic variables, Industrial Growth, Exchange rate, Interest rate.

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List of Abbreviations

APR	Annual Percentage Rate
ARDL	Autoregressive-Distributed Lag
ASEAN	Association of Southeast Asian Nations
ASX	Australian Stock Exchange
CPI	Consumer Price Index
CSR	Common Stock Returns
D&S	Demand and supply
FCFs	Future Cash Flows
FMs	Financial Markets
IG	Industrial Growth
INF	Inflation Growth
IP	Industrial Production
IPI	Industrial Production Index
IR	Interest Rate
KLSE	Kuala Lampur Stock Exchange
KSE	Karachi Stock Exchange
MS	Money Supply
NEER	Nominal Effective Exchange Rate
PSX	Pakistan Stock Exchange
REER	Real Effective Exchange Rate
S&P500	Standard and Poor 500
SI	Stock Index
SM	Stock Market
SMI	Stock Market Index

SP	Stock Price
SR	Stock Return
USD	US Dollar
VAR	Vector Auto Regression
VECM	Vector Error Correction Model
XR	Exchange Rate

Chapter 1

Introduction

1.1 Theoretical Background

Economic fundamentals influence on stock returns has been a debating issue for a long time among numerous professionals. According to EMH introduced by Fama (1970), in an effective financial market, the information regarding the fluctuations in macro-economic variables is completely reflected in current stock price and therefore, investors cant get abnormal profits in these markets.

Ross introduced the Arbitrage Pricing Theory in 1976 that studied the linkage between some macro-economic variables and SP. As indicated by, Chen and Ross in 1986 individual stock are influenced by expected/predictable or unexpected/ unpredictable factors. They are certain of the fact that, greatest amount of return that is realized by the investors is the outcome of unexpected events and the mentioned factors are linked with universal economic conditions.

Effective financial markets play a significant part in the attainment of the required economic growth in emerging as well as developed economies. Different firms take money loans from such markets and at times they sell out their stocks in these markets for financing or funding their investment ventures. This stimulates the growth. This shows the significance of the FMs and the strong connection between economic development & financial development. Economies which invest money often attract policymakers as well as market participants toward them.

This consists of stock market, which is known for being a vital indicator of economic advancement of any economy.

Stock markets growing importance in the recent times has unlocked a new door for studying linkage of macro-economic variables with SM returns. When the SMs came into existence they made the shares trade easier. The D&S forces of shares decide the rate/price at which it will be traded. SMs play an imperative role in expanding the economy. Zulkernine, Isah, and Shah (2019), stated that the advent of SM has opened an alley for investing in numerous funds for example, mutual funds, and index funds etc. This provided investors a chance to invest in these profitable funds according to their risk-taking natures.

The worth of SM is extremely well known and this worth is shown in investors perceptions about SMs. The investors vigilantly watch the complete/general performance of SMs before investing.

Unlike the well-established SMs of developed/forward-looking economies, the SMs of developing countries started to expand at a faster pace only in the past two to three decades. Even though innumerable attempts have been made to stabilize and expand SMs, the evolving economies for instance are considered to be the most volatile SMs (Rangel & Engel, 2005). In addition to this, the SMs of developing economies are sensitive to the issues i.e. fluctuations in the economic activities, variations in the universal economic as well as the political environment, and also the variations in other macro-economic variables.

A number of researches can be seen that indicate and explain the linkages b/w the macro-economic factors and SM performance in various economies. Fama & Gibbon (1982) figured out that, expected returns on the bills and expected rate of inflation growth are negatively related. According to Hamao (1988) INF has a significant effect on the Japenese SM. F a m a (1981) figured out positive correlation between CSR and the real factors namely: IP, GNP, IR,MS and lagged INF. Lee (1992), and Lee & Kaneko (1995) established alike results. After investigating the connection between INF and SP in 16 states, Rapach (2002) stated that a rise in INF doesnt cause continuing/ everlasting depreciation in the real value of the shares. Evbayiro-Osagie and Osamuonyi, (2012) who inspected the linkage

b/w capital market & macro-economic issues in Nigeria. Moreover, Naik (2013) studied linkage between IPI, WPI, T-bills rate, MS and XR. Oriwo and Ocheing (2012) tested the connection between macro economic indicators and performance of Kenyan SM.

SR is a function of macro as well as micro-economic factors. SI are well known to be a good indicator of any economy or sector. Movements in market indexes are prominently effected by fluctuations in the macro-economic parameters. This may, differ in various segments of an economy because of the variations in their profile of risk return and sensitivity. There has been a huge volume of literature in finance that debates on the linkage among SR and macro-economic variables in the context of both developed as well as emerging markets for both developed and emerging economies.

The association between the macro-economic factors and SR has great prominence in finance and macro economics. The exploration of this affiliation also aids in figuring out how SR impacts the economy. In order to apprehend the significance of SM returns and macro-economic variables that influence them 5 variables are taken into consideration in this paper and those 5 variables are: Industrial growth, inflation growth, exchange rate, interest rate and stock returns.

1.1.1 Inflation Growth and Stock Market Returns

INF is the frequency/ pace at which over-all prices of services and goods grow In general, INF means, an individual can now acquire lesser quantity of goods/services with just the equal amount of cash. A theory established that as INF escalates, a purchaser's ability to buy diminishes, which consequently lessens IG. And so, IG and INF have an indirect linkage.

CPI is used as the best measure of INF. It takes into consideration the weighted average of the consumer services and goods basket prices e.g. Med-care and food etc.

INF rate in Ghana and Nigeria has a significant influence on the volatility of their SMs (Aliyu, 2011). The East African SM is positively and significantly influenced

by INF (Laichen and Obwogi, 2015).There is inverse relationship between INF and the performance of SM of Zambia (K.Shula, 2017). Significant and direct influence of INF rate is observed in emerging economies (Pradhan et al, 2019)

1.1.2   IR and SM Returns

It's basically amount which a borrower pays for using an asset. This amount is the percentage of principal amount. The IR is recorded on (APR). Borrowed assets may consist of consumer goods, large assets i.e. building or vehicle and cash. According to the classical theory, IR is generally decided by D&S forces of investment and savings.

There is an inverse linkage between IR and SR in the US. (Macmillan and Humpe, 2017). Another study undertaken by Pradhan et al. in 2019 states that in South Africa too IR impacts SR negatively.

1.1.3   Industrial Growth and Stock Market Returns

The selling or market price of finished goods/products/services, manufactured in a specific time period, in relation to the geographical limitations of any given country is known as industrial growth. The industrial growth is a measure for the completed goods/products/services and does not take into accounts the inputs or the processes followed in achieving the said outputs. Jhingan (1997) states that industrial growth and economic growth of a country are in direct relation, hence increase in value of the former signals growth in the later and vice versa. So increase in the industrial growth will complement an economys capacity to manufacture more goods and provide more services. Simply put, the gross product of a country in the time period of one year can summed up as the industrial growth of the country.

An escalation in industrial growth causes a rise in the SR of Amman Stock Market (Nader and Alraimony, 2012). Industrial growth impacts the Zambian stock market positively (K.Shula, 2017). Jordanian SM is significantly and directly influenced by Industrial growth (Ahmed and Mohamed, 2018).

1.1.4   XR and SM Returns

Comparative value of currency of country in relation to the other is termed as the exchange rate (Thobarry, 2009). For reference, a single United states dollar equals to 150 Pakistani rupees and 79 Indian rupees. In the same manner, one British pound sterling is equal to 199 Pakistani Rupees and 92 Indian Rupees. So if a person from Pakistan, visiting United States, pays 30 US Dollars for dinner then, as per exchange rate, he is paying 150 times 30 i.e. 4500 PKR.

If the Singapore dollar gets stronger, the Singaporean SM definitely attracts investments. This drives up the SM level, signifying that SM returns are directly correlated with the variations in the XR (Naka and Mukherjee, 1995). There is an inverse connection between XR and Malaysian SM (Aziz and Ibrahim, 2003).XR exerts a significant as well as positive influence onto the SM fluctuations in Nigeria in the longer term (A, 2017).

1.1.5   Stock Return

The economic conditions of a country have a very strong impact on to the stock prices. It is important to note any undulation in the prices in stock market might impact the economy of a country in a negative manner, which hence leads to a strong and casual relationship between the stock returns and macroeconomics. The stock market and its subsequent fluctuations has gained, as a phenomenon, a keen attention and interest among not only policy makers and researchers but also the economists and financial investors. This interest can be because of a number of reasons depending upon the subject, for example, in case of an investor, the exposure to this relationship between the impact on economy and stock prices could mean better risk management and risk mitigation. The exchange or trade of products happens in terms of stock prices. According to Iffionu and Ibe (2015), the fluctuations in stock prices, multiple times a year is a normal occurrence.

Tangjitprom (2011), intended to study the importance of macro-economic factors in the determination of SM performance. Results indicated that the macroeconomic factors can explain stock returns. Nwokoma (2002), too strived to establish

a longterm connection between SM returns and some macro-economic indicators. Findings show that only IP and IR, rate have influence on SM returns.

The summary of a short comparison of the trend of macroeconomic variables of previous 15 years in USA and Pakistan is given below. Aim of this comparison is to shed light on to the economic conditions of emerging and developed economies.

The study of INF rate in the years 2003 to 2018 in Pakistan, has shown a mixed trend. However, overall INF rate draws a good picture of the economys GR. 2008 had the highest average inflation growth rate, 20.3%. As per Moazzam and Kemal's (2016) findings, money is long term determinant of INF. Hence as the supply of money increases, the INF accelerates as well. Industrial growth rate from Pakistan illustrates a mixed pattern from 3.68%- 4.24% from 2003 to 2018. The highest Industrial growth rate was in 2017 that was 5.79% and second highest was in 2016 that was 5.37%. A study by M (2016) said, form the year 1990 up till 2014, the increment in the Industrial growth rate has been caused by the increase in production in agricultural production. Over the years, the currency of Pakistan, has gotten weaker. But this depreciation, in the viewpoint of Saif Ullah (2014), could be attributed to multiple factors such of Pakistans SM poor performance, poor economic conditions, and terrorism etc. Pakistans money market IR is 2.14% to 5.82% from 2003 to 2017. This shows an increase in the IR. The highest MMIR was in 2011 that accounted for 12.47%.

The avg. INF rate in the United States has been minimal in relation to Pakistan.. Kim & Sanchez (2018), attribute the low inflation growth rate of United States demographic transitions and the technological innovations that are currently underway. Moreover, the currency of United States i.e. is getting stronger by the day in comparison to Pakistani rupee. The Industrial growth rate in USA hasnt been high for the last 15 years this could be due to the fact that USA entered the list of developed countries ages ago. The lowest Industrial growth rate was in 2008 that accounted for -0.1%. This could be because of the financial crisis of 2008.

The linkage between the SR and macro-economic factors is being studied by many scientists around the globe, despite having been studied deeply in the past, due

to its monumental importance. The recent past has seen an increase of this relationship for emerging countries of economic significance such as Taiwan, Brazil, India and Russia etc. It is also seen that macroeconomic factors do not influence the stock returns. Furthermore, the previous studies on developed economies such as Sweden and Austria, as subjects for the study of relationship between SR and macro-economics, has shown that, indeed, macro-economic factors effect on stock returns.

1.2   GAP Analysis

Many studies have been undertaken to understand, evaluate and discover the linkage between multitudes of macro-economic parameters that consist of: MS, IR, INF, IG, XR, savings and Stock returns. Bai (2014), suggest, after a detailed study on the economic conditions of China, that stock returns are significantly affected by inflation growth. Husseins (2017) research on Uganda also shows similar findings. Mahmoud Ramadan Barakat (2016), also states that money supply, inflation growth, exchange rates and other macroeconomic factors have significant impact on the stock market of emerging countries. Ogutu (2011), in his study, shared the price variations at NSE Kenya in relation to IG.

However, no research paper is available which has targeted emerging, rapidly developing and developed economy altogether for finding out the connection/ linkage/ association among macro-economic variables (INF, IR, IG, XR) and SR in those countries. Moreover, limited study is present on this relationship in case of Australia, USA, Pakistan, China, and Malaysia on this relationship on individual bases. Furthermore, limited work has been done on quarterly bases; most of the prior studies have taken yearly data into account.

1.3   Problem Statement

Stock Market Returns of emerging and developed economies are affected by numerous factors. No study has highlighted this issue for emerging and developed

economies altogether.

1.4 Questions of Research

Research Question 1

How does the inflation growth influence the Stock returns of the selected emerging and developed economies?

Research Question 2

How does the interest rate influence the Stock returns of the selected emerging and developed economies?

Research Question 3

How does the industrial growth influence the Stock returns of the selected emerging and developed economies?

Research Question 4

How does the exchange rate influence the SR of selected emerging and developed economies?

1.5 Objectives

Objective 1 of the Study

To assess and analyze the influence of IR on SM returns of the selected emerging and developed economies.

Objective 2 of the Study

To assess and analyze the influence of industrial growth on stock market returns of the selected emerging and developed economies.

Objective 3 of the Study

To assess and analyze the influence of exchange rate on stock market returns of the selected emerging and developed economies.

Objective 4 of the Study

To assess and analyze the influence of inflation growth on stock market returns of the selected emerging and developed economies.

1.6 Significance of the Study

This study would have major impacts on the 2 main parties which include; policy makers, and investors. Investors would be capable of analyzing or predicting the effect of IR, IG, INF, and XR, as stated by Talla (2013), macro-economic parameters can be used as a yardstick by the investors to predict the SM performance. Policy makers would be able to forecast and draft regulations and policies according to analysis.

Chapter 2

Review of Literature

2.1 Arbitrage Pricing Theory (APT)

Numerous studies have utilized the APT for analyzing the relationship b/w macro-economic factors/ parameters and SR. Since this study also includes most of the macroeconomic variables APT is the most relevant theory to be utilized. The primary APT utilizes functional form in order to assess the linkage between stock index and macro-economic variables. Common factors influence all of the individual stocks. The SImay be affected by macroeconomicvariables, such as IR changes, XR,IG and INF.Nevertheless, the APT model has a flaw, since it assumes that the constant term's Rf (Jiranyakul and Brahmasrene, 2007).

2.2 Literature

The foremost stress of this proposed study is inspecting the vital determinants of INF rate, IG, IR and XR crucial elements which influence the SR of S&P500, PSX, Shanghai Stock Exchange, Bursa Stock Exchange, and Australian Securities Exchange. Bai (2014) stated that, there is very strong association among the 5 factors that include INF, XR, IG, IR and SR.

Accoding to Hussein (2017), INF is essentially extensively characterized as an increment in the general value level of the products in an economy. It is essentially

an increment in the general costs at average level rather than increment in explicit item. The most best determinant of INF is CPI which clarifies and quantifies the general change in the normal costs in administrations and products. INF can be arranged in to two general classifications which incorporate cost push INF and Demand-pull INF . In a situation where there is a tenacious and ensuing increment in the total interest there happens an addition in costs it is accordingly called request pull expansion development. While cost push INF t is identified with ascend in the expense related with the enterprises.

Undoubtedly, Stock is essentially one of the major assets for the nation's economic conditions. Any adjustment in the SP in the market can have compelling and significant negative ramifications on the economy of any nation which prompts an extremely solid connection between SR and macro factors. The securities exchange of any economy has increased a most extreme consideration of analysts and strategy creators as well as money related financial specialists and market analysts are additionally thinking about this phenomenon. Obviously, there are some reasons related to this, in case of financial specialists, if by any chance, they are presented to the connection between SP and their effect on the economy, they may be capable moderate their presentation to the hazard related. If there should be an occurrence of Policy producers, they will have the option to completely estimate or foresee the effect of guidelines and policies. Public can have the option to settled on specific choices on the off chance that they can envision the effect of changes that may occur in the money related market and the economy (Barakat, 2016).

According to the examination led by Barakat (2016), on effect of macro economic factors on the securities exchanges in the developing sector has an amazing outcome. The primary factors utilized in the examination incorporate SM, IR, INF, XR and MS. Moreover, intermediary factors incorporate Market index, CPI, National cash according to USD, IR on deposits, and M2. The methods utilized by the specialist are the underlying URT, ADF and the VAR model. The examination has an outcome which expresses that there is a solid connection amid M.E

factors utilized in the research and the SP, this investigation was directed on the overall SMI rather than with in explicit segment.

Another investigation was completed by Ogutu (2011), that planned on finding the bond amid IG and SP movements at NSE. The primary factors utilized were IG and SP. Dataset of IG was gathered from Kenyan Central Bank while the SP data was assembled from the NSE. The investigation explained that as IG expands the SM performance improves.

Additionally, one more article written by Jeat (2019), targeted the service sector of Malaysia. The study intended to discover the influence of economic forecasts on to the SM of Malaysia. Article evaluated the influence of macroeconomic variables that contains INF, MS and XR onto the SP of the Malaysian service sector. Results were in line with the notion of affiliation between M.E parameters and SM.

Moreover, an examination was led by Bai in 2014, in a similar field which the proposed investigation is attempting to assess, the goal of the examination led expresses the effect of INF on the securities exchange in China. OLS technique was utilized to determine the outcomes and research found a solid relationship amid these 2 parameters.

Moreover, another examination was led by K.Shula (2017), to contemplate the effect of XR , INF, IG, and IR on Zambian SM. The information for the factors was assembled from Lusaka S.E. Analyst utilized T.S information from 1997 to the year 2012. He utilized regression model in order to generate outcomes. The investigation reasoned that an ascent in INF and IR causes a reduction in performance of the Zambian SM. Though XR and industrial growthhave direct impact on to the performance of SM of Zambia.

In case of Pakistan, Kibria (2014), tried to test macro-economic factors' connection with SR. They collected and employed yearly data from the year 1991 to the year 2013. The outcomes proved a direct linkage between macro-economic factors and SR.

Resatoglu Civicir, and Rajoub (2017), inspected the connection among small scale and full scale financial factors and SP of 8 banks included in Istanbul SM for the

duration from 1995 to2015. The scientists utilized PD to capture the association amid large scale and small scale financial factors and SP. The outcomes inferred that both the monetary components(smaller scale and full scale) are critical factors in choosing the bank SP during the referenced period.

Laichena and Obwogi (2015), drove an examination on the affliation between SR and M.E parameters in East Africa. They used information of three EA nations from 2005 to 2014. They applied two examinations to be specific: expressive investigation alongside relapse examination. Results inferred that XR affected the SR adversely but essentially. Additionally, INF showed an immediate and critical linkage with SR. Most definitely, IG had an immediate just as critical bondage with SR in EA for the tried timespan.

Alraimony and Nader (2012), led a research on influence of M.E factors on SRof ASM. Data was taken from period 1990 to 2009. They took into consideration three models ARCH, GARCH, and OLS but illustrated outcomes by means of ARCH model. Conclusion was REER and INF had inverse influence on SR .In contrast, an increment in IG had instigated rise in SR for the tried time span .

Sanvicente et al (2011), study analyzed the linkage amid INF and SR in Brazil. This examination took data of 10 years. Sanvicente et al established long term linkage amid INF and real SR is negative. This affiliation isn't effective in case of short term evaluation.

Baranidharan and Vanitha (2016), conducted a study, that investigated the power of M.E factors on to the SM of 3G economies for a time span of twenty-two years between the years 1992 and 2013. The respective study used the ARDL model for 7 countries from a total of 11 3G countries. The outcomes displayed that chosen parameters have solid influence on the SM of 3G economies. Moreover, the study further contributed to the already existing literature.

Bahloul, Mroua, and Naifar (2016), in their study investigated the influence of returns of traditional stock market, volatility and numerous macroeconomic factors onto the returns of Islamic stock markets for 20 developed and developing markets. The data set they used was from 2002 to 2014. The results showed that the

traditional stock market returns as well as the money supply influence Islamic stock markets of the 20 developed and developing economies in both the high and low volatility cases. But the rest of the macroeconomic factors couldn't explain this relationship particularly in high volatility case.

Fei (2017), in his study highlighted the relationship of macroeconomic variables and the performance of stock market of the G7 countries. He extracted data from the various stock indices i.e. from the indices of G7 countries. The study used yearly data from the period between 2001 and 2015. The results showed that inflation growth rate has a positive and significant relationship with the movement of the stock index. The results specifically showed that for every 1% increment in the inflation growth rate there would be a 38% increase in the stock price. Furthermore the other variables such as, the IR and the XR didn't show a solid connection with the SP.

Sutrisno (2017), investigated the impact of macroeconomic factors on sector wise indices of the Indonesian Stock Market. The study used 10 yrs weekly datum from the year2005 to the year 2014. Outcomes showed that INF, XR, and IR impact significantly on the indices of the sectors in the emerging economy of Indonesia. There was a partially significant negative relationship between interest rate and the indices of all the sectors except for a few sectors. Moreover, inflation growth rate partly did not have a significant impact on all the listed sectors. Furthermore, exchange rate had a significant impact up to a certain extent.

Agarwal and Saqib (2017), in their study examined the outcome of changeability in the chosen economic factors at the Indian SR. They used the Nifty 50index. They collected the monthly data from 2001 to 2016. The results showed that the US INDUSTRIAL GROWTH, gold prices, the price index(wholesale) of India, India's fiscal deficit, exchange rate, IPI, and S&P index have a significant but negative influence on the industries of the entire Nifty 50 index.

Ismail and Jamaludin (2017) inspected the impression of macro-economic parameters on SR of both traditional and Islamic stocks in the 3 chosen ASEAN nations. They took monthly data of the years from 2005 to 2015. The results concluded that the INF and XR significantly affect returns of both SMs. Money supply

didn't have a significant impact. The results also showed that inflation growth has a greater but negative impact on to the returns of stock market.

Martinez et al. (2015) explored the influence of IR on to the Spanish SM during the years 1993 and 2012. Results specified that investors do check the connection between macro-economic factors, such as IR and SR before taking investment related decisions.

Ahmed and Mohamed (2018), explored the influence of 6 macroeconomic factors on to the Jordanian stock market returns from the year 1976 to 2016, using yearly data of stock returns and quarterly data of macroeconomic factors. The study used the ARDL model. The results concluded that the INDUSTRIAL GROWTH has positive and influence on SR. Besides, the MS positively as well as significantly impacts the Jordanian stock returns. Furthermore, the import prices had a negative but significant impact on Jordanian stock returns.

Ezeji (2018), in research paper assessed the link between macroeconomic factors and market capitalization in the emerging economies. They collected the data of the entire Nigerian stock exchange index from the years 1988 to 2012.The results concluded that macro parameters have impression on mkt capitalization. The results further concluded that unemployment rate, inflation growth rate, interest rate, and lending rate have negative impact on market capitalization but no significant relationship was found between these two.

Boonyanam (2014), in his paper investigated the linkage between monetary variables and stock prices in Thailand. They took yearly data for the monetary variables as well as the stock prices. They took 168 observations after collecting 14 years data ranging from 1999 to 2012. The extracted results showed a long term link between stock price and monetary variables. Moreover, no short term relationship between stock prices and monetary variables was seen. Only interest rate and narrow money had significant short term influence on stock price. Inflation growth and stock price as well as narrow money and stock price had bidirectional causality. In contrast to this, monetary variables such as interest rate and exchange rate showed unidirectional causality with stock price i.e. they both influenced the stock price but stock price had no influence on these two variables.

Philip and Maio (2015), carried out decomposition for stock returns of market by gathering and incorporating the data of 124 macro factors. The dataset of 6 common variables was used. The results showed the that utilization of macro variables to recognize the excess stock market returns components does not remarkably enhance the explaining power of this model.

In their paper explored both the short-term and long-term linkage between selected macroeconomic factors and stock returns. They employed the ARDL model to test the relationship between these two parameters. The results concluded that there is an evidence of long-term co-integrating relationship between numerous macroeconomic factors and stock returns.

Sadiku, Ibraimi, Sadiku (2015), investigated the connection between the chosen macroeconomic factors and stock market of 6 developed countries. Unemployment and INDUSTRIAL GROWTH indicated statistically significant relationship with the stock markets of the 6 countries, specifically in crisis phase.

Peiro (2016) investigated the interconnection between stock returns and macroeconomic factors in Germany between the years 1990 and 2016. They used ARDL bounds testing method introduced by Pesaran et al. (2001). Results indicated that exchange return influenced the stock returns positively but insignificantly. The CPI also influenced the stock returns positively but significantly.

Stock markets of any country are used as the finest indicators of that country's growth. The better the stock market is performing, the higher will be the growth of that country. In contrast to this, interest rate has a negative impact on any country's economy. Some researchers, in their paper explored the impact of XR and IR fluctuations on SR. The dataset they used was from 2007 to 2017. They applied multiple regressions. The results showed that stock returns are significantly impacted by both the variables. The exchange rate has positive correlation whereas the interest rate has negative correlation with Pakistan's SR.

Another study in 2015, tested the hypothetical relationship of volatility between maroeconomic factors and stock market returns for Indian economy. The dataset they used was from 1996 to 2013. They used data of macroeconomic variables and

stock market returns for analysis. The data for stock returns was extracted from BSE and NSE. The consequences displayed bondage between macro factors and SM volatilities.

Alexandros and Andros (2010) explored the long-term linkage between goods prices and stock prices and it also aimed at finding out whether investment in stock market can provide a cushion against inflation growth. The researchers gathered the data of the years between 1970 and 2006 of the selected OECD countries. The results indicated a positive long-term connection between stock prices and good prices.

Fatmawati, and Beik (2014) in their paper intended to test the influence of macro economic factors and stock market on JII. By employing VECM method, the study uses monthly data from 2007 to 2012. According to the results of this work IPI,DJIEU, and DJIMY impact JII directly and significantly, and M2,DJIJP,SBIS,and IMUS impact JII inversely but significantly. When faced with MS shock JII reaches the stability condition at a faster rate.

According to the researches carried out in the past local factors in contrast with the global factors have more impact on to the returns of the emerging stock markets. Hooper, Bilson, Brailsford (2001) in their research work tried to test the results of previous studies on the topic of the power of local macro parameters on SR of emerging stock markets. Their study concluded that little proof is found that supports this argument.

The study undertaken by Naik and Padhi (2012), aimed to inspect the linkage between BSE Sensex and 5 macroeconomic factors: industrial production index, treasury bills rates, wholesale price index, exchange rates, and money supply during the timespan 1994 to 2011. The results unveiled that there is a direct relationship between stock prices and Industrial production as well as the MS but inverse linkage with inflation growth. Short term interest rate and exchanged rate do not impact stock prices significantly.

Trihariyanto and Tulasmi tested the performance of Islamic stock indices of Indonesia and Malaysia through Jenson, Treynor and Sharpe methods. Results indicate that by employing the Jenson method and Treynor method the performance

of Indonesian Islamic stock index tends to be one step ahead of Malaysian Islamic stock index. In contrast to this, Malaysian stock index performs better than Indonesian stock index after utilizing the Sharpe method. Investors with inadequate funds should invest in the Malaysian Islamic stock index whereas investors with sufficient funds should invest in the Islamic stocks Indonesia.

Kim, Kim and Chen (2005), explored the linkage between non-macroeconomic and macroeconomic factors and stock returns of hotels by gathering the data of hotel companies registered on TWSE. The results pointed out that of all the macroeconomic factors that are, MS, yield spread, expected inflation growth, industrial production, and the unemployment rate, only unemployment rate and MS significantly justified their linkage with the fluctuations of the returns of the hotel stocks. In contrast to this, the non-macroeconomic factors chosen that are: 921 earthquake, 911 terrorist attacks, SARS outbreak, sports events, presidential elections, Iraqi war, and financial crisis of Asia significantly affected the stock returns of the hotel. These results can be utilized as important information for both types of investors, global and local, who look for investment opportunities in that particular industry.

According to Ding (2006), the linkage between inflation growth and stock returns is dependent on Relative importance of D and S shocks and MPR. An analytical framework was constructed to study the linkage between the two factors. The researcher's results explained that the reason behind the positive linkage between the tested variables was because of pro-cyclical MP. Moreover, due to the supply shocks in 1952 to 1974 there was a negative linkage of inflation growth and stock returns. The results were in line with the economic theory.

According to Flannery, and Protopapadakis (2002), there was strong correlation between stock returns and chosen macroeconomic factors that are, money growth and INF. The linkage between the equity returns and the selected macroeconomic factors were difficult to predict. They employed the GARCH model and gathered the daily data of equity returns.

Another study inspected the influence of macroeconomic variables on to the performance of NEPSE index. It utilized the yearly data of 4 macroeconomic factors

that are: RINDUSTRIAL GROWTH, interest rate, MS and inflation growth during the years 1994 and 2016. The study tried to unveil the influence of the mentioned factors onto the stock prices. Results indicate IR has negative indirectly influence performance of SM, where as the rest of the factors: MS, RINDUSTRIAL GROWTH, inflation growth tend to positively influence the performance. Moreover, cointegration is not seen between NEPSE index and macro-economic factors that show macroeconomic factors can't explain the fluctuations in stock price.

Aziz and Ibrahim (2003), reviewed the dynamic connection between 4 macroeconomic factors and stock prices for the Malaysian economy. The methods employed were vector auto-regression and cointegration. The existence of long-term relationship between stock prices and the 4 chosen variables and fundamental short-term interactions between them are specified by the findings. A positive linkage in both the short term and long term was seen between 2 of the macroeconomic factors with the stock prices. In case of MS, there is a positive connection in the shorter run. Whereas, a negative long term linkage was seen between MS and stock prices. As far as the exchange rate is concerned, there is an inverse connection between XR and stock price. The data they collected was irregular. The short term positive linkage between MS and stock prices and the irregular interactions between XR and stock prices vanished over time.

They inspected the linkage between the 7 selected macro variables and the SI of NZ. Gathered dataset was from 1990 to2003. They utilized the cointegration tests. They used Johansen test and granger causality test, to find out does NZX influence the macroeconomic factors. Moreover, the short-term dynamic connection between macro-economic factors and NZSE40 is also inspected by the researchers. In reality, RINDUSTRIAL GROWTH, interest rate, and MS influence NZSE40 and no proof was found that stated NZX influences the fluctuations in the macroeconomic factors.

Maghayereh (2018), inspected the long term linkage between the chosen macroeconomic factors and JSX. He utilized the Johansen test and took monthly data from 1987 to 2000. His study found out that macro-economic factors such as:

industrial production, exports, inflation growth,foreign reserves, and interest rates, influence stock prices in the capital markets of Jordan.

Baharumshah and Habibullah (1996) inspected the linkage between Malaysian stock prices and the macro-economic factors. More specifically, this paper aimed at testing whether the two chosen variables, MS and output are essential in estimating the Malaysian stock prices . The authors used the monthly data of the mentioned variables. They utilized M1 as well as M2 in case of MS. Moreover they used RINDUSTRIAL GROWTH to measure output and Industrial, property, tin, composite, finance and plantation stock price indices were employed. The findings pointed out that the two variables do impact the Malaysian stock prices.

Paccagnini and Colombo (2019) inspected the influence of credit supply shock in USA's business cycle between the years 1973-2018. Their study included nominal, monetary, financial and real factors. Results indicated that a credit supply shock has negative influence on macro-economic factors .

Pradhan, Banda, Hall (2019), inspected the linkage between industrial shares and macro aspects for example: IR, economic output XR, INF and in emerging economies. They did the analysis of INDI 25 on JSE. The data set that was utilized by them was between the timespan 1995 and 2017. The findings pointed out that INFL impacted the stock prices significantly and positively. There was a negative linkage between I.R and stock prices. XR had positive linkage with the stock prices, whereas, INDUSTRIAL GROWTH didn't show any connection with the stock price.

Xiong, Wang, Lu (2017) tested the influence of macro-economic factors onto the S.R. the proxies of the variables that were included in their research are: CPI, IPI, EFFR, and Unemployment rate. The findings specified solid correlation amid SR and M.E factors.

Macmillan and Humpe (2007), assessed the presence of linkage between the chosen macro-economic variables and S.P in both the countries that are, Japan and United States. In order to find the long run connection between, MS, IPI, CPI, Long-term IR, and S.P in Japan and United States, cointegration analysis was employed. In

case of Japan, the results highlighted positive influence of Industrial production on S.P; Whereas MS influenced the prices of the stock, negatively. IRs and CPI had inverse impacts on Industrial production. As far as the United States data is concerned the findings specified negative linkages between CPI and SP, and Long-term IR and S.P. On the other hand, a positive linkage was seen between Industrial production and prices of the stock. Furthermore, the linkage between MS and SP was not significant even though it was positive. The difference in the findings can be because of the varying economic condition between the economies during the tested years.

According to Hassler, Devereux, Guiso, and Corsetti (2010) Non-sustainable path is being followed by the economy of the United States. The major measures of this are substantial deficits in the federal budget and the current account and increment in the medical care cost and Social security cost. The authors considered these major indicators and further discussed about how economic and financial crisis could have changed the perspective. They further explained the meaning of sustainability in order to make the analysis of their study easier.

Barnor (2014), intended to figure out whether macro-economic factors influence the SR or not? He gathered and utilized the data from the year 2000 to the year 2013 and employed TSA for Ghana. Results indicated that MS and IR inversely influenced the SR whereas XR had a direct linkage with SP but INF had insignificant influence on SR.

Sarkar and Ray (2014), reviewed the dynamic connection between the chosen macro-economic factors and S.P in the Indian economy between the years 1991 to 2008. The findings specified that the S.M of India has negative link with the MS, INFL and long in the SP. term IR and short term IR. On the other hand it has positive links with the Output and XR. Results indicated that S.M impacts the economic activity in India and it is anticipated that the market would be sensitive to any future shocks.

Another study assessed the influence of macro-economic factors on the fluctuations of SP in Ghana. They utilized stock index data of Ghanaian S.M and data on T-bill rate, XR, CPI, and inward FDI. They did the analysis of both the short and long

term dynamic linkages between macro-economic factors and SMI from the years 1991-2006 by utilizing Johansen's test. The findings specified that there was a long term linkage between the SP and macro-economic factors. There was a significant influence of those variables on to the fluctuations Zhou (1996), considered the linkage between IR and SP by utilizing regression analysis. Results specified that IRs have a significant influence on SR.

A study, found a strong direct linkage, between NYSE SR and macro-economic factors that are; output, CE, and real rate of return, during 1950s. Findings also stated an inverse linkage between SR and INF rates. Based on that study another study established that there are positive correlations between NYSE SR and IPI, and inflation growth. Empirical evidence, additionally complemented, some of the studies by approving the presence of a connection between SR and macro economic indicators e.g. term spread, and dividend yield etc.

Dimitrova (2005), declared that finding the linkage between SP and XR is very important. Mougoue and Ajayi(2011), examined the short- and long-term relationship between SP and XR in 8 developed economies. The data on short-run effects at the U.S. and UJC markets were of high concern to them. Results showed that an increment in SP caused the currency to lose its value for both U.K and the US. They described this as follows: an upward stock market is an indication of an expanding economy that goes hand in hand with higher expectations of inflation growth. Foreign investors get a negative perception of higher inflation growth. The investors' demand falls and thus the currency loses its value.

Aroni utilized regression model in order to assess the influence of economic indicators on SR in Kenya. The dataset was from, the year 2008 to the year 2010. They figured out that INF rate, XR and IR have significant connection with SM prices and MS has direct and insignificant linkage with SM prices. Results indicate that the IR and XR have inverse linkage with SP. Whereas MS and INF have direct influence on SP.

Khan et al. explored the connection between macroeconomic parameters and SM returns in Peshawar through utilizing regression model. The dataset used was

from the year 2001 to the year 2010.They figured out that INF and IR doesn't have a significant effect on SP. XR had inverse influence at SP of KSE 100.

Sirucek(2012), intended to focus on the connection among chosen variables and SR of US indices namely: S&P 500 as well as DJIA. His work, took into, consideration INF, IR, MS, CPI, IPI, UNEMP, and oil prices and their influence on the chosen SI of USA from the year 1999 to the year 2012. The assumption of his paper was, there is strong influence of the chosen factors on to DJIA rather than the other SI of US. His working paper has organized in the following manner: 1st section reviewed the literature. In section 2, there was explanation of methods. Section 3, provided results and the last segment presented conclusions.

Hanousek(2000), explored the likelihood that recently emerged SM in Central Europe display semi strong efficiency form with the end goal that no connection is present between slacked estimations of variations in economic factors and changes in SP. He specified that as there are associations between the economy and SR in Hungary and Poland, these connections happen with slacks, proposing the chance of beneficial trading strategies dependent on open data and rejecting semi strong efficiency. For the Czech Republic the circumstance is progressively unpredictable. In ongoing periods, little association exists between slacked economic factors and SR. Despite the fact that this finding may be seen as reliable with semistrong effectiveness, in reality there is likewise little association between current economic factors and SP in Czech Republic. Consequently, rather than handling data proficiently, the Czech market gives off an impression of being totally separated from this reality. He recommended that the distinction in the present status of these business sectors might be because of the various techniques by which they were made.

K.(2008), examined the part of macro factors in clarifying Turkey's SR. Macro economic model was utilized for, the period that ranged from the year 1997 to 2005. Macroeconomic factors utilized right now, GR of IPI, CPI variations, MS, change in XR, IR, fluctuations in oil prices and profit for the WEI. This investigation utilized information for all non financial firms recorded on the ISE. The

investigation bases on portfolios of stocks not on single stock. In portfolio development, many criteria are utilized: market equity, leverage ratio to name a few. Regression model was intended to test the connection between the SR and 7macro economic parameters. Results uncover that XR, IR and WMR appear to influence the returns, while INF rate is significant for just 3 of the 12 portfolios. Then again, IP, MS and prices of oil don't seem to have a significant effect on SR.

King (1966),Regardless of whether lower stock value synchronicity reflects data or commotion doesn't have a decisive answer yet. From the viewpoint of analyst following in , results uncovers that, the stock value synchronicity which star investigators following is lower than that of non-star experts, however star investigators don't possess progressively private data about the stocks from the perspective on income estimate exactness. Financial specialists will in general blow up to the star examiners suggestions, and lower stock value synchronicity is because of commotion yet not private data uncovered in these stocks. So, low price synchronicity implies clamor.

Basmah et al. (2014), inspected if there is a long term connection among 5 macroeconomic factors, CPI, mechanical yield, MS, XR, oil prices alongside the worldwide SR iof S&P 500 index and Saudi SI. Time series investigation is applied utilizing month-month statistics from the year1994 to the year2013. Utilization of test of Johansen co-integration found out the occurrence since a longterm connection among the picked factors. Every macroeconomic variable are found to affect SP. S&P500 index doesn't influence Saudi SP. VECM indicated the nearness of since a long time ago ran connection from descriptive factors to SP. Short term causation test discovered a 2 route connection b/w oil prices & SP. Motivation reaction work shows that automatic generation shocks pushes up SP while CPI fluctuations jerks it downwards. Fluctuation deteriorations show that authentic stock costs are the significant driver of Saudi SP. This suggests Saudi securities exchange follows feeble type of market effectiveness. The aftereffects of this paper have significant ramifications for the financial specialists in Saudi securities exchange.

Another paper explored whether macro-economic indicators can foresee downturns in the securities exchange, i.e., bear markets. Method, ie., IR , INF, MS, T.yeild, UNEMP, administrative subsidizes rates, government obligation, and XR are assessed. In the wake of utilizing parametric as well as non-parametric ways to deal with distinguish downturn periods in the SM, they thought about both in-test and out-of-test trial of the factors' prescient capacity. Observational result from month-month statistics on the Standard and Poor's 500 index recommended that among the macro economic parameters they have assessed, INF rates are best pointers of downturns forUS SM , in accordance with both out test and in test forecast. Besides, contrasting the bear market forecast with the SR consistency has demonstrated that it is easier to foresee bear markets utilizing macroeconomic factors.

The point of another paper was to test for the nearness of enlightening inefficiencies on securities exchanges of chosen CEE nations (Croatia, Slovenia, Czech Republic, and Poland Hungary,) breaking down the connection between financial exchange lists and macroeconomic factors. So as to test for two-sided since quite a while ago run balance connections between securities exchange list and set of macroeconomic factors, including infl ation rate, expansive cash supply, currency advertise financing cost and remote money holds, we use Johansen cointegration technique. To acquire data about market efficiency Granger causality test is utilized. Results point to built up since a long time ago run connection between securities exchange records and macro economic factors, particularly if there should be an occurrence of Poland and Czech Republic. The aftereffects of Granger (non) causality uncover that (1) there's no causal link b/w any macro economic variable and financial exchange record in the three countries; (2) MS and foreign trade lead SI in Czech Republic, while INF rate and currency showcase loan cost lead Slovene SI (3) none of securities exchange files may be utilized as a main pointer of INF rate (4) securities exchange file drives currency advertise loan cost in Hungary and Czech Republic, remote trade saves in Slovenia and MS in Poland.

Another study, observed the connection among SM index of Thailand and chosen macro economic factors in the times of pre and post financial crisis. In the exact

investigation, unit root, Granger causality and co-integration tests were used. The post-fiancial advancement results demonstrated that the SM index, the modern creation list, MS, XR, and world oil costs contained a unit root and the unit root removed at first difference. Johansen co-integration test was utilized. The outcomes appeared at any rate one cointegrating or since a long time ago run connection between the securities exchange file and a lot of macroeconomic factors. MS positively affected the securities exchange record while the IPI, XR and oil costs had a negative effect. In the times of the post-financial emergency, all factors were coordinated at various requests. Cointegration existed between the securities exchange file and macroeconomic factors. Moreover, the Granger causality test demonstrated MS was the main variable decidedly influencing the SM returns.

Further more another study examined the influence of economic parameters on Ghanaian securities exchange revenues utilizing month to month dataset over period 1992 to 2008. Macroeconomic factors utilized right now CPI (as an intermediary for INF), c.o price, XR and multi day Treasury charge rate (as an intermediary for IR). The investigation utilizes the Johansen Multivariate Co-mix Procedure. The experimental outcomes uncover that there is co-reconciliation concerning the 4 macro indicators and SR in Ghana demonstrating since a long time ago run harmony relationship. Further, the outcomes uncover that; in the short run, Treasury Bill Rate fundamentally impacts the stock returns, with and a flexibility of 0.005, suggesting that a 1% ascend in the Treasury charge rate will prompt a 0.005% ascent in the stock returns. The expansion rate is likewise noteworthy at 1% with flexibility 0.135744, inferring that a 1% increment in swelling rate will diminish stock returns by 0.14 %. The lingering estimation of 0.785548 of the Error Correction Model demonstrates that about 79% of the deviations of the stock returns are redressed in the short run, which is very high and empowering for a developing business sector like the Ghana Stock Exchange. Over the long haul, be that as it may, the stock returns are fundamentally affected by INF rate , Crude oil costs, XR, and Treasury charge rate, with flexibilities of 0.5479,- 0.03021, 0.05213, and 0.00322 individually. Crude oil cost is contrarily identified with stock returns; 1% ascend in Crude oil costs will diminish returns by 0.03%. Likewise a 1% expansion

in INF rate builds SR by 0.54%; and a 1% ascend in conversion scale expands stock returns by 0.052%. The impact of Treasury charge rate is exceptionally inelastic with flexibility of 0.003. In both the short run and the since a long time ago run outcomes, expansion rate has all the earmarks of being the most persuasive macro economic indicators influencing financial exchange returns in Ghana. The outcomes additionally uncover that financial specialists are not made up for inflation growthary increments in the short run, yet are remunerated over the long haul. These outcomes have suggestions for policy makers, finanacial analysts and fund managers.

Another study, inspected whether the unpredictability of securities exchange returns is controlled by macroeconomic factors either as individual or as a gathering, inside the setting of Vietnam an outskirts developing business sector. Six macroeconomic components have been chosen, including INDUSTRIAL GROWTH, CPI, M2, IR, XR, and FDI. Using 161 month to month perceptions gathered from 2000 to 2013, the paper utilized GARCH system to gauge securities exchange instability just as to appraise this unpredictability under demonstrated macroeconomic effects. Taking the instability bunching into account, the GARCH (1,1) models uncover that the unpredictability of Vietnam's financial exchange returns is exceptionally tenacious, recommending a long memory of the instability accordingly of a stun. Also, the securities exchange unpredictability could be anticipated better utilizing past stuns (for example those beginning from INDUSTRIAL GROWTH, XR and CPI) as opposed to the past unpredictability itself. The forecast of Vietnam's securities exchange unpredictability could be better founded on the chose macroeconomic markers. A month to month change in CPI shows up as the most basic marker that help anticipating the instability of the Vietnam's financial exchange. Any report about monetary development can be considered as the second noteworthy factor in clarifying Vietnam stock return unpredictability. Moreover, the univariate investigation shows a measurable noteworthy proof for the effect of an adjustment in the XR on Vietnam's securities exchange instability.

Another study, stated that, the advancement of new SM in EUR, Africa, LATAM,

Mideast gave another list of opportunities to investors. Business sectors demonstrate risen forseen returns just as high instability. Critically, the little connections with fully advanced economies fundamentally lessens the open portfolio danger of a global speculator. Under any circumstances, standard worldwide resource valuing models, which accept total reconciliation of capital markets, neglect to clarify the cross segment of normal returns in rising nations. An investigation of the consistency of the profits uncovers that developing business sector returns are more probable than created nations to be affected by neighborhood data.

A paper inspected the connection between SP and XR in Mexico. Granger-causality-test shows that SP lead XR in short term, and there is no since quite a while ago run connection between these two factors. This finding certifies the consequences of Bahmani-Oskooee & Sohrabian's in 1992 decision, yet repudiates the discoveries of different investigations which revealed a long term bond b/w XR & SP

A paper considered the dynamic bondage b/w SP & XR in the Brazilian economy. We utilize as of late created unit root and co-integration tests, which permit endogenous breaks, to test for a since quite a while ago run connection between these factors. We performed direct, and nonlinear causality tests subsequent to thinking about both unpredictability and straight reliance. We found that there is no since quite a while ago run relationship, yet there is straight Granger causality from SP - XR, in accordance with the portfolio approach: stock costs lead trade rates with a negative connection. Moreover, we discovered proof of non-linear Granger causality from trade rates to stock costs, in accordance with the customary methodology: trade rates lead stock costs. We accept these discoveries have commonsense applications for global speculators

A paper appraised the impacts of chosen macro economic indicators on the securities exchange record in Slovakia. The EGARCH model was utilized in evaluating the difference condition. It finds that Slovakia's securities exchange record is emphatically connected with genuine INDUSTRIAL GROWTH and the US or German securities exchange record and adversely affected by the proportion of government obtaining to INDUSTRIAL GROWTH, the residential genuine loan

cost, the normal swelling rate and the EU territory or U.S. government security yield. The financial exchange list displays a quadratic association with the ostensible compelling conversion scale NEER, recommending that they have a positive (negative) relationship if NEER is less (more noteworthy) than the basic estimation of 108.04. In this manner, to keep up a powerful financial exchange, the specialists are relied upon to seek after monetary development, monetary reasonability, a lower genuine loan cost, a lower expected INF rate, and an ostensible successful conversion standard helpful for securities exchange execution.

A paper dissected returns on 14 supplies of the Croatian capital market in the period from 2004 to 2009 utilizing expansion, modern creation, financing costs, advertise record and oil costs as elements. Both the heading and quality of the connection between the adjustment in variables and returns are examined. The investigations included fourteen stocks and their sensitivities to factors were evaluated. The outcomes show that the market file has the chief factual criticality for total stocks and a progressive bondage with returns. Loan fees, oil costs and mechanical generation additionally symbolized a solid bondage to SR, while INF had inverse affect. Besides, cross-sectional relapse with the assessed sensitivities utilized as autonomous factors and returns in every month as reliant factors is performed. This examination brought about time arrangement of hazard premiums for each factor. The most significant factor influencing stock costs end up being the market file, which had a positive hazard premium. A factually huge factor in 2004 and 2008 was likewise INF, denoting a negative hazard premium in 2004 and a positive one of every 2008. The staying three variables have not appeared as huge.

Another paper inspected two elective models of the procedure creating stock returns. Under the schedule time theory, the procedure works persistently and the normal return for Monday is multiple times the normal return for different days of the week. Under the exchanging time theory, returns are created distinctly during dynamic exchanging and the normal return is the equivalent for every day of the week. During a large portion of the period considered, from 1953 through 1977, the day by day comes back to the Standard and Poor's composite portfolio are

conflicting with the two models. In spite of the fact that the normal return for the other four days of the week was sure, the normal for Monday was essentially negative during every one of five-year subperiods.

Another paper stated, that return to the oilstock nexus by representing the job of macroeconomic factors and testing their in-test and out-of-test prescient forces. They followed the methodologies of Lewellen (2004) and Narayan and Westerlund (2015), which were figured into a direct multi-prescient structure by Makin in 2014 and Salisu in 2018 and a nonlinear multi-prescient model by Salisu ,Isah in 2018. From there on, we stretch out the multi-prescient model to represent basic breaks and asymmetries. Our investigations are led on total and sectoral stock cost files for the US securities exchange. Our proposed prescient model, which represents macroeconomic factors, beats the oil-based single-factor variation just as the steady returns (recorded normal) model for both in-test and out-of-test estimates. We find that it is imperative to represent basic breaks in our proposed prescient model, in spite of the fact that asymmetries don't appear to improve consistency. What's more, we show that it is imperative to pre-test the indicators for constancy, endogeneity, and contingent heteroscedasticity, especially when demonstrating with high-recurrence arrangement. Our outcomes are strong to various figure measures and estimate skylines and are helpful for settling on compelling supporting choices in the US financial exchange

Another study's investigation looks at whether the SP of Turkish travel industry organizations react to development in eight full scale financial factors in particular, CPI, imports, XR, oil price, MS, and month to month securities exchange return. By applying the GC methodology, we find that development in the imports could Granger cause the travel industry organizations' stock returns among eight large scale factors in Turkey during the year 2005 to the year 2013. Subsequent to considering the basic break that happened in 2007, the pre-break results demonstrate that the, XR, and outside traveler appearances could Granger cause the travel industry stock returns. Notwithstanding, the outcomes in the post-basic break period uncover that solitary developments in oil costs and imports are huge.

This paper considers in the case of fusing business cycle indicators benefits a constant enhancing financial specialist who must distribute assets across 3,123 NYSE-AMEX stocks and money. Acknowledged returns are certain when balanced by the Fama-French and force factors just as by the size, book-to-showcase, and past return qualities. The speculator ideally holds little top, development, and force stocks and loads less (more) intensely on energy (little top) stocks during downturns. Profits for singular stocks are unsurprising out-of-test because of alpha variety, though the value premium consistency, the significant focal point of past work, is sketchy.

Another study stated by Utilizing a financial method, to test cause &effect relations as well as, non-static collaborations amid SR, genuine movement, INF in US. Significant discoveries: SR show up Grangercausally earlier and help clarify genuine movement, with IR in the VAR, SR clarify little variety in expansion, despite the fact that financing costs clarify a generous portion of the variety in swelling, and expansion clarifies little variety in genuine action. These discoveries appear to be progressively good with Spencer and Ram(1983) or Fama (1981) or with Roll and Geske (1983) .

A paper stated that, as loan fee assumes a significant job in returns, numerous specialists examine the Impact of financing costs and remote conversion scale on SR. Leon (2008) gauges the effect of loan cost on SR. Just due to this purpose he gathered the week after week information on KOSPI for the time of 6 yrs as needy variable and week after week Negotiable Certificates of Deposits for a similar time as free factor and run the GARCH and revealed that the Conditional market return have a negative and noteworthy connection with the financing cost. John Beirne in 2009 inspected the market, IR and XR hazard impact on the money related Stock returns. To analyze this reality they chose three divisions (Banking, Financial Services and Insurance) of 16 distinct nations including some European nations. They utilized fourvariate GARCH-M Model. Their factors were transient obligation (90 Day treasury Bills Rate) and 10-years Government security yield for all the nations. In general outcomes indicated that loan cost and swapping scale impacts normal in banking division and monetary administrations however

in protection segment financing cost and conversion standard have constrained impact

According to a researcher, the target of his paper was to inspect the long and short term connection between IND, CHN and Japan's securities exchanges and crucial macro factors, for example, trade rates and swelling (proxied by purchaser value record) of ASIAN 3 economies (Japan, India, and China). Month to month time series dataset crossing the period from 2008 to 2016 was applied. URT, COINT test, GCT and mutual mean gathering estimator is utilized to infer since long and short term factual elements. Discoveries of joint assessed aftereffects of three Asian nations show that conversion scale has direct and sig effect since quite a while ago run impact on securities exchanges while the expansion has a neg and inconsequential since a long time ago run impact. In the short run, there is no factually critical connection between macro factors and financial .investigation underscores effect of macro-factors on the financial exchange execution of creating economy (CHN and IND) and created Japense economy.

A study stated,two recently emerging markets, India and China have been known as the Asian tigers because of the noteworthy monetary development experienced by the two markets as of late. During the most recent span, CHN econmy as estimated by INDUSTRIAL GROWTH have developed at normally 10 per cent and IND's at 7 percent on a yearly basis. Through the era, the exchange equal, capital streams & normal monetary agreements in different SM have additionally enhanced quickly. Because of huge monetary portion, enormous populace and un-static financial development, IND and CHN upsurge as 2 significant unmistakable developing SM that add to international economy.

A researcher dissected the linkage among CHN and IND with 4 significant created advertises & inferred that both CHN and IND securities exchange are for instance co-integrated with all the 4 created SM & furthermore there presents a two-sided causation among CHN & IND.

Kanwal and Nadeem (2013), intended to inspect influence of economic factors on earnings of commercial banks of Pakistan from the year 2001 to the year 2011.

POLS technique is utilized to look at the impact of 3 significant external components; expansion rate, GDP and genuine financing cost on productivity markers; return on ROA, ROE and EM proportions in 3 different models. Outcomes show a solid positive relationship of IR with ROA, ROE and EM. Besides, GDP had an inverse positive outcome on ROA, however an inconsequential negative effect on ROE and EM. INF then again, has a negative connection with each of the 3 measures. As a whole, the chosen macro-economic variables are found to negligibly affect income of business banks.

A paper stated ,in recent years we are living in post truth and profoundly digtalized period portrayed through progression of data round the globe. Distinguishing impacts of data in securities exchanges & determining SR & VOLT became significantly troublesome errand, maybe practically outlandish.

The paper researched the effect of macro elements, GERM gov SR, opinion and driving pointers on the primary German SI, in particular, for the timeframe from the year 1991 to the year 2018. Utilizing data of twentyfour elements and over a time allotment around twenty seven yrs, they discovered proof, crosswise lots of sub-samples, OECD, IFO,CPI, just as 3Y GER GOV securities revenue show deferred influences on SR. They concluded,the deferred effect of elements of the M2 on SR altered course b/w the emergency and post emergency years. Generally speaking, outcomes represent, in the emergency time frame a larger components & monetary pointers impacts affected the SR contrasted with the pre, post-emergency spans. It suggests in post emergency timespan, full scale driven SM wins.

Levine and Zervos (1996), exactly assessed the connection between securities exchange improvement and long run development. The information recommends that securities exchange advancement is decidedly connected with monetary development. Also, instrumental factors systems demonstrate a solid association between the foreordained part of securities exchange improvement and financial development over the long haul. While cross country relapses infer a solid connection between financial exchange advancement and monetary development, the

outcomes ought to be seen as intriguing fractional relationships that stimulate extra research instead of as complete discoveries.

Much work stays to be done to reveal insight into the connection between financial exchange improvement and monetary development. Cautious contextual investigations may help distinguish causal connections and further research should be possible on the time-arrangement property of such connections. Research ought to likewise be done to recognize arrangements that encourage the advancement of sound protections markets. This paper was a result of the Finance and Private Sector Development Division, Policy Research Department - is a piece of a bigger exertion in the office to examine the connection between budgetary frameworks and financial development. The investigation was subsidized by the Bank's Research Support Budget under the exploration venture Stock Market Development and Financial Intermediary Growth (RPO 679-53).

According to a study, stock and choices markets can differ about a stock's worth as a result of exchanging alternatives and value pressure in share. The consistency of stock profits based on cross-advertise inconsistency in values is particularly solid when joined by stock value weight, and it doesn't rely upon exchanging alternatives.

They contended that alternative inferred costs give a stay to basic stock qualities that assists with recognizing stock value developments coming about because of weight versus news. Generally, their outcomes are steady with stock value pressure being the essential driver of the alternative cost based stock bring consistency back.

DiGiovanni et al. (2020), stated existing exploration has discovered cross-sectional regularity of SRthe intermittent outperformance of specific stocks during a similar schedule weekdays or months. They conjectured that assets' various sensitivities to financial specialist mind-set clarify these impacts and suggest different seasonalities. Steady with their speculations, relative execution across singular stocks and portfolios during past high or low temperament weekdays and months will in general repeat in time-periods with consistent mind-set and vice-versa. Moreover, resources with high sensitivities toward total state of mind, higher temperament

betas,in this way win more significant yields during rising disposition periods and acquire low returns during dropping mind-set periods.

Gong, Wen, and Wo (2020),took Shenzhen pilot for instance, this paper utilized DID technique to quantitatively break down the effect of carbon emanations' environmental guideline on the SR of organizations. The outcomes show that setting up China's carbon discharges exchanging market positively affects the returns of organizations taking an interest in carbon emanation remittances exchanging. Furthermore, the carbon premium in stock returns has expanded after Chinas carbon outflows exchanging market is set up. What's more, we likewise see that the carbon premium has a consistent upward pattern after 2014. What's more, their examination demonstrates that the coefficient of carbon hazard factor is fundamentally positive, that can be clarified by the way that organizations taking an interest in carbon showcase have even higher carbon contacts.

A paper looked at the job of economic news amazes on returns unpredictability of Indian Index prospects advertise. Observational writing places that news appearances influentially affect resource returns and brings instability back. Steady with this suggestion, it has embraced an extensive assessment to comprehend the connection between economic news discharges, exchanging volume, and returns instability in a rising money related Indian market.

Utilizing high-recurrence information tested at 1-minute interim alongside a more extensive class of macro-economic news, they found that the news shocks fundamentally influence the two returns instability and exchanging volume and that the reaction of Index fates agreement to macroeconomic news shock is somewhat quick and noteworthy. Furthermore, there is proof that few economic news shocks apparently show hilter kilter sway on the Index prospects contract.

Jung, and Dimpfl (2011),in their article inspected the spread of SR and instability overflows, globally. It drew on list fates of three agent lists, to be specific the DJ 50, the Standard & Poor 500 and Nikkei 225. De-volatized returns and acknowledged volatilities are displayed independently utilizing a SVAR model, along these lines representing the specific successive time structure of the exchanging settings. Inside this system, they tested theories in the soul of Granger tests, explore the

short-term elements in 3 markets utilizing IR works, and recognize administration impacts through change deterioration.

Their key outcomes were as per the following. They discovered feeble and brief return overflows, specifically from the US to Japan. Unpredictability overflows are increasingly articulated and steady. The data from the home market is generally significant for the volatilities and returns; the commitment from remote markets is less articulated on account of profits than on account of unpredictability. Potential gains as far as determining accuracy while applying our demonstrating methodology are represented by a conjecture assessment.

Ray,Pattanaik,Muduli (2020),the paper looked at the helpfulness of study based proportions of INF predictions to foresee expansion utilizing hybrid variants NKPC. While both three months ahead and 1-yr ahead INF anticipation for family units rise factually critical in clarifying and foreseeing expansion in India, successfully they fill in as substitutes of in reverse looking desires given that family unit desires are seen as to a great extent versatile. Dissimilar to in different nations, this paper doesn't discover a lot of proof on smoothing of the PC. Likewise, no powerful proof is found on anticipations stimulated wage pressures affecting CPI INF.

Trivedi and Tagat (2020),stated that in 2016 2 high value cash notes were pulled back from dissemination in India (prominently known as the 'demonetization' strategy). Information from Indian Reserve Bank indicated that cash available for use has come back to a pre-demonetization levels as well as has surpassed it. Regardless of the ongoing increment being used of non-money substitutes, money use in India perseveres. They presented new proof on the relationship between the shadow economy, casualness, and money available for use utilizing yearly information somewhere in the range of 1970 and 2016. We locate that high-value cash available for use is inelastic to development of substitute installment instruments. Suggestions for cash the executives' approaches are talked about.

Kirby (2020), proposed a system exchanging speculation of IPCA that produces new bits of knowledge about the connection between attributes, factor loadings, and anticipated SRs. Utilizing a two-system detail, he found out a proof of high-unpredictability system in which individual stocks had high contingent anticipated

returns. This stands out strongly from the example of bull and bear systems that is acquired by breaking down just market returns. Albeit definite factor evaluation can be dismissed, attributes are all the more unequivocally identified with valued covariances in high-unpredictability system. Moreover, system exchanging consistency makes a generous gradual commitment to IPCA evaluations.

A study inspected the short-term dynamic modifications and the long-term run connections between chosen factors, exchanging volume and SR developing Greek SM during the time-span 1990 - 1999. Exact outcomes show that short and long term balance relationship exists between expansion, cash supply and exchanging volume and the SP in Athens stock trade. No short or long term balance connection is established between the XR and SP. The consequences of this examination are reliable with the hypothetical contentions and handy improvements that happened in the Greek securities exchanges during the tested time frame. The outcomes likewise infer that the ASE is wasteful on the grounds that freely accessible data on macro-factors and exchanging volumes can be conceivably utilized in foreseeing SP.

Pilinkus (2011), stated a connection between m.e factors and the development of SP that has been recorded in the writing throughout the most recent years. It is frequently contended that SP are decided by some central M.E factors. In this way, these factors can impact speculation choices and rouses numerous analysts to inspect the connection amid SP and macro factors. His paper endeavors to present the ideas of SM and macroeconomic pointers, at that point to introduce a model of the effect of macroeconomic pointers on securities exchange list, and to characterize what macroeconomic markers are connected with securities exchange file in the short and long runs.

The examination researches ten macroeconomic pointers and the primary Baltic securities exchange lists. The data set is monthly, and reach out from the 2000 to 2008. Exact research has been led with the Baltic States: Latvia, Estonia. Lithuania. With reference to consequences of performed examination the explanations of the connections between macroeconomic pointers and SMI from the perspective of speculators have been framed.

Power et al.(2015), examined whether financial factors have informative force for SR in the South Asian securities exchanges. Specifically, utilizing information for 4 South Asian rising financial exchanges over the time-span 1998 to2012, their article inspected the impact of a determination of local, provincial and worldwide monetary factors in clarifying value returns; most past researches that have analyzed this issue have would in general spotlight on just neighborhood or potentially worldwide components. Significant elements are recognized by refining the M.E factors into head segments. Monetary exercises, genuine loan costs, genuine trade rates and the exchange balance speak to local parameters. Provincial variables are spoken to by interregional exchange and local monetary action while worldwide elements are spoken to by world money related resource returns and world financial movement. The VAR outcomes recommend that inspected markets of South Asia are not effective. Both nearby and territorial elements can straightforwardly and in a roundabout way clarify , Pakistani ,Sri Lankan, and Bangladeshi SR while the slacked returns of Pakistani securities exchange and world financial activity can elucidate Indian SRs.

Mathur et al. (2014) researched the connection between local macro factors and SR to assess the impacts of M.E factors on overabundance returns and survey advertise proficiency in the Southeast Asian countries before the 1997 Asian emergency. In light of different tests, monthly SR are best determined via ARDL type models. The invalid theory of a martingale procedure is dismissed, and some factors are recognized that appear to have a specific prescient force for overabundance returns. Additionally, apparently Asian money related specialists appear to have a credibility issue in keeping INF with in range. The absence of validity and straightforwardness may have added to the crisis of 1997.

According to Khan and Jehan(2020),Pakistan has been encountering a diminishing in populace development since mid 1990s which prompted expanding the proportion of working age populace known as segment profit. The segment profit may prompt higher reserve funds and speculation which resultantly spikes monetary development. Given this hypothesis, the examination is first of its sort to experimentally investigate the effect of segment factors on financial development through

physical capital for Pakistan from 1960 to 2014.

Right now, segment change is caught by taking four interchange quantifies to be specific populace development, youthful age reliance proportion, mature age reliance proportion and working age populace proportion. So as to inspect the channel impact, at the initial step, the immediate effect of segment changes on physical capital is assessed. Afterward, the effect of demographically-prompted capital stock is evaluated on monetary development. By utilizing the FMOLS method, the investigation infers that the all out negative effect is most noteworthy in instance of mature age reliance which implies that higher mature age reliance is the most undermining segment change for financial development.

The least destructive segment change is the youthful age reliance. In addition, the exact discoveries feature the significance of capital stock as the intervening direct in the segment change and monetary development relationship. The examination prescribes viable long haul approaches to expand youth work and to improve reserve funds for boosting the advantages of segment profit.

According to Iorgulescu and Stoian (2020),the point of their article is to examine the semi strong effectiveness of market speculation as for monetary strategy data, with regards to the Bucharest S.E. Considering that macroeconomic information arrangement of developing nations for the most part have a constrained size and might be tormented by irregularities and basic breaks, this paper proposes an ARDL Bounds testing approach for examining the connection between stock returns and slacked macroeconomic factors. Besides, this methodology permits them to look at both the long and transient connection between financial approach and SR.

The outcomes demonstrate that, L.T SP completely and productively think about data past financial strategy. Be that as it may, in the short run, the Romanian securities exchange responds proficiently just to sudden monetary approach news, while foreseen financial strategy data shows a noteworthy slacked relationship with current stock returns. Moreover, the outcomes additionally indicated that financial strategy data isn't fused effectively into SP, both in the short and the longterm, and its effect on SR is bigger than the one applied by monetary approach

Krokida et al. (2019), article looked at whether oil value shocks of various origin influence the cost of carbon discharge stipend exchanged under the EU Emissions Trading System; prompting changes in total and area explicit European value returns. The outcomes show that a startling oil-supply disturbance has a fast approaching yet powerless constructive outcome on carbon emission cost, while a positive total interest stun has a solid beneficial outcome on the carbon discharge cost. On the other hand, a positive oil-explicit (preparatory) request stun has a negative yet frail impact on carbon outflow cost. These discoveries are financially significant as positive stuns on the CO2 outflow remittance cost trigger a lessening of the total SR of the European value advertise, though they trigger a huge and diligent increment on European value returns of the oil related enterprises except for the Energy area.

Unal and Kose (2020), discussed effect of oil cost shocks on the securities exchanges of 3 nations: Russia, Iran and Kazakhastan and was inspected through a SVAR)model. For the examination, monthly information from the S.E, the oil cost, INF, modern creation and XR were gathered between 2005 and 2018. As indicated by the consequences of difference disintegration, in these 3 nations, the effect of negative oil value shocks on the S.E was more grounded than the positive shocks, and comprised the biggest wellspring of changes in the 3 S.E. Furthermore, as indicated by the consequences the reaction of the S.E in the 3 nations to negative oil value shocks was profoundly noteworthy. Thus, these nations ought to maintain a strategic distance from macro-economic imbalances and reductions in their S.E because of the negative effect of the oil cost, and ought to rather concentrate on IP that will add to exports. Like this, they can maintain a strategic distance from the negative effect of oil value shocks on their S.E.

Yu and Belo (2013), stated that high paces of government interest in open segment capital conjecture high hazard premiums both at the total and firm-level. This outcome is in sharp stand out from the very much recorded negative connection between the private part speculation rate and hazard premiums.

To clarify the observational discoveries, they expand the neoclassical q-hypothesis model of speculation and indicate open part capital as an extra contribution to the

association's innovation. They showed that the model can quantitatively repeat the observational realities with sensible parameter esteems if open part capital expands the minimal efficiency of private data sources.

Another significant viewpoint which can be a good reason behind affecting the SP synchronicity is intentional divulgences by the organizations. Research directed by Haggard et al. (2008), analyzes the impact of voluntary revelation on SP synchronicity and the level of stock value crashes. Their information comprise of 2084 firms for the years beginning from 1982 - 1995 and the example is constrained to firms for which revelation information is accessible in AIMR's yearly volume and does not contain any firm in directed businesses.

2.3   Hypotheses

To assess the impact of IVs ie. Industrial growth, XR, IR, INF and the dependent variable SR of Stock Markets of emerging and developed economies, following hypotheses statements are constructed:

H_1: There is significant impact of INF on SR of PSX, Shanghai Stock Exchange, S&P500, Bursa Stock Exchange, and Australian Securities Exchange.

H_2: There is significant impact of industrial growth on SR of PSX, Shanghai Stock Exchange, S&P 500, Bursa Stock Exchange, and Australian Securities Exchange.

H_3: There is significant impact of XR on SR of PSX, Shanghai Stock Exchange, S&P500, Bursa Stock Exchange, and Australian Securities Exchange.

H_4: There is significant impact of IR on SR of, PSX, Shanghai Stock Exchange, S&P500, Bursa Stock Exchange, and Australian Securities Exchange.

Chapter 3

Research Methodology

3.1 Data Description and Methodology

This segment of the study deals with the mechanism and the sources of data collection and the use of the correct methodology in order to record the impact of Industrial growth, inflation growth, interest rate and exchange rate on to the stock returns.

3.1.1 Sample and Population

The population consists of SM indices of US, Pakistan, Malaysia, Australia, and China that are: S&P-500, PSX, KLSE, ASX, SSE.

3.1.2 Sample

The sample size represents basically the entire population. The time period of the selected sample ranges from 2003Q1 to 2018Q4. Data of the SM indices of mentioned nations are used that are: S&P-500, PSX, KLSE, ASX, and SSE is used.

3.1.3 Sources of the Data

Secondary data is employed. Secondary data is already readily available for utilization. This study extracted the data of stock returns from the websites of the securities exchanges of Australia, Pakistan, China, US, Malaysia. Furthermore, it extracted the data of the macro-economic variables of all the countries from the IMF database that is International financial statistics (IFS).

3.1.4 Descriptive Statistics

The characteristic of the data is explained by the descriptive statistics. These statistics include a list of measures that are used to determine the statistical behavior of the data. They include mean that gives the data's average value, median that is the dataset's middle value, standard deviation that indicates how much divergence of the data is there from the mean value. S.D and mean are used in combination because if they are used individually, and not together, the two values would be meaningless. Skewness shows the data's negative and positive spread. Whereas, kurtosis measures the attribute of the tail of the data with respect to normal distribution.

3.1.5 Correlation Analysis

The strength of the relationship between the tested variables is assessed by this analysis. This particular tool reports about the relationship's direction among the variables. Its range is between -1 and +1. Higher the value the stronger the linkage between the variables. The low values show that the variables are rarely related.

3.1.6 Testing the Unit Root

It's conducted for finding out whether the chosen data is stationary or it is not. Presence of unit root supports the null hypothesis. This must be removed in order to get accurate and significant results.

3.2 Econometric Model

This research depends on quantitative examination with the assistance of appropriate econometrics model. The initial step was to assemble the data of the 5 factors. Quarterly SRs of the particular indices of each economy, data are gathered from the Stock Exchange website of the respective nation. Quarterly data-sets of Industrial Growth, XR as well as IR are gathered from the official site IFS, for all the 5 nations. Since the data contains both the elements, that are; time-series and cross-sections. The analysis of the data would be purely panel data analysis. The complete details of the sources of data is given in (Appendix 1.1)

3.2.1 Panel Data Analysis

According to statistics, it is a blend of both cross-sectional and time-series data. Panel data is divided into 2 types, namely: balanced and unbalanced Panel Data.

In the words of Gujrati (2003), Balanced Panel Data is where each cross-section is evaluated for the same time periods/ series. Un-balanced Panel Data is where each cross-section is evaluated for different time periods.
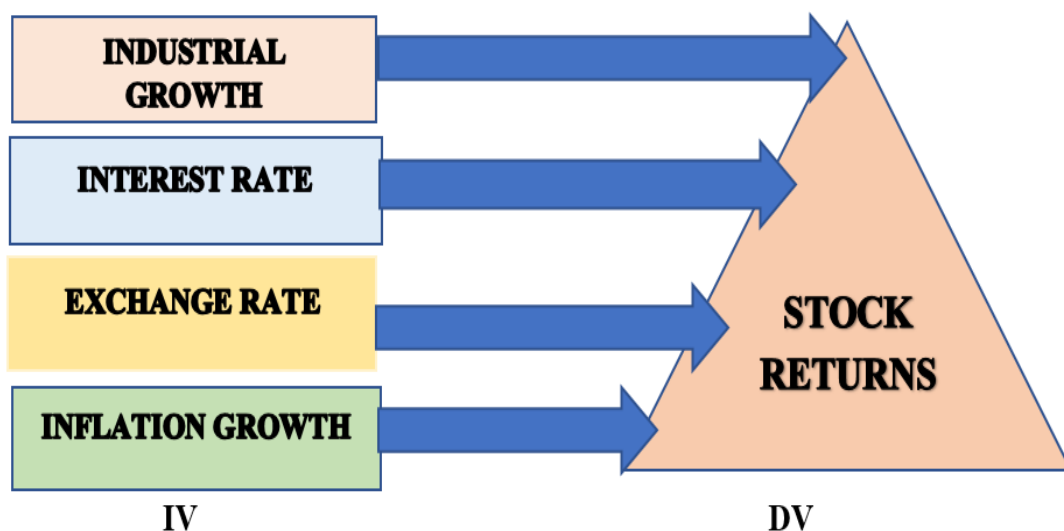
$$SR_{it}= \beta_0 + \beta_1 IR_{it} + \beta_2 IG_{it} + \beta_3 XR_{it} + \beta_4 INF_{it} + e_{it} \qquad (3.1)$$

Where:

it = i represents countries; t represents time series

SR= Stock Returns

IR= Interest Rate (REER)

IG= Industrial Growth

XR= Exchange Rate

INF= Inflation growth

e= Error Term

3.2.2   Common Effect Model

It consists of constant intercept over the entire time period and as well as all the cross-sections.

General equation:

$$\gamma it = \alpha 0 + \beta(X)it + \mu it \qquad (3.2)$$

In this research,

Equation for stock returns, inflation growth, interest rate, Industrial growth, and exchange rate:

$$SR_{it} = \beta_0 + \beta_1 IR_{it} + \beta_2 IG_{it} + \beta_3 XR_{it} + \beta_4 INF_{it} + e_{it} \qquad (3.3)$$

3.2.3   Fixed Effect Model

In this model there are different intercepts covering all cross-sections.

General equation:

$$\gamma it = \alpha i + \beta(X)it + \cdots + \beta k(X)kit + \mu \tag{3.4}$$

Equation for this study,

$$SR_{it} = \beta_0 + \beta_1 IR_{it} + \beta_2 IG_{it} + \beta_3 XR_{it} + \beta_4 INF_{it} + e_{it} \tag{3.5}$$

3.2.4 Random Effect Model

In this model, intercept is treated like the error term. The purpose of this model is to explain the variation between the cross-sections. This model is ruled out if, the list of variables is greater than number of cross sections.

General equation:

$$\gamma it = \alpha + \beta 1(X)1it + \beta 2(X)2it \cdots + \beta k(X)kit + (vi + \mu it) \tag{3.6}$$

Where (in all the above equation):

γ = D.V

X = I.Vs

it = i is countries and t is time series

μ = Error Term

3.2.5 Redundant Fixed Eect Test

This particular study plays a decision-making role between fixed and common effect model. If the value of Chi-square and F stat. of cross section is lesser than 0.05 then xed eect model is applied if P-value isn't signicant then common coecient model will be used.

3.2.6 Hauseman Test

This test helps to determine which model is the most appropriate one to use from the fixed and random effect models. If the probability of Chi-square and F

statistics is less than 5% or 0.05, then F.E.M must be used. Furthermore, if the P-value isn't significant then R.E.M is employed.

TABLE 3.1: List of Variables

VARIABLES	NAME	MEASUREMENT	SOURCES
IV	1) Inflation growth	Growth rate of CPI.	International Financial Statistics website is used
	2) Interest Rate	Real Interest rate values are used as they are.	
	3) Industrial growth	Growth rate of IPI values.	
	4) Exchange rate	National currency per US dollar values are used as they are.	
DV	Stock returns	By taking the log of stock prices.	Respective stock exchange websites are used

Chapter 4

Results and Discussion

4.1 Data Analysis

This particular segment will mention the results of the relationship between stock returns and macroeconomic variables. The first part graphical view of Data and descriptive analysis that is a complete overview of this study's findings:
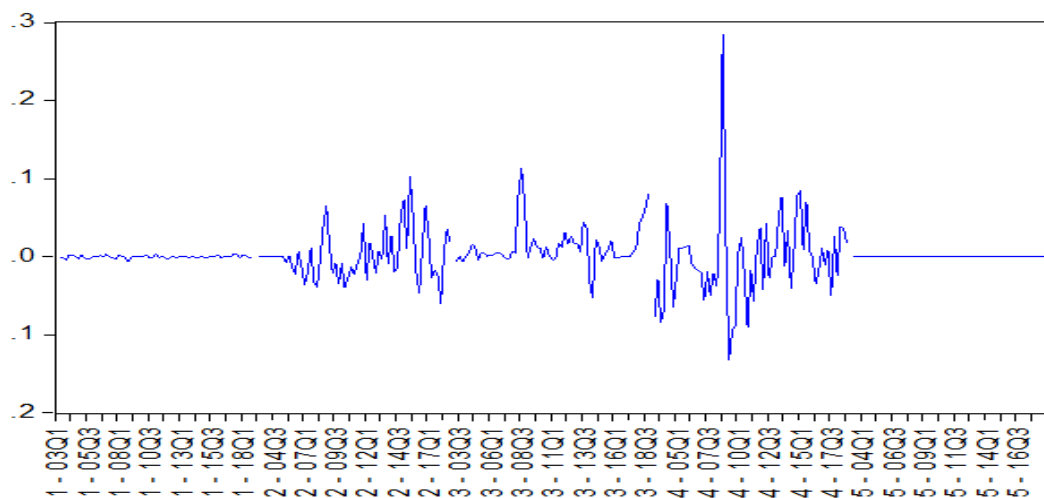
4.2 Graphical View of Data
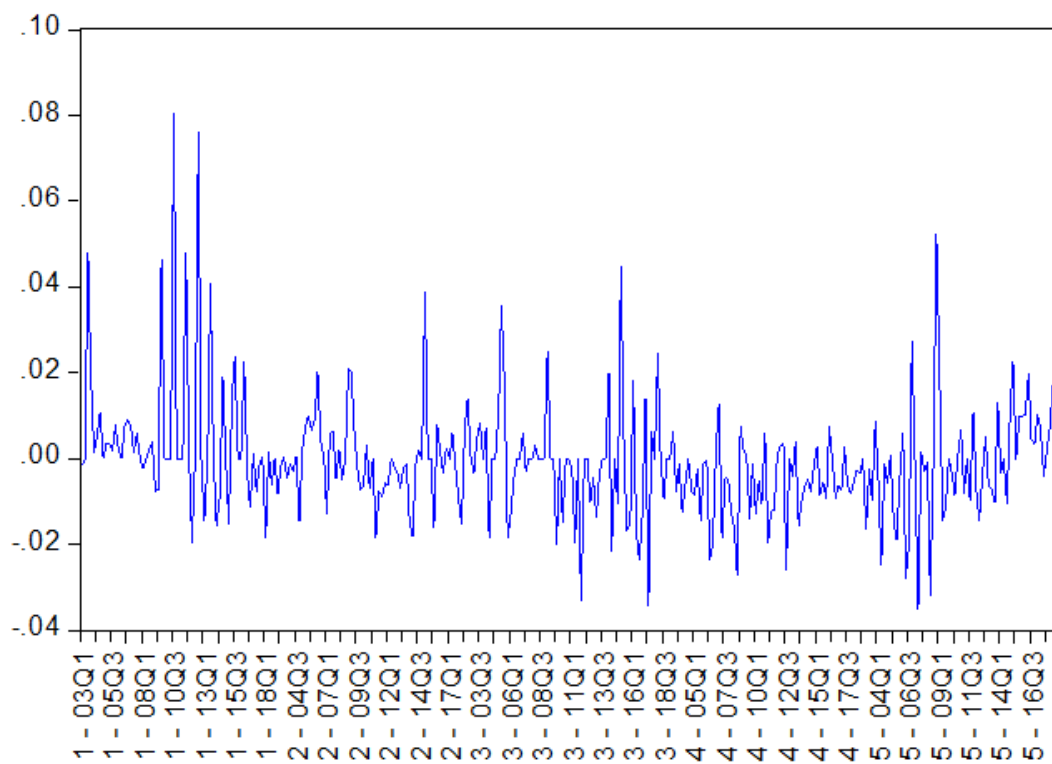

FIGURE 4.1: Exchange Rate
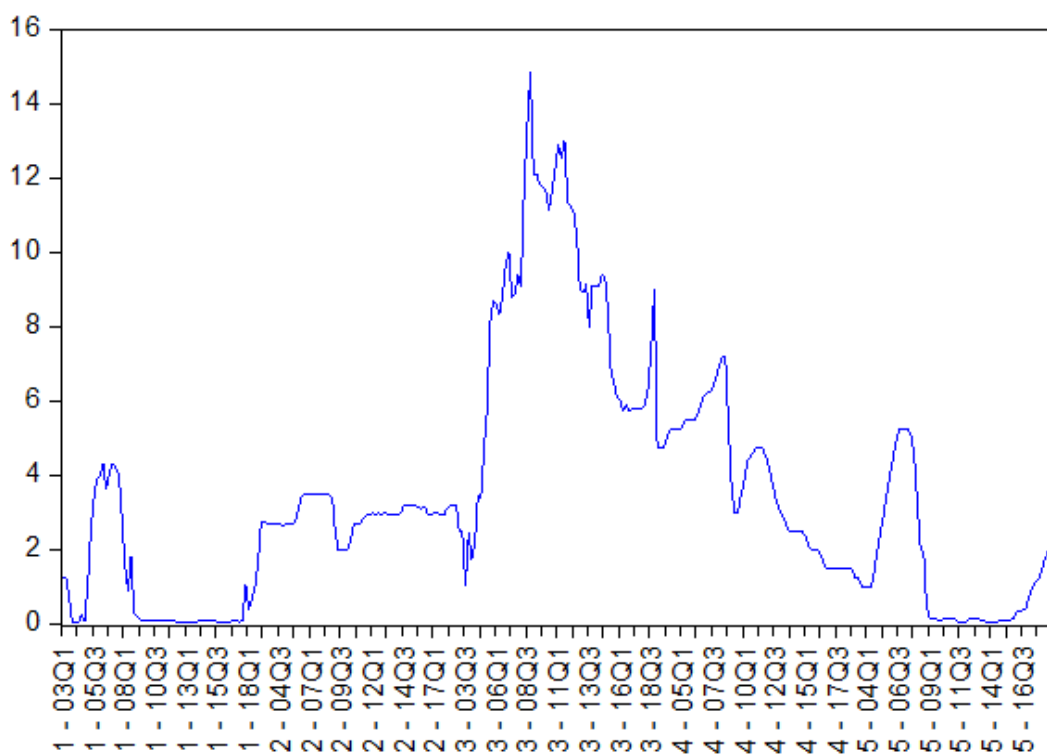
FIGURE 4.2: Inflation Growth
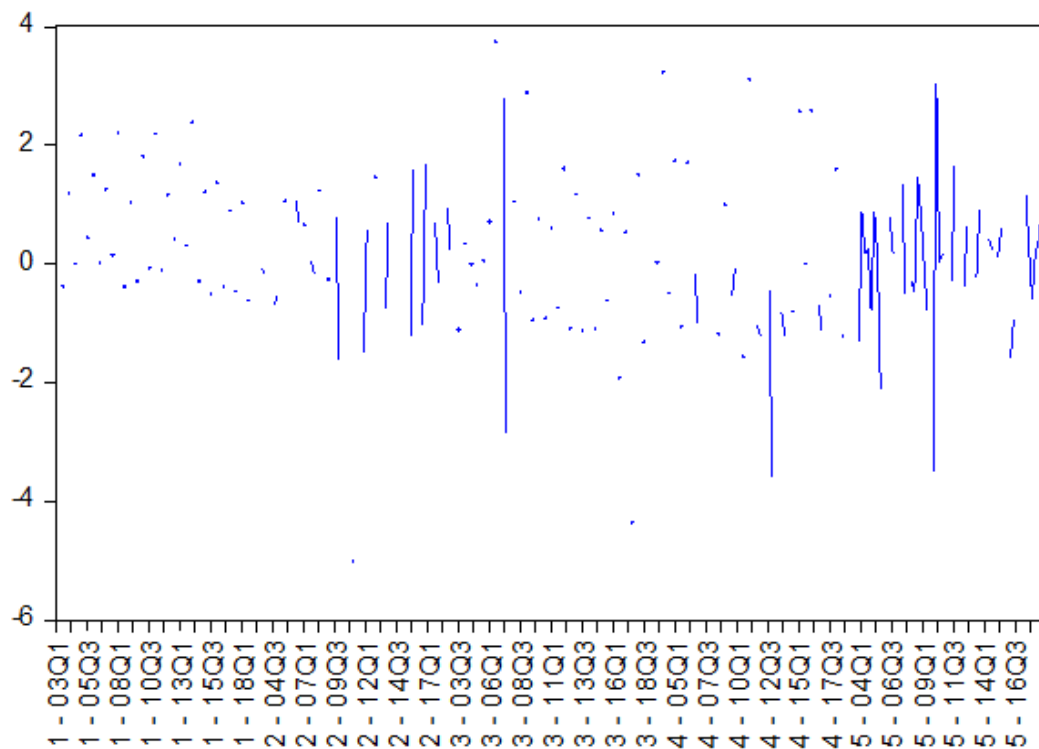

FIGURE 4.3: Interest Rate

FIGURE 4.4: Industrial Growth
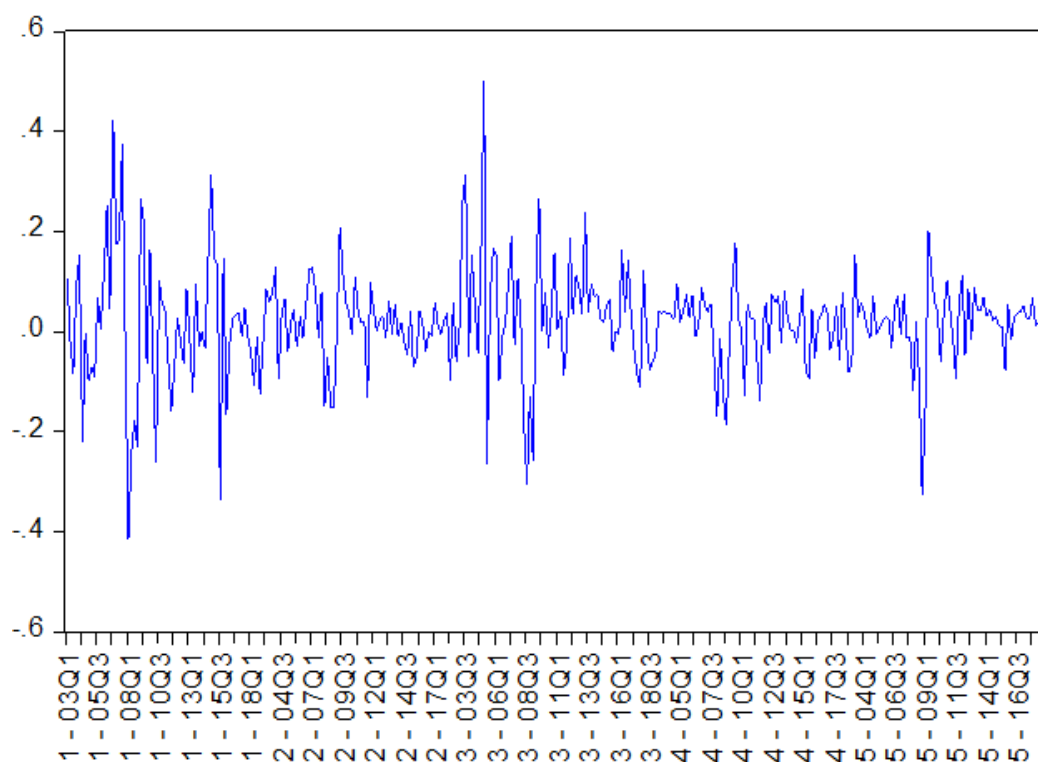
FIGURE 4.5: Stock Returns

4.3   Descriptive Statistics

TABLE 4.1: Descriptive Statistics

Variable	Obs	Mean	Std.Dev	Min	Max
SR	320	0.022426	0.11063	-0.41549	0.50056
XR	320	0.003296	0.02621	-0.09458	0.113
IR	320	3.362023	3.2646	0.05	13.54
INF	320	-0.01189	0.01877	-0.08015	0.0524
IG	320	0.14991	1.34466	-5.02464	3.73286

Table 4.1 indicates the descriptive statistics of the variables involved in the proposed study. The mean value of stock returns is 0.022426. It shows low of -0.415492 and high of 0.500557. Its standard deviation is 0.110627 which indicates fluctuations in this dependent variable. Interest rate also has an impact on the stock market as it indicates the highest fluctuations as compared to rest of the IVs. Its maximum is 13.54000 and minimum is 0.050000. The value of its mean is 3.362023 and the standard deviation is 3.264598. Exchange rate indicates a high of 0.112997 and low of -0.094575 and value of the mean and S.D are 0.003296 and 0.026208, respectively. The min and max values of Inflation growth are, -0.080147and 0.052397, respectively. Its S.D is 0.018774 and mean is -0.01189. The maximum and minimum of Industrial growth are 3.732856 and -5.024638. Value of mean is 0.149910 and S.D is 1.344657

TABLE 4.2: Descriptive Statistics of Australia

	SR	IG	IR	XR	INF
Mean	0.009407	-0.01206	3.904601	1.231081	0.010183
Maximum	0.178991	0.088652	7.250000	1.687077	0.012544
Minimum	-0.18737	-1.000000	1.500000	0.941154	0.008512
Std. Dev.	0.067096	0.133781	1.741327	0.172345	0.001213
Observations	64	64	64	64	64

Table 4.2 indicates the descriptive statistics of the variables involved in the proposed study, in case of Australia. The mean value of stock returns is 0.0094. It shows low of -0.1873 and high of 0.1789. Its standard deviation is 0.0671 which indicates fluctuations in this dependent variable. Interest rate also has an impact on the stock market as it indicates the highest fluctuations as compared to rest of

the IVs. Its maximum is 7.2500 and minimum is 1.5000. The value of its mean is 3.9046 and the standard deviation is 1.741. Exchange rate indicates a high of 1.6871 and low of 0.9412 and value of the mean and S.D are 1.231 and 0.1723, respectively. The min and max values of Inflation growth are, 0.0085 and 0.0125, respectively. Its S.D is 0.0012 and mean is -0.0101. The maximum and minimum of industrial growth are 0.0887 and -1.0000. Value of mean is -0.0121 and S.D is 0.1338.

TABLE 4.3: Descriptive Statistics of China

	IG	INF	IR	SR	XR
Mean	0.001533	0.009684	0.931771	0.009501	7.776578
Maximum	0.150046	0.011504	4.356667	0.423127	7.849000
Minimum	-0.18214	0.007677	0.050000	-0.415492	7.750000
Std. Dev.	0.088089	0.001282	1.393831	0.157286	0.025707
Observations	64	64	64	64	64

Table 4.3 indicates the descriptive statistics of the variables involved in the proposed study, in case of china. The mean value of stock returns is 0.0095. It shows low of -0.4154 and high of 0.4231. Its standard deviation is 0.1573 which indicates fluctuations in this dependent variable. Interest rate also has an impact on the stock market as it indicates the highest fluctuations as compared to rest of the IVs. Its maximum is 4.3566 and minimum is 0.0500. The value of its mean is 0.9318 and the standard deviation is 1.3938. Exchange rate indicates a high of 7.8490 and low of 7.7500 and value of the mean and S.D are 0.0257 and 7.7767, respectively. The min and max values of Inflation growth are, 0.0076 and 0.0115, respectively. Its S.D is 0.0012 and mean is 0.0097. The maximum and minimum of industrial growth are 0.1500 and -0.1821. Value of mean is 0.0015 and S.D is 0.0088.

TABLE 4.4: Descriptive stats of US

	SR	IG	IR	XR	INF
Mean	0.016393	0.002683	1.358385	1.000000	0.010096
Maximum	0.201469	0.031104	5.256667	1.000000	0.012158
Minimum	-0.327	-0.0584	0.073333	1.000000	0.008641
Std. Dev.	0.075800	0.016290	1.667452	0.000000	0.000988
Observations	64	64	64	64	64

Table 4.4 indicates the descriptive statistics of the variables involved in the proposed study, in case of US. The mean value of stock returns is 0.0163. It shows low of -0.3269 and high of 0.2015. Its standard deviation is 0.0758 which indicates fluctuations in this dependent variable. Interest rate also has an impact on the stock market as it indicates the highest fluctuations as compared to rest of the IVs. Its maximum is 5.2567 and minimum is 0.0733. The value of its mean is 1.3583 and the standard deviation is 1.6674. Exchange rate indicates a high of 1.000 and low of 1.000 and value of the mean and S.D are 0.0000 and 1.0000, respectively. The min and max values of Inflation growth are, 0.0086 and 0.0121, respectively. Its S.D is 0.00098 and mean is 0.0101. The maximum and minimum of industrial growth are 0.0311 and -0.0584. Value of mean is 0.0027 and S.D is 0.0162.

TABLE 4.5: Descriptive stats of Malaysia

	SR	IG	IR	XR	INF
Mean	0.015024	0.008892	2.967664	3.596012	0.010055
Maximum	0.208879	0.057114	3.501919	4.448309	0.012049
Minimum	-0.152600	-0.083900	1.999333	3.018548	0.008211
Std. Dev.	0.069689	0.028564	0.374136	0.395829	0.001165
Observations	64	64	64	64	64

Table 4.5. indicates the descriptive statistics of the variables involved in the proposed study, in case of Malaysia. The mean value of stock returns is 0.0150. It shows low of -0.1526 and high of 0.2089. Its standard deviation is 0.0697 which indicates fluctuations in this dependent variable. Interest rate also has an impact on the stock market as it indicates the highest fluctuations as compared to rest of the IVs. Its maximum is 3.5019 and minimum is 1.9993. The value of its mean is 2.9677 and the standard deviation is 0.3741. Exchange rate indicates a high of

4.4483 and low of 3.0185 and value of the mean and S.D are 3.5960 and 0.3958, respectively. The min and max values of Inflation growth are, 0.0082 and 0.0120, respectively. Its S.D is 0.0012 and mean is 0.0101. The maximum and minimum of industrial growth are 0.0571 and -0.0839. Value of mean is 0.0089 and S.D is 0.0286.

TABLE 4.6: Descriptive Stats of Pakistan

	SR	IG	IR	XR	INF
Mean	0.042561	8.290346	0.018713	0.011964	84.44595
Maximum	0.500557	14.87333	0.403361	0.021814	134.8300
Minimum	-0.3046	1.050000	-0.2376	0.006154	57.39130
Std. Dev.	0.133833	3.237898	0.121923	0.005316	20.73810
Observations	64	64	64	64	64

Table 4.6 indicates the descriptive statistics of the variables involved in the proposed study, in case of Pakistan. The mean value of stock returns is 0.0426. It shows low of -0.3046 and high of 0.5005. Its standard deviation is 0.1338 which indicates fluctuations in this dependent variable. Interest rate also has an impact on the stock market as it indicates the highest fluctuations as compared to rest of the IVs. Its maximum is 14.8733 and minimum is 1.0500. The value of its mean is 8.2903 and the standard deviation is 3.238. Exchange rate indicates a high of 134.8300 and low of 57.3913 and value of the mean and S.D are 84.4459 and 20.7381, respectively. The min and max values of Inflation growth are, 0.0062 and 0.0218, respectively. Its S.D is 0.0053 and mean is 0.0119. The maximum and minimum of industrial growth are 0.4043 and -0.2376. Value of mean is 0.0187 and S.D is 0.1219.

4.4 Correlation Matrix Analysis

Table 4.7 elucidates the linkage/relationship among the variables employed specifically in this research. Correlation between industrial growth and Stock returns is negative. This indicates an inverse relationship between these two variables i.e. they move in opposite directions. If industrial growth goes up SR goes down and

Table 4.7: Correlation Matrix

	SR	IG	XR	INF	IR
SR	1.0000				
IG	-0.0795	1.0000			
XR	-0.1569	-0.0677	1.0000		
INF	0.1740	-0.1322	-0.1666	1.0000	
IR	0.0696	-0.0194	0.1928	-0.3164	1.0000

vice versa. On the other hand, linkage between inflation growth and SR is positive i.e. the movement of both the factors is in the same direction. Exchange rate is inversely correlated with SR. IR is positively correlated with SR. Correlation of IG with XR, inflation growth and IR is negative. INF is inversely correlated with XR and IR. IR is positively correlated with XR.

4.5 Panel Unit Root Test Analysis

Existence of unit root in the data gives misleading results as it indicates the data isnt stationary. Unit root can be present in panel data because of numeral observations. Levin, Lin, Chu t*(2002), and Im, Pesaran and Shin W-stat(2003) tests are employed in this study. Table 4.8. indicates and summarizes these 2 unit root tests of the variables involved in the research.

Table 4.8: Unit Root Test Analysis

Levin, Lin & Chu t*			Im, Pesaran and Shin W-stat		
Variables	**Statistic**	Prob.	Statistic	Prob.	
At Level			**At Level**		
SR	-10.6402	**0**	-12.2878	0	
IR	-1.94299	**0.026**	-1.84768	0.0323	
IG	0.2553	**0.7423**	-6.864	0	
INF	0.32046	**0.6257**	0.6926	0.7557	
XR	1.45232	**0.9268**	1.1386	0.8726	
At 1st Difference					
IG	-17.2553	**0**	At 1st Difference		
INF	-16.5113	**0**	-16.0106	0	
XR	-10.388	**0**	-7.82552	0	

Stock returns and interest rate are stationary at level in both the tests, but IG is stationary at 1st difference in LLC test whereas, it is stationary at level in IPS test. The rest of the variables/factors are stationary at first difference in both the tests.

4.6 Result of Hauseman Test

This particular test is used to choose the best and appropriate model from random and fixed effect models. According to redundant fixed effects tests the cross section F p-value is 0.0718, and the Chi-square p-value is 0.059 both are greater than 5% so fixed effect model isn't appropriate. Moreover, the cross section random p-value is 0.0664 i.e. greater than 5%, random effect model is also not suitable for this research. So, simple OLS model is the appropriate model.

TABLE 4.9: Redundant Fixed Effect Tests

Effect Test	Statistics	Prob.
Cross-section F	2.199081	0.0718
Cross-section Chi-square	9.060948	0.0596

TABLE 4.10: Hauseman Test

Test Summary	Chi-Square Stats	Prob.
Cross-section random	8.796323	0.0664

Table6. explains the results of the influence of macro-economic variables on to the stock returns. The value of coefficient of exchange rate is -0.6769 and the p-value is 0.0463, which is significant at the p-value <5. This shows a negative/inverse relationship between XR and SR. This result of XR and SR in our study is in line with the previous studies; Aziz and Ibrahim (2003), Srivastava Agarwal and Srivastav (2010), Obwogi and Laichena (2015).

Moreover, the value of coefficient of inflation growth is 1.1172 and the p-value is 0.0242, which is significant at the p-value < 5. This indicates a positive relationship. This particular result is in line with the previous study undertaken by Sajid et al. (2014) and Al-Sabbagh and Al-Albadi (2006).

Furthermore, interest rates coefficient value is 0.0054 and it's probability value is 0.0560 which is significant at p-value <10. IR has a positive relationship with SR. This result of IR and SR is in line with a previous study by Mugambi and Okech (2016)

Lastly, the value of coefficient of Industrial Growth is -0.00511 and the p-value is 0.4304, which is insignificant. Also the result indicates a negative relationship. This result is in line with prior studies by Kirui, Onono and Wawire (2014) and Ritter (2005).

TABLE 4.11: Effect of Macroeconomic Variables on Stock Returns

Variable	COMMON EFFECT			FIXED EFFECT			RANDOM EFFECT		
	Coef.	t-stats	Prob.	Coef.	t-stats	Prob.	Coef.	t-stats	Prob.
C	0.021	1.648	0.106	0.055	3.054	0.003	0.021	1.648	0.101
IR	0.005	1.926	0.056	-0.004	-0.764	0.046	0.005	1.956	0.052
IG	-0.005	-0.79	0.43	-0.004	-0.586	0.58	-0.005	-0.802	0.423
XR	-0.677	-2.009	0.046	-0.729	-2.18	0.031	-0.677	-2.04	0.043
INF	1.117	2.276	0.024	1.446	2.721	0.007	1.117	2.312	0.022
R-sq			0.074			0.126			0.074
Adjusted R-sq			0.05			0.079			0.05
F-stat			3.087			2.691			3.087
Prob. F-stat			0.018			0.009			0.018

Chapter 5

Discussion and Conclusion

5.1 Conclusion

The study's purpose was to inspect and examine the impact of macro- economic variables on to the SR of 2 emerging, 1 rapidly developing and 2 developed economies.

Many of the prior studies tested this relationship for either a group of developing economies or a set of developed economies but no study has ever taken a mixed sample of emerging, rapidly developing and developed economies.

It therefore seemed appropriate and challenging to test this relationship on a mixed sample of economies. In this study, we utilized quarterly panel data from the years 2003 to 2018. The IVs were inflation growth, exchange rate, interest rate and Industrial growth. Common effect model was a suitable model for this study. According to our findings:

- XR have adverse effects on SR.

- Industrial growth doesn't have any influence on SR even though the relationship is negative.

- On the other hand, INF and IR have direct impact on SR.

5.2 Policy Implication

This particular study sheds light on to the fact that in-order to take full advantage of the stock markets practical implementation of economic policies should take place. This study might help the investors and public to take better decisions by keeping in view the macro-economic factors of the selected countries and the fluctuations caused by these factors in each country's stock market.

5.3 Limitations

There were numerous limitations that were faced by us during this study:

- Initially, we were using GDP instead of industrial growth since quarterly data of GDP wasn't available in case of developing economies we had to switch to Industrial growth.

- Secondly and thirdly, the data of stock prices of Malaysia wasn't available from 1999 and the data of most of the variables wasn't available for the year 2019 so we had to reduce our sample from (1999- 2019) to (2003-2018).

- The data of Interest rate was not readily available.

- There wasn't any study that had a mixture of samples of emerging, rapidly emerging and developed economies. So it was difficult for us to predict the results beforehand.

- Moreover, we had limited time frame. This study could further be treated as a comparative study between developed and developing economies and comparative study between developed economies and between developing economies.

- The sample of the countries and variables could be expanded if the time period wasn't too short.

5.4   Future Direction

For more accurate results:

- Since the study contains stock returns, daily data of can also be used.

- Weekly data of the variables can be used.

- Monthly data of the variables can be used in future.

- A comparative study can be conducted between one emerging economy and one developed economy e.g. Pakistan and USA.

- Moreover, it can be conducted between two emerging or 2 developed economies

- All the four economies can be compared with the Pakistan economy.

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Appendix A

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https://finance.yahoo.com/quote/%5EGSPC/history/

https://data.imf.org/?sk=4C514D48-B6BA-49ED-8AB9-52B0C1A0179B