

Relationship between exchange rate and equity market finance essay

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Exchange rate is the value of one currency in regards to the other currency. It can also be described as the worth of foreign currency in regards to host currency (Khan, Ahmad and Abbas, 2011). Exchange rate as a reflector of a currency volatility is monetary factor that influence prices of shares similar to inflation factor. Devaluation of the domestic currency affects the import by making it expensive in contrast to export. Consequently, importing firms raise overall production cost and due to competitiveness of the market all the cost cannot be transferred on to the customers. This affects the overall firm's earnings, which ultimately affects the share prices (Adam and Tweneboah, 2008). Adler and Dumas (1984) contended that even companies whose all functions are domestic may be influenced by exchange rates, if currency changes affect their input and output prices. While Luetherman (1991) observed that devaluation of the domestic currencies do not give local firms competitive advantage as contended in previous work. Likewise, Solnik (1987) reported that exchange rate movement does not affect the development and growth of share prices. Numerous researches related to relationship between exchange rates and share prices are carried out. The studies on the relationship between these two variables have been carried out in two general groups. The first group examined the impact of equity market on the market directly and finds the link between fluctuations of these two variables. The other group examined the impact of exchange rate on the equity market (Fathi, Samadi and Kahyani, 2011). A rise in demand for export sales may occur, if there is devaluation in domestic currency making exporting goods cheaper. Therefore, the export company value would be benefited from devaluation in domestic currency. In contrast, the

domestic currency appreciation would cause a decline in foreign demand of exporting company's goods, which would affect the profitability of the company and consequently its share prices. However, in case of importing company the relativity of the company value to exchange rate changes is exactly the reverse. Importing company's value would increase and decrease as the domestic currency appreciates and depreciates, respectively (Al-Jafari and Salameh, 2011). Trade effect has displayed this to affect the share prices (Geske and Roll, 1983). Foreign currency and credit have financial prices in terms of exchange rates and interest, respectively. Interest and exchange rates majorly influence the prices, cost, financial positions, and resource distribution and production levels. Eventually, movement in these reflects in stock values – a reflector of stock market performance. For example, investors would prefer to invest in equity market for better returns, if the interest on demand and saving deposits are lowered considering the factors such as transaction charges, risk level and so on constant. This will certainly raise the demand and stock values of affected stocks on the stock market and hence affecting its performance. The concept of investing in dollars also becomes widespread in an environment of relentless exchange rate devaluation. This turns away capital that could be invested on the exchange into assets such as foreign currencies which is non-functioning. Real exchange rate devaluation could lead into fund flight hence affecting the local economy by depriving it from probable investable financial resources (Kyereboah-Coleman and Agyire-Tettey, 2008). Exchange rate as a macro-economic variable has gathered lot of attention in financial economics field in developed and emerging countries due to its effects in the financial

markets, especially the capital market. Contradicting inferences were detected between equity market performance and exchange rate movement - Adjasi et al (2008) documented devaluation of domestic currency causes rise in share market prices in the long run, while Choi et al (1995) observed that exchange rate movements didn't influence equity market returns at all. Jorion (1990) documented considerable relationship between equity returns and the real US dollar exchange rate for US MNCs for the period 1971 to 1987. In contrast, Soenen and Hennigar (1988) found that effective US dollar exchange rate adversely influenced the US equity market index for the period 1980 to 1986. On other hand, Aggarwal (1981) observed positive relationship between revaluation of the United States dollar and share prices. Mukherjee and Naka (1995) also observed positive relationship between these two variables for Japan and Indonesia both being large exporters. Granger et al., (2000) made use of Bayesian Vector auto-regression model to study the correlation between share prices and exchange rates for 9 Asian nations and reported mixed outcomes. After the study, their results suggested that there is no correlation among the exchange rate and share prices for countries like Japan and Indonesia. On the contrary, they indicated that exchange rate influence share prices in Korea, although share prices affected exchange rates in other Asian countries i. e. Taiwan, Thailand, Hong Kong and Malaysia. Patra and Poshakwale (2006) observed through their empirical studies that no short-run or long-run equilibrium relation exists between these two variables. Even, Ming-Shiun et al., (2007) carried out study on the dynamic relationships between these two variables for 7 East Asian countries, which included Thailand, Taiwan, Japan, Korea, Malaysia,

Hong-Kong and Singapore for the year 1988 to 1998. From the study it was observed that before the 1997 Asian financial crisis, a major causal relationship between exchange rates and share prices existed for Malaysia, Japan, Thailand and Hong-Kong. In case of Korea, Singapore and Hong-Kong same relationship was found between share market and exchange rates. Apart from the period of Asian crisis, a causal relationship between foreign exchange market and equity prices were seen for all the nations except for Malaysia. In further study, Abugri (2008) found that the equity market return was greatly influenced by exchange rate movement. Griffin et al (2001) showed that there was a positive effect on the electronic sector in U. S. Kandir (2008) carried out an empirical study on Turkey with the goal of finding the linkage between the two variables. With the help of multiple regression models, the outcomes indicated that exchange rate seem to have a positive linkage with equity portfolio performance. Jefferis and Okeahalam (2000) reported for South Africa, the equity market is positively affected by the exchange rate. The same results were found by studies carried out by Phylaktis & Ravazzolo, 2000; Hsing, 2011; Granger et al., 2000; Abdalla & Murinde, 1997; Cheng' et al., 2011; Aggarwal, (1981); and Apte, 2001. Aubgri (2008) studied the relationship between stock returns and exchange rate for emerging markets like Brazil, Mexico, Argentina and Chile. The relationship between these variables was negative for Brazil and Mexico, while Argentina and Chile did not respond significantly. Adam and Tweneboah (2008) examined the relationship between these variables in Ghana and found negative relationship between stock market returns and exchange rate.

2. 6 Relationship between Interest rate and Equity Market

The interest rate is the most important macro-economic variable influencing the equity market. It is the cost of capital, which is one of the major factors affecting production. Even for the valuation process it is been used as a discount factor. Hence, they affect directly the cost, profit and Net present value of the future cash flows of a company. The numerator and denominator of the valuation process are largely affected by higher interest rates (Erdugan, 2012). The correlation between share prices and interest rates is extensively studied. Opportunity cost of carrying money will rise as there is increase in interest rate and individual holds interest bearing securities as substitute for stocks thereby causing fall in share prices (Adam and Tweneboah). T-bills are the arguable debts allotted by the government of a country and are backed up by its non-risky feature with maturity period of 1 or less than 1 year. Interest rates are the cost loaner receives for lending money to the borrower and the cost borrower bears for borrowing it from the loaner (Khan, Ahmad and Abbas, 2011). Investors are motivated to buy more government instruments in case of high T-bill rates. T-bills thus are likely to compete with shares and bonds as an alternative resource for investors. The estimated association between T-bill rates and share prices is thus negative. According to the Dividend Discount Model, as the interest rate increase, the stock price and required rate of return which are inversely related would decrease. Gan et al (2006) contended that opportunity costs of carrying money increases with rise in interest rate, and the set off caused by possessing other interest bearing securities would cause a decline in stock price. Fiscal deficits make government interfere in the financial markets with

much lucrative options that would force out shares. A rise in government borrowing by offering T-bills may cause an impact on the share market as investors re-adjust their portfolio balances. Lower T-bill rates instigate shift of local capital from the money market to the share market (Pilbeam, 1992). Long lasting and large fiscal deficits along with issuance of high yielding but less risky government offerings like the T-bill, negatively affect the bonds and shares issued by private companies for long term funds. In this study, it has been found that T-bill rate affects share market performance similar to impact of interest rate on demand and saving deposits (Kyereboah-Coleman and Agyire-Tettey, 2008). French et al. (1987), in theory found inverse relationship between long and short term interest rate and share returns. Other empirical studies found evidence indicating Treasury bill movement comprise information significant to the estimation of share prices (Doukas, 1989; Kandir, 2008; Tandon and Urich, 1987; Johnson and Jensen, 1993). These studies suggested, Treasury bill yield movements are significant to investors as they are indicators of future economic performance. The influence of nominal interest rate on share prices is also estimated to be adverse; the degree of real economic activity is supposed to have positive influence on future cash flows and hence will influence share prices to move in the same direction (Fama, 1990). Maghyereh (2003) observed that nominal interest rates are seen in share prices in the Jordanian equity market. While, Melina (2005) inferred that a unidirectional causal relationship exists between the interest rates and the common index of Athens stock market, with direction from the interest rates to the common index of Athens share market. Even, Uddin and Alam (2007) studied the

linkage between stock prices and interest rates, stock prices and movement in interest rates, movement of stock prices and interest rates and movement of stocks and movement of interest rates for Dhaka stock market. They observed that interest rates are inversely related to stock prices and movement of interest rates have major inverse relationship with stock prices movement. Zocias and Fat (2008) in their study on return series behavior for the Bucharest Stock Exchange index, reported weak relationship between interest rates and equity market index. Likewise, Alam and Uddin (2009) analyzed the impacts of interest rates on share market and their study documented relationship between interest rates and share market index for 15 developed and developing nations; Spain, Australia, Germany, Mexico, Bangladesh, Canada, Venezuela, Chile, Colombia, Italy, South Africa, Jamaica, Japan, Malaysia and the Philippine. The Equity market performance stationary is examined and the results show that none of these equity markets are efficient in weak form. It is also observed that for all countries interest rates have substantial relationships with stock prices and for 6 nations, it is evident that movements of interest rates have major inverse relationship with movement of stock prices. Hence, if the interest rate is well managed for these nations, it will be the great advantage of these nations' equity market through demand pull method of more participants in equity market and supply push method of more extensional capital of firms. Even, Suliaman et al., (2009) observed that interest rates in Pakistan are majorly influencing equity prices. Chen et al (1986) specified that interest rate affects the stock return positively. Kandir (2008) examined the Turkish market and observed a positive relationship between these two variables.

Kim and Moreno (1994) studied the relationship between bank loans and stock prices. They observed a strong positive relationship between stock prices movement and bank lending rate for Japan for period 1970 to 1993.

2. 7 Overview and Performance of Stock Exchange of Mauritius

SEM was incorporated 24 years back on 30th of March, 1989 under the Stock Exchange Act 1988 and is regulated by FSC. Since 2008, it has become a public company and today it is one of prominent exchanges in African continent. It functions two markets one being the Official Market and the other being the Development and Enterprise Market (DEM). The Official Market has a market capitalization of approximately USD 5. 7 billion as on 31st December 2012 and a listing of 41 companies. While, DEM currently have 47 companies listed with a market capitalization of approximately USD 1. 4 billion as on 31st December 2012. SEMDEX, SEM7, SEMTRI are different indices of SEM. SEMDEX represents index of all the ordinary shares while SEM-7 includes the 7 biggest eligible stocks of the Official List, calculated in terms of market capitalization (SEM, n. d). The IPO market is considered as a vital source for raising capital and for the growth of the private sector. With the introduction of government's privatization program, the IPO market gained even more importance. According to some studies the market is efficient in the weak form (Bundoo, 2007). As per the study by Magnusson and Wydick (2002) the SEM clears both Random Walk I and II models of market efficiency. It is also been observed that SEM is at par with developing share markets in Asia and Latin America. In the year 1994, Stock Exchange of Mauritius was accessible for foreign investors, suggesting that they did not

need approval to invest in shares except the investment relates to kind of Management control of Mauritian firm or for acquiring more than fifteen percentages in a sugar company (Wbiconpro, n. d). There are no constraints on repatriation of fund, dividends and interests (USEmbassy, n. d.). The introduction of Central Depository System has enabled quick, efficient clearing and settlement of transactions and also reduced inherent risks in the procedure (Africansea, n. d.). Since beginning, efforts have been taken to make sure that the SEM stays at the lead of Institutional reform and growth while rendering quality services to its participants and contributing for the growth of financial sector in Mauritius.

YEAR	No. of Listed companies	Market Capitalisation (Rs)	Annual Turnover in (Rs)	Market Capitalization/ GDP %	P/E ratio	Dividend Yield %
1999	43	41,731,973	736,978,180	3.20	38.738	985.032
2000	42	37,034,909	667,204,247	3.16	46.732	20014032,147,404,1563,292,410,159
2001	24	38,641,073	426,521,587	2.995	339.832	0033951,229,930,4412,989,174,317
2002	38	641,073	426,521,587	2.995	339.832	0033951,229,930,4412,989,174,317
2003	39	51,229,930	441,298,917	3.557	435.742	0044067,033,922,9812,819,024,443
2004	38	199,934	852,005	4.180	038,466,3224,547,982,065	43.187,984.64200641116,981,444,9075,992,247,91056.9611.953.66200741173,094,638,41511,825,521,41674.9313.22.8

Table : Stock Exchange of Mauritius: Market Highlights
Source: SEM Factbook, 2012[1] Table 2 depicts market performance from year 1999 to 2007. During this period SEM has shown a major rise and an incredible growth rate in market capitalization. However, there are no major changes in number of listed companies. In year 2007, there were in total forty one companies listed on SEMDEX having a market capitalization of MRU 173, 094, 638, 415 and priced at MRU 1852. There was

a phenomenal rise in market capitalization and the price level in year 2006 and 2007. The percentage change in annual rate in SEM has been incremental. The P/E ratios and dividend yield is comparatively low and considering that the SEM is an extremely small market by international standards. Again for year 2007 the P/E ratio was quiet significant at 11. 95, whereas it experienced lowest dividend yield for that year. The SEM shows low levels of trading activity although it has a descent rise in annual turnover. The market capitalization compared to GDP was significant in this period. Graph : Stock Market Indicators for SEMSource: SEM Factbook, 2012[2]

CHAPTER 3: RESEARCH PLAN

3. 1 IntroductionThe aim of this research work is to study of the impact of macro- economic variables on stock market performance, taking special reference of Stock exchange of Mauritius. This part of the research work will give a brief idea about the research plan. It will focus on the research methods and type of data sources used for the research. The initial chapter listed research questions which will allow the researcher to accomplish the research objectives and thus the aim of this study. This chapter will also specify the model that will be used to check the impact of independent variables on the dependent variables.

3. 2 Research Criteria

The researcher would consider the validity, authenticity, reliability, generalizability and transparency of data and use relevant data and methods

for answering the research questions and would draw some general conclusions from the research.

3. 3 Research Perspectives

This research is a study of impact of macro-economic variables on the stock market performance considering small economy like Mauritius. The research conducted will primarily focus on secondary data and with the help of macro-econometric model, the impact will be traced. There are three different research perspectives that and this research will have the nature of positivist approach, which suggests that social world and natural world can be studied in a similar way. Also my research will have quantitative approach. Certainly quantitative approach gives objective and unprejudiced outcomes that have not been affected by the researcher. This approach focuses on numerical outcomes and tries to avoid the influence of human element.

3. 4 Research Design

Research design is a complete master plan of the research process, from the theoretical groundwork to the collection, analysis and interpretation of the data. The primary role of research design is to make sure that required data in accordance with the problem at hand is gathered meticulously and economically. It also assists the researcher to decide which research methods would be appropriate for the specific study. This study used explanatory survey research in the pursuit to answer the puzzle on the impact of macroeconomic variables that on stock market performance in the Stock Exchange of Mauritius which has been of major concern. The explanatory survey research was used for rigorous study and in-depth

research into the macroeconomic variables to achieve the objective of the study. The study will carry out empirical research by using a dependent variable that is the stock market index and different independent macroeconomic variables. The research will be a time series analysis where the researcher will make use of quarterly data in a continuous series for particular time period. The empirical research used particular software Eviews 7 for quantitative analysis.

3.5 Research Methods

Conceptual model:

This research will totally rely on secondary data. The researcher has used the macro-econometric model proposed by Kyereboah-Coleman and Agyire-Tettey (2008), which is a modified version of Omole and Falokun (1996). This will allow the researcher to empirically analyze the impact of macroeconomic variable on the performance of the share market index. Variables which are considered important for Stock Exchange of Mauritius are included in this model. Thus, the empirical model is as follows: $Semdex_t = \alpha_0 + \alpha_1 CPI_t + \alpha_2 Exchratet + \alpha_3 Lenratet + \alpha_4 TBt + \epsilon_t$, (1) where, $Semdex_t$ - represents the stock price index CPI_t - Proxy for inflation rate $Exchratet$ - the MUR-US dollar Exchange rate $Lenrate_t$ - the lending rate TB_t - 91 days treasure bill α 's - the coefficients of the variables ϵ_t - the error term. The researcher has taken the logs of the variables in the equation (1) which enables to carry a partial elasticity analysis, thus allowing to measure the impact of a change. The estimable equation (2) is as follows: $L Semdex_t = \alpha_0 + \alpha_1 L CPI_t + \alpha_2 L Exchratet + \alpha_3 L Lenratet + \alpha_4 L TBt + \epsilon_t$, (2)

Type of Data

Secondary Data

The different types of data available for empirical study are time series, cross section and panel data (Gujarati, 2003). This research will make use of time series quarterly data spanning from the first quarter of 1999 to the last quarter of 2007, thus enabling use of 36 data points, enough for effective regression analysis and the variables are considered in their natural logarithm form. SEM suffered worst period in 2008 - 2009 due the global financial crisis. It was considered as a period of extreme uncertainty, high fluctuations and unparalleled pressure for the financial world. The Mauritius official market suffered a loss of approximately 45 percentages in its value between 15th September 2008 and 3rd March 2009. The time series data till last quarter of 2007 has been considered, so as to avoid the influence of global financial crisis on the findings and results of the study and to majorly focus on the independent variables. The data will be obtained from different sources. Stock market performance for Mauritius is measured by Semdex price. Daily closing values of the SEMDEX price index are obtained from Stock Exchange of Mauritius. Consumer Price Index is used as a proxy for inflation rate and 91 days Treasury bill is considered to represent the saving interest rate. Data on Interest rates, Exchange rates, Lending rates and 91 days Treasury bill rates is obtained from Bank of Mauritius and Central Statistics Office, Mauritius. The stock exchange performance variable is collected from SEM.

Explanatory Variables

Measured by

Symbol

Stock Market performanceSemdex Price IndexSEMDEXInflation

RateConsumer Price IndexEPIExchange RateMUR- US dollar Exchange

RateEXCHRATELending RateBank of Mauritius lending rateLENRATESavings

Interest Rate91 days Treasury BillTBTTable : Measurement of Explanatory

Variables

3. 6. Research Ethics

3. 6. 1 Ethical consideration

The researcher has followed each and every detail of the Coventry's Ethical guidelines, taking all the efforts to conduct research ethically, to acknowledge other's help, to avoid harm to anyone and to conduct the research to the highest standards of moral conduct. The researcher has ensured that all his examination of secondary data is original. All secondary used are gathered from the most authentic and reliable sources such Central Statistics Office and Bank of Mauritius. The researcher has also ensured that the analysis and findings are carried on the basis of honesty and unprejudiced perspective.

3. 6. 2 Plagiarism

The researcher has acquired a strong understanding of the act of plagiarism and realized how to avoid it. The researcher has acknowledged the contribution, for the information used from other sources, by using proper in text citations and references at the end of the research. Harvard style of

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referencing and in text citations has been used. The researcher confirms and promises that this dissertation is his own honest and sincere work.

CHAPTER FOUR: RESULTS AND ANALYSIS

LSEMDEXLCPIDLEXCHRATEDLLENRATEDLTBM

Mean6. 3792664. 7520353. 3659952. 2042272. 113623

Median6. 1955354. 7795333. 3785422. 3040842. 195000

Maximum7. 5241354. 9330343. 5093042. 5400262. 543176

Minimum5. 8316484. 4067193. 2304491. 5560371. 488400

Std. Dev. 0. 4780110. 1437630. 0766620. 2769080. 304777

Skewness0. 827663-1. 076838-0. 212200-0. 884738-0. 376296

Kurtosis2. 5756693. 4841192. 2611382. 7589892. 119199

Jarque-Bera4. 3802387. 3090381. 0890484. 7837002. 013307

Probability0. 1119030. 0258740. 5801180. 0914600. 365440

Sum229. 6536171. 0733121. 175879. 3521676. 09044

Sum Sq. Dev. 7. 9973000. 7233710. 2056992. 6837343. 251125

Observations3636363636

Table : Descriptive Information of log variablesDLSEMDEXLCPIDLEXCHRATEDLLENRATEDLTBM

Mean0. 041803-0. 0017660. 003959-0. 006461-0. 008394

Median0. 0501530. 0116380. 006884-0. 031155-0. 013129

Maximum0. 2209750. 3121750. 0611990. 4913880. 322318

Minimum-0. 082870-0. 283711-0. 077798-0. 408868-0. 302135

Std. Dev. 0. 0729110. 1023300. 0315490. 1477980. 116865

Skewness0. 423189-0. 799691-0. 6135260. 8212560. 172603

Kurtosis2. 5247817. 4659693. 6984906. 6710014. 594883

Jarque-Bera1. 37402732. 816732. 90725623. 587223. 883280

Probability0. 5030760. 0000000. 2337210. 0000080. 143468

Sum1. 463121-0. 0618200. 138569-0. 226124-0. 293780

Sum Sq. Dev. 0. 1807460. 3560300. 0338410. 7427070. 464354

Observations3535353535

Table : Descriptive Information of

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first Difference of log variables Table 4 and 5 describes the statistical data for log and first difference log variables respectively. The Semdex has average quarterly return of 4.1% with a standard deviation of 7.2%. The returns are highest compared to other variables and standard deviation is also high in comparison to other variables except for exchange rate. SEMDEX provides high return with high risk compared to all the variables. Mauritius has experienced very low inflation rate for the period of study

Variable	ADF Test Probability	Comments	Conclusion
L Semdex	3.1854031	Failed to	Rejected
ho Non-Stationary DL Semdex	-4.1511740	0.0027	Rejected
ho Stationary LCPI	-2.1273030	0.2357	Failed to
Rejected ho Non-Stationary DL CPI	-6.0177560	0.9133560	3.226
Failed to	Rejected	ho Non-Stationary DL Exchr	-4.2662790
0.002	Rejected	ho Stationary LL enrate	-1.801930
0.3735	Failed to	Rejected	ho Non-Stationary DL enrate
-5.6979350	Rejected	ho Stationary LTB	-1.9456550
0.3084	Failed to	Rejected	ho Non-Stationary DL TB
-3.993050	0.0041	Rejected	ho Stationary

Note: Indicates significance at 10 percent

Table : Augmented Dickey-Fuller Test Results

4.1 Unit Root Test

Unit root test is a test of stationarity and non stationarity, which is widely used over the years. In theory, time series data are normally considered to be non-stationary and use of difference time series is very common for stock market study. Varying mean or a time varying variance or both of them are observed in a non-stationary data. If the time series data is non-stationary, the study of its nature is limited for the time period under observation.

Hence, the results cannot be generalized with other time period. A stationary

time series will have no changes in their mean and variance. If the time series is non-stationary, the estimation outcomes will be spurious and will have no sense. However, the non-stationary time series can be changed into stationary. For this it is important to first know whether a time series is stationary or not (Gujarati, 2003). Augmented Dickey-Fuller Test is carried out to know whether there is unit root present in variables. ADF is employed to the log variables at level and also on their first difference. The researcher proposes 2 hypotheses: In Null hypothesis (H₀) the variables have a unit root and another do not have unit root. First the test is carried out on the logarithms of the variables in level. The ADF test results are presented in Table 6. It is evident from the ADF test that unit root is present in log levels of all variables. The first difference of the log variables is tested for stationarity and it is observed that there is no unit root present in these variables. The t- statistics for all first difference is less than critical value at 10%, hence they are stationary series.

4. 2 Co-integration Test Engel and Granger (1987) developed the model of co-integration in relation to non-stationary variables. The variables of ECM may not be stationary and then one attempts to estimate the model by differencing the variables. This method removes the long run response. The variables tend to drift together over a period of time and that instigates a co-integration test. The researcher conducts an ADF test for the co-integration on the residuals created from the model estimation. The co-integration test results are shown in Table 7. The t- statistics value of the residual is less than the critical values at all level, which indicates that co-integration relationship exists

among the variables. As per Engel and Granger the variables have long term relationship among them since they are co-integrated.

Variable

ADF Test

Probability

Comments

Conclusion

ECM-4. 1732370. 0025Failed to Rejected hoNon-StationaryNote: Indicates significance at 10 percentTable : Results of unit-root test on Residual of Equation

4. 3 Error Correction model

Engel and Granger suggest that if 2 series are co-integrated then an Error correction model will signify efficiency in them. The ECM was initially used by Sargan (1984) and then was promoted by Engle and Granger. To find the long run relationship of the variables, the error correction term is considered in the short run equation. The ECM term corrects the disequilibrium in the model and it is the lag of the time series variables created from the model projected in their levels. The error correction model is depicted in equation 3.

$$DL\text{Semdext} = \alpha_0 + \alpha_1 DLCPit + \alpha_2 DL\text{Exchratet} + \alpha_3 DLLenratet + \alpha_4 DLTBt + \epsilon_t, \dots\dots\dots(3)$$

The results of the estimated error correction model are shown in Table 8. The R² value is less than Durbin-Watson test statistic, hence the results are not spurious and they make sense. Durbin-Watson test statistic of 2. 4 signifies that autocorrelation in the residuals does not exist.

The adjusted R squared value of 41% suggests that 41% of the variations in <https://assignbuster.com/relationship-between-exchange-rate-and-equity-market-finance-essay/>

Semdex are explained by inflation rate, exchange rate, lending rate and the Treasury bill. The results indicate that all variables, apart from inflation rate, are statistically significant in explaining the variation in Semdex performance. Dependent Variable: SEMDEX Method: Least Squares Date: 03/10/13 Time: 00: 25 Sample (adjusted): 1999Q3 2007Q4 Included observations: 34 after adjustments Variable Coefficient Std. Error t-Statistic Prob. C 0.0431750 0.0119303 6.189560 0.0012 CPI(-1) -0.1761050 0.105062 -1.6762000 0.1048 EXCHRATE(-1) -1.4166740 0.377757 -3.7502240 0.0008 LENRATE 0.2477690 0.0718393 4.489400 0.0018 TB(-1) 0.2137760 0.0952132 2.2452420 0.0328 ECM(-1) 0.2996520 0.1612931 8.578060 0.0737 R-squared 0.499495 Mean dependent var 0.043724 Adjusted R-squared 0.410119 S. D. dependent var 0.073103 S. E. of regression 0.056146 Akaike info criterion -2.762933 Sum squared resid 0.088267 Schwarz criterion -2.493575 Log likelihood 52.96986 Hannan-Quinn criter. -2.671074 F-statistic 5.588689 Durbin-Watson stat 2.397495 Prob(F-statistic) 0.001080

Table :

Results of the ECM

4. 4 Inflation and Stock Market Performance

The inflation rate has a negative coefficient that shows inverse relationship between stock market performance and inflation rates as justified by Fama (1981), but as the p value is more than 5% it is statistically insignificant. This indicates that there is no relationship between inflation rate and stock market performance. The negative coefficient is -0.17 and the p value for inflation is 10.48% that is more than 5%. The results of the research indicate there is no significant relationship between stock market and inflation rate in Mauritius case and the result is consistent with Yartey (2008). Even Salameh

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(1997) found that there is no relationship between inflation rate and share prices in Jordan. Theoretically rising inflation rate tends to raise the cost of living and a need of investment decreases while the consumption needs increases. This certainly affects the need for market instruments which causes decline in the size of stock traded. Hence, inflation is expected to have a negative effect on the stock market performance (Adam and Tweneboah; Kyereboah-Coleman and Agyire-Tettey, 2008). Even though there are numerous studies on the relation between these factors, no general consensus has been gained whether the link is positive or negative. Fama (1981), Jaffe and Mandelker, (1977), Linter, (1973), Oudet, (1973), Bodie, (1976), Nelson, (1976), Geske and Roll (1983), Chatrath et al., (1997) and Adrangi et al., (1999) documented inverse relationships between stock returns and inflation rate, while Suliaman et al., (2009) reported positive relationship between these two variables. Therefore is no general consensus on actual relationship between stock market return and inflation rate.

4. 5 Exchange rate and Stock Market Performance

The exchange rate has a negative coefficient of -1. 41 and p value less than 5%, which indicates that it is statistically significant. This shows that when there increase in exchange rate by 1 percent, the Semdex performance declines by 1. 41%. This exactly reflects how badly exchange rate affects Mauritius. The exchange rate indicates a negative relationship with the stock market performance and it shows the fact that the major participants of the market have suffered from the depreciation of the Mauritian rupees. This result is consistent with Aubgri (2008) and Adam and Tweneboah (2008).

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Aubgri (2008) studied the relationship between stock returns and exchange rate for emerging markets like Brazil, Mexico, Argentina and Chile. The relationship between stock market returns and exchange rate was negative for Brazil and Mexico, while Argentina and Chile did not respond significantly. Adam and Tweneboah (2008) examined the relationship between these variables in Ghana and found negative relationship between stock market returns and exchange rate. Aggarwal (1981), Mukherjee and Naka (1995), Kandir (2008), Jefferis and Okeahalam (2000), Phylaktis & Ravazzolo, 2000 and Hsing, 2011 reported positive relationship between stock market returns and exchange rate. Granger et al., (2000) made use of Bayesian Vector auto-regression model to study the correlation between share prices and exchange rates for 9 Asian nations and reported mixed outcomes. After the study, their results suggested that there is no correlation among the exchange rate and share prices for countries like Japan and Indonesia, which is in line with our study. Even Patra and Poshakwale (2006) observed through their empirical studies that no short-run or long-run equilibrium relation exists between these two variables.

4. 6 Interest rate and Stock Market Performance

Lending rate have positive coefficient of 0. 24 and p value is less than 5%, which indicates that it is statistically significant. Positive coefficient means that an increase in the lending rate by 1 percent will result in increase in performance of Semdex by 0. 24 percent. Kim and Moreno (1994) studied the relationship between bank loans and stock prices. They observed a strong positive relationship between stock prices movement and bank lending rate for Japan for the period 1970 to 1993. Treasury bill has a

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positive coefficient of 0.21 and p value of 3.2%, which indicates that there is short run relationship with Stock market performance. An increase in Treasury bill by 1% will cause 0.21% increase in stock market performance. Kandir (2008) examined the Turkish market and observed a positive relationship between these two variables. French et al. (1987) and Uddin and Alam (2007) reported negative relationship between interest rates and stock market performance. Error correction term which indicates the speed at which adjustment occurs in the long run equilibrium is positive and insignificant at 1 percent level. Positive sign in ECM term indicates movement away from equilibrium.

CHAPTER 5: CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Stock Market plays an important role in the development and growth of an economy. It has been a foundation of modern finance. The relationship between macro-economic factors and stock market performance has been of main concern in the academic and practitioners' literature since many decades. This study investigates the impact of macroeconomic variables, such as inflation rate, exchange rate, lending rate and Treasury bill, on the stock market of Mauritius. Unit root, co-integration and error correction model tests are used for quarterly data series from 1999 to 2007, to find the short run and long run relation. The rationale behind the research is that around the globe, share markets are considered as financial platforms where capitals can be raised to fund investment so as to obtain high development and economic growth. Major studies carried out on this institution have rather focused on its relation with economic growth and that to for <https://assignbuster.com/relationship-between-exchange-rate-and-equity-market-finance-essay/>

developed nations. It was therefore crucial to study the impact of macroeconomic variables and stock market performance from a small country's perspective as these fundamentals have experienced unstable movement over years. Inflation rate variable was found to have low negative relationship but statistically insignificant impact on the stock market performance. The study proposes strong inverse relationship between exchange rate and stock market returns. This relationship depends on whether the country is export dominant or import dominant. Countries having export dominance experience negative influence on stock market due to increase in exchange rate, whereas for import dominant nation the fall of exchange rate increases the stock returns. Lending rate has shown positive relation with stock market which was also observed by Kim and Moreno (1994) for Japan. From previous studies it is evident that bank lending rates respond positively to the rise in stock prices but there appears to be no effect from bank loans to stock prices. Even Treasury bill was found to have positive effect on performance of the stock market. This might be the case due to varying conditions in Mauritian economy.

5. 2 Recommendation

It has been observed that relationship with statistical significance exists between the dependent variables and the independent variables, except for inflation rate. Hence, investors should consider changes in macroeconomic factors in order to predict the stock prices. There is requirement to have efficient information system enabling investors to have information related to the movement and changes in macroeconomic variables. To gain major benefits from stock market, there is the requirement to employ sensible

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economic policies using these results. The results of this study are of specific interest and significance to Investors (both domestic and international), financial economists, government, policy makers and all other stakeholders of Stock exchange of Mauritius. To have robust growth in stock market the concern bodies should have control over exchange rate and manage the interest rates properly. From statistical point of view, one of the limitations of this research work is the small size of 36 observations, which has restrictive element, as the number of lags considered, reduces the number of observations and cause specification errors in the study (Gujarati & Porter, 2008). Further studies on Stock Exchange of Mauritius should identify other macroeconomic variables that may influence stock market performance.