THE DEVELOPED NATION'S CURRENCY RATE FLUCTUATIONS ON US DOLLER – AN IMPACT STUDY FOR THE PERIOD 2004-2009

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ABSTRACT

If the exchange rate of the currency of a nation is lower in the international market, then the prices of the export products of that nation will be cheaper. By the law of the propensity of price leverage acting on the demand and supply in the market, the lower currency rate nation gets an advantage to boost their exports. But the increased demand for export will be offset if the quality, longevity, utility value and after sales infrastructure (wherever applicable) are not good.

The present paper is carried out to answer this. Through this paper an attempt is made to study the association ship between the Dollar, Euro, Yuan and Yen. The reason for selecting the Euro Yuan and Yen has been that they are currencies of developed nation. There is huge trading between the nations therefore the exchange rate also fluctuate accordingly depending on the export and import of the respective countries. In this project various statistical tools are applied so that this relationship can be statistically examine to find out the connection between them. The research further observes the degree of their impact so as to find out highly impacting currency. The research would help in identifying the currency which leads to maximum affect on U.S.DOLLAR so that one can know which currency to follow in order to observe change in U.S.DOLLAR

Key words: Currency, Developed Nations, Fluctuation, US Doller.

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EXCHANGE RATE –AN ILLUSION. Many illusions are associated with exchange rate exsists. They are:

⇒ Many people think that if the exchange rate of the domestic currency of a nation is strong, then the nation is economically prospering. It is an absolute illusion!

⇒ Exchange rate of any one currency with reference to any other currency reflects only the buying power, among the currencies and it has nothing to do with the domestic economic prosperity of both the nations.

⇒ The exchange rate of any one currency with reference to any other currency depends on the balance of payments between the 2 nations. It is mainly reflected by the Export and Import parity

⇒ The exchange rate is like an aero plane! People get into an aero plane at the ground level. The plane takes off and flies at about 35,000 feet above the ground level. But it is a fact that the people are also flying at 35,000 feet and navigate! The people on board have not gained the power to fly like this on their own strength. It is the illusionary support of the plane to the people inside, which has made them to perform this feat.

⇒ If the exchange rate of the currency of a nation is lower in the international market, then the prices of the export products of that nation will be cheaper. By the law of the propensity of price leverage acting on the demand and supply in the market, the lower currency rate nation gets an advantage to boost their exports. But the increased demand for export will be offset if the quality, longevity, utility value and after sales infrastructure (wherever applicable) are not good.

The country's growing economy led to the import increase to the point where gold resources were depleted. As a consequence, the amount of money in circulation decreased, interest rates grew and economic activity slowed down to the stage of recession. Then prices usually fell and other countries started to import cheap goods which led to an increase in gold reserves, monetary growth, lower interest rates and overall strengthening of the economy of the initial country. Most countries had been developing according to this "boom-bust" model before World War I, which interrupted the flow of commerce and gold. When currency fluctuations are considered, it is the exchange rate between the US dollar and the euro that gets the

most attention. This not only reflects the size of the respective economies using these two currencies, but also the fact that the US dollar is the most widely traded currency today. That's because it effectively serves multiple roles: as an investment currency; as a reserve currency for many central banks; as a transaction currency in many international commodity markets such as oil and foodstuffs; and as an invoice currency in many contracts.

The US dollar is thus the most imperative currency today. Therefore one would like to know that is there exists certain relationship between fluctuation in U. S. Dollar exchange rate and other currencies. The exchange rate are affected by various factors such as Government Budget, Balance of Trade, Inflation, Capital Movement, Interest Rates, Economic Growth, Gold and Currency Reserve Assets, GDP, Current Account, Industrial Production, Money Supply Growth, Trade and Industry Dynamics, Political Condition, Market psychology etc. One therefore would like to know that does the exchange rate of one currency have a bearing on another country exchange rate.

The present paper is carried out to answer this. Through this paper an attempt is made to study the association ship between the Dollar, Euro, Yuan and Yen. The reason for selecting the Euro Yuan and Yen has been that they are currencies of developed nation. There is huge trading between the nations therefore the exchange rate also fluctuate accordingly depending on the export and import of the respective countries. In this project various statistical tools are applied so that this relationship can be statistically examine to find out the connection between them. The research further observes the degree of their impact so as to find out highly impacting currency. The research would help in identifying the currency which leads to maximum affect on U.S.DOLLAR so that one can know which currency to follow in order to observe change in U.S.DOLLAR.

OBJECTIVES OF THE STUDY: -

- To find out that whether developed nation currency impact U S DOLLAR
- To find out degree of impact on U S DOLLAR
- To find out the currency which has the highest impact on U.S.DOLLAR

METHODOLOGY: -

To carry out research currency fluctuation rate for last five years are studied. The currencies taken into consideration are EURO, CHINESE YUAN, JAPANESE YEN and U S DOLLAR. The exchange rate of the above mention currencies are taken in INR terms. The total values obtained were around seven thousand which is vast data to observe. So in order to reduce data and facilitate observation two data reduction techniques were used. The quantitative techniques applied are as follows:

❖ **DATA REDUCTION TECHNIQUES**

- **DECILE:**

A decile is any of the values which divide a frequency distribution into ten groups of equal frequency.

- **QUARTILE:**

A quartile is any of the three values which divide the sorted data set into four equal parts, so that each part represents one fourth of the sampled population.

❖ **STATISTICAL TOOLS**

- **PARTIAL CORRELATION**

In probability theory and statistics, partial correlation measures the degree of association between two random variables, with the effect of a set of controlling random variables removed.

- **CORRELATION**

As the word Indicates CO + RELATION which means relationship between two or more variable in such a way that by *fraction change in one variable leads to fraction change in another variable*. Where in this research project we have defined 4 variables and the effect is observed on 3 variables.

- **REGRESSION ANALYSIS:**

Technique for determining the statistical relationship between two or more variables where a change in a dependent variable is associated with, and dependents on, a change in one or more independent variables

- **MULTIPLE REGRESSION:**

The general purpose of multiple regression is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable. For example, a real estate agent might record for each listing the size of the house (in square feet), the number of bedrooms, the average income in the respective neighborhood according to census data, and a subjective rating of appeal of the house. Once this information has been compiled for various houses it would be interesting to see whether and how these measures relate to the price for which a house is sold.

- **R-SQUARE:**

R2 is a statistic that will give some information about the goodness of fit of a model. In regression, the R2 coefficient of determination is a

statistical measure of how well the regression line approximates the real data points. The smaller the variability of the residual values around the regression line relative to the overall variability, the better is our prediction. **ADJUSTED R SQUARE:** Adjusted R2 is a modification of R2 that adjusts for the number of explanatory terms in a model. Unlike R2, the adjusted R2 increases only if the new term improves the model more than would be expected by chance. The adjusted R2 can be negative, and will always be less than or equal to R2.

- **BETA ANALYSIS**

Beta value explains the magnitude & relative contribution of each independent variable in prediction of each dependent variable.

SAMPLE TAKEN: -

Four currencies are chosen for the research purpose. They are as follows:

(A) CHINESE YUAN
(B) EURO
(C) JAPANESE YEN
(D) U S DOLLAR

The sample period chosen for the study is of five years starting with **1st April 2004** to **31st March 2009**. The total values collected sums up to 1830 for a single currency which give an aggregate figure of 7320 taken all the four currency together.

HYPOTHESIS: -Dollar is highly impacted by developed nation currencies

SIGNIFICANCE:

The study will help in finding out the relationship EURO, YUAN, YEN and U S DOLLAR. It will figure out the impact of developed nation currencies on U. S. DOLLAR. It helps in analyzing the relationship between the currencies and degree of their association. It shows the variation in one currency on account of other and their mutual fluctuation. It assists in studying the interrelation between the currencies and the cause and effect bond. The research will quantify the level of contribution of currencies in U. S. DOLLAR

REVIEW OF LITRETAURE:

Miles, William (2006), said that ***Currency*** unions have been promoted as a means to increase trade, investment and growth. A crucial issue in giving up the domestic ***currency*** is the loss of a mechanism to absorb real external shocks. High real exchange volatility between countries considering such a policy would suggest that a ***currency*** union could be quite costly in terms of large, persistent misalignment and thus balance of payments imbalances. Von Hagen and Neumann (1994) assessed the readiness of nine European countries for Euro-zone membership by examining real exchange ***rate*** variability. In this paper we analyze their predictions, and find them to be quite accurate for Europe. All of the ***nations*** which appeared ready for the Euro have joined. Of the three which did not appear prepared, two have retained their own ***currency***, and the third has experienced real appreciation and stagnant exports. Given the prescience of this method, he applied it to nine Latin American ***nations***. A number of countries in this region have begun to form a ***currency*** union by unilaterally adopting the U.S. dollar. The Von Hagen-Neumann method finds very high real exchange ***rate*** variability between the U.S. and the Latin American ***nations***-indeed much higher than that between Germany and the countries which would later adopt the Euro-so adopting the dollar could cause very painful adjustment in Latin America. Melecky, Martin (2008), An exchange ***rate*** between two currencies can be materially affected by shocks emerging from a third country. A ***US*** demand shock, for example, can affect the exchange ***rate*** between the euro and the yen. Because positive ***US*** demand shocks have a greater positive ***impact*** on Japanese interest rates than on euro area rates, the yen appreciates against the euro in response. Using quarterly data on the United States, the euro area and Japan from 1981 to 2006, this paper shows that the third-***currency*** effects are significant even when exchange rates evolve according to uncovered interest parity. This is because interest rates are typically set in response to output and inflation, which are in turn influenced by other exchange rates. More importantly, third-***currency*** effects are also transmitted to the actual exchange ***rate*** through the expected future exchange ***rate***, which is, in a multi-country set-up, influenced by third-countries' fundamentals and shocks. Third-***currency*** effects have a stronger ***impact*** on the ***currency*** of a relatively more open economy. The analysis implies that small open economies should avoid strict forms of bilateral exchange ***rate*** targeting, since higher trade and financial openness work as a force intrinsically amplifying ***currency*** fluctuation. Ramchander (2002), The collapse of Bretton Woods or the fixed exchange ***rate*** system in 1973, along with the coinciding growth in global trade, and greater mobility of capital have all contributed to an increase in exchange ***rate*** volatility. Concerns about exchange ***rate*** levels and volatility have prompted central banks to actively intervene in foreign ***currency*** markets

from time to time. This paper presents an empirical investigation of the relationship between central bank intervention actions and ***currency*** volatility. This paper is distinguished from earlier studies by employing expectation-based information contained in the ***currency*** futures prices to estimate conditional volatility in the USUS$/DM and ***US$/¥*** returns, and by incorporating the simultaneity of the relationship between the Fed's intervention operation and exchange ***rate*** volatility into the model. Results suggest a lack of relationship between Fed's intervention activity and the ***US***$/DM conditional volatility during the 1985-1993 period. However, Fed intervention is associated with negative changes in the ***US$/¥*** volatility during the 1985 to 1993 period as a whole, and specifically during the 1 January, 1985 to 21 February, 1987 Plaza period and the 21 February, 1987 to 31 December, 1989 Louvre period. Furthermore, the results document a strong feedback effect (bidirectional causality) between ***US$/¥*** volatility and intervention actions. During the post-Louvre period (1 January, 1990 to 31 December, 1993), it is found that the Fed's intervention led to an increase in the volatility of ***US$¥***, without a corresponding feedback relationship. The sign reversal is attributed to the breakdown of the Louvre Accord and the mixed nature of monetary policy signals given during this period.

Lobo, Bento J. (2006), This study examines whether tightening and easing actions of the Federal Reserve symmetrically influence ***currency*** markets. Using daily data on four exchange rates from 1989 to 2001, we find that changes in the Fed's interest ***rate*** target are positively related to changes in the value of the dollar. Surprises associated with monetary tightening have a larger announcement effect as compared to monetary easing for the British pound, German mark, and Canadian dollar, whereas the opposite is true for the Japanese yen. The results appear to be driven by the reactions of foreign central banks to Fed actions, the Fed's credibility as a policymaker, and by the change in the Fed's disclosure policy beginning in 1994. Kaiser, Johannes (2009), A novel approach which conjoins elements of experimental macroeconomics and behavioral finance allows ***us*** to study the components of industrial firms' ***currency*** trade decisions in the controlled environment of a laboratory. We analyze how firms operate in the ***currency*** market in a deterministic two-country model with two currencies. Consistent with presumptions of real-world behavior, subjects in our experiment tend to base their trade decisions on definite rather than on uncertain key data: Interest rates have a high ***impact***, while technical analysis plays a minor role. We finally demonstrate how a simple decision rule that incorporates our findings might outperform the actually observed trade decisions.

Yuanyan Zhang (2009), A number of East Asian and oil-exporting countries have generated a large inflow of foreign currencies as a result of their continued trade surplus and surging foreign investments in recent decades. In China, the booming foreign inflow was accompanied by a modest appreciation of the real exchange ***rate***. This paper argues that the failure of the real exchange ***rate*** to appreciate in China is more the result of a higher demand for real monetary balances than of exchange ***rate*** manipulation. Such "sterilization by the people" is more evident in earlier episodes than in more recent ones. This can be due to the emergence of competitive financial instruments, a deeper financial market, and a more ***developed*** social security system. Coudert, Virginie (2009), Pegged exchange rates are often pointed out as more prone to risk of overvaluation, because their real exchange rates have a tendency to appreciate. We check this assumption empirically over a large sample of emerging and developing countries, by using two databases for de facto classifications by Levy-Yeyati and Sturzenegger (2003) and by Reinhart and Rogoff (2004). We assess ***currency*** misalignments by estimating real equilibrium exchange rates taking into account a Balassa effect and the ***impact*** of net foreign assets. Pegged currencies are shown to be more overvalued than floating ones.

Kandil, Magda (2008), The article analyzes interactions between exchange ***rate*** fluctuations and the macroeconomy in a sample of developing and ***developed*** countries. Theory suggests that the degree of substitution between tradables and non-tradables determines the combined effects of ***currency*** fluctuations on consumption. Evidence shows that unanticipated ***currency*** appreciation may increase consumption of tradables or decrease consumption of non-tradables. However, in developing countries, the positive dependency of consumption on exchange ***rate*** shocks. ***Currency*** depreciation is observed to decrease consumption in a number of developing countries. Gil-Alana, Luis A (2008), This paper deals with the relationship between the balance of trade and the exchange ***rate*** in the ***US***/UK case. Many authors have studied this issue for many countries, but despite the intensive research, there is still no

agreement about the effectiveness of ***currency*** devaluation to increase a country's balance of trade. We first analyse the relationship between the two variables using unit roots and co-integration methods, and the results are ambiguous. We try a new approach based on fractional integration. The unit root hypothesis is rejected in case of the trade balance in favour of smaller orders of integration, while this hypothesis is not rejected for the exchange ***rate***. Thus, the two series do not possess the same order of integration. We sort this problem out by taking the exchange ***rate*** as an exogenous variable, and including it in a regression model where the residuals might follow a fractionally integrated model.

Eichengreen, Barry (2006), The last two decades have seen far-reaching changes in the structure of the international monetary system. Europe moved from the European Monetary System to the euro. China adopted a dollar peg and then moved to a basket, band and crawl in 2005. Emerging markets passed through a series of crises, leading some to adopt regimes of greater exchange ***rate*** flexibility and others to rethink the pace of capital account liberalization. Interpreting these developments is no easy task: some observers conclude that recent trends are confirmation of the "bipolar view" that intermediate exchange ***rate*** arrangements are disappearing, while members of the "fear of floating school" conclude precisely the opposite. We show that the two views can be reconciled if one distinguishes countries by their stage of economic and financial development. Among the advanced countries, intermediate regimes have essentially disappeared; this supports the bipolar view for the group of countries for which it was first ***developed***. Within this subgroup, the dominant movement has been toward hard pegs, reflecting monetary unification in Europe. While emerging markets have also seen a decline in the prevalence of intermediate arrangements, these regimes still account for more than a third of the relevant subsample. Here the majority of the evacuees have moved to floats rather than fixes, reflecting the absence of EMU-like arrangements in other parts of the world. Among developing countries, the prevalence of intermediate regimes has again declined, but less dramatically. Where these regimes accounted for two-thirds of the developing country subsample in 1990, they account for a bit more than half of that subsample today. As with emerging markets, the majority of those abandoning the middle have moved to floats rather than hard pegs. The gradual nature of these trends does not suggest that intermediate regimes will disappear outside the advanced countries anytime soon.

Kian Teng Kwek (2006), Based on six daily spot nominal exchange ***rate*** returns denominated in the ***US*** dollar, viz-à-viz UK Pound, Japanese Yen, Swiss Franc, Canadian dollar, Australian dollar and Singapore dollar, this paper tries to find a natural Dollar ***currency*** by comparing the linear/nonlinear dynamics in the conditional variance of these bilateral exchange ***rate*** returns (time varying volatility vs. asymmetries). The characteristics of the unconditional distribution of the FX returns justified the use of the GARCH class of models of conditional volatility. Strong time varying symmetric effects are apparent in all the series examined, especially in the Australian dollar. Further asymmetric effects in unexpected appreciations and depreciations of currencies are examined based on the GJR model, the ST GARCH model and the ANST-GARCH model (which encompasses several asymmetric models). The estimates of asymmetric models show weak evidence of asymmetries in most of the currencies, except in the Japanese Yen and UK Pound. Further findings show that the Japanese Yen is a non-natural Dollar country. However, there may possibly exist some mild deterministic asymmetric effect in the UK Pound. Based on the symmetric GARCH model, a trader/investor may consider Australian dollar as the relatively most 'likable' ***currency***, i.e. relatively the least volatile ***currency*** and relatively the most synchronized with the ***US*** dollar.

ANALYSIS OF DATA

No. OF QUARTILE VALUES

The values obtained after applying decile and quartile respectively to the exchange rate of the given four currencies i.e. U.S.DOLLAR, EURO, YUAN, & YEN for the last five years are as given at the end, see the **Table -1 & Graph – 1.**

CONTRIBUTION OF CURRENCIES TAKEN COLLECTIVELY

Here the exchange rates of four currencies are considered. The independent variables are EURO, YUAN & YEN and the dependent variable is U S DOLLAR.

PARTIAL CORRELATION COEFFICIENTS – Pl. see Table – 2 at the end.

(Coefficient / (D.F.) / 2-tailed Significance)

* The value of U. S. DOLLAR is kept constant (Controlling for U. S. DOLLAR) to see association of independent variables i.e. EURO, YUAN & YEN.

PARTIAL CORRELATION

Partial correlation (r) has been applied because before making any interpretation between dependent variable and independent variable. We want to confide that there exists certain relationship between independent variable. Since from the table it is clear that most of the values are above .5 (i.e. there exist a partial relationship between variable, one variable can be explained in terms of another variable) Some of the values are above .85 which confirms that variables are highly correlated.

The above two statement confirms that there exist a relationship between independent variables (EURO, YUAN & YEN) and dependent variable (U. S. DOLLAR).

CORRELATION – Pl. see at the end Table -3

* Correlation is significant at the 0.01 level (2-tailed).

N represents the no of values i.e. 45. This are the values obtained after applying Decile and Quartile to the exchange rate of four currencies considered i.e. EURO, YUAN, YEN & U. S. DOLLAR for the last five years.

From the above two tables we can say that there is

- High degree of correlation between Euro and Yuan i.e. .804
- Moderate degree of correlation between Euro and Yen i.e. .556
- High degree of correlation between Yuan and Yen i.e. .785

MODEL SUMMARY – Pl. see at the end Table - 4

(a) U. S. DOLLAR v/s YEN
(b) U. S. DOLLAR v/s YEN, EURO
(c) U. S. DOLLAR v/s YEN, EURO, YUAN

REGRESSION COEFFICIENT (R)

From the model summary it is clear that the values of regression coefficient is more than .8 (value of R) for all the three cases i.e. U. S. DOLLAR v/s YEN, U. S. DOLLAR v/s YEN, EURO, U. S. DOLLAR v/s YEN, EURO, YUAN i.e. there exist high degree of associationship between dependent and independent variable. It indicates that the variable moves in same direction and we can infer that the significance level with reference to fluctuation of exchange price is more than 80 % for all three cases i.e. EURO, YUAN & YEN have immense impact over fluctuation in U. S. DOLLAR exchange rate.

R SQUARE

1. R2 is equal to .65 i.e. 65.2% of the variation in U S DOLLAR is explained by the variation in YEN.
2. R2 is equal to .701 i.e. 70.1 % of the variation in U S DOLLAR is explained jointly by the variation of YEN & EURO
3. R2 is equal to .771 i.e. 77.1 % of the variation in U S DOLLAR is explained jointly by the variation of YEN, EURO & YUAN.

ADJUSTED R2

1. Adjusted R2 is equal to .644 which is less than R2 hence no of observation per independent variable decreases.
2. Adjusted R2 is equal to .686 which is less than R2 hence no of observation per independent variable decreases.
3. Adjusted R2 is equal to .755 which is less than R2 hence no of observation per independent variable decreases.

From the above data the value of R2 (Euro) with respect to U. S. Dollar is .644>.5 indicates higher degree of associationship with U. S. Dollar. Similarly Yuan & Yen are also having high degree of associationship with U. S. Dollar.

BETA ANALYSIS

Beta value explains the magnitude & relative contribution of each independent variable in prediction of each dependent variable. Since Beta value has negative impact i.e. .266 & .047 which is negligible. It indicates that all the three currencies have high degree of impact on U S DOLLAR which is confined from model summary

(5.1.B) GRAPHICAL REPRESENTATION INDIVIDUAL CURRENCY V/S U. S. DOLLAR

(A) CURVE FIT OF U. S. DOLLAR V/S EURO – Pl. see at the end Table – 5 & Graph - 2

- The independent variable here is EURO
- The dependent variable is U. S. DOLLAR In the above graph

- Blue curve indicate the quadratic movement of EURO with respect to U. S. DOLLAR.
- Red curve indicate the progressive growth of U. S. DOLLAR. with respect to preceding year.
- Green curve indicate the RMS (Root Mean Square) value of EURO v/s U. S. DOLLAR. It indicates the actual trend which is again confirmed with the help of different values of R, R2 and BETA.

(B) CURVE FIT OF U. S. DOLLAR V/S YUAN – Pl. see at the end Table – 6 & Graph – 3

- The independent variable here is YUAN
- The dependent variable is U. S. DOLLAR In the above graph

- Blue curve indicate the quadratic movement of YUAN with respect to U. S. DOLLAR.
- Red curve indicate the progressive growth of U. S. DOLLAR. with respect to preceding year.
- Green curve indicate the RMS (Root Mean Square) value of YUAN v/s U. S. DOLLAR. It indicates the actual trend which is again confirmed with the help of different values of R, R2 and BETA.

(C) CURVE FIT OF U. S. DOLLAR V/S YEN – Pl. see at the end Table – 7 & Graph - 4

- The independent variable here is YEN
- The dependent variable is U. S. DOLLAR. In the above graph
- Blue curve indicate the quadratic movement of YEN with respect to U. S. DOLLAR.
- Red curve indicate the progressive growth of U. S. DOLLAR. with respect to preceding year.
- Green curve indicate the RMS (Root Mean Square) value of YEN v/s U. S. DOLLAR. It indicates the actual trend which is again confirmed with the help of different values of R, R2 and BETA.

(5.1.C) CONTRIBUTION OF CURRENCIES TAKEN INDIVIDUALLY

REGRESSION TABLE-1

MODEL SUMMARY – Pl. see at the end – Table -8

- Independent variable is EURO
- Dependent Variable is U. S. DOLLAR

1. R2 is equal to .071 i.e. 7.1 % of the variation in U S DOLLAR is explained by the variation in EURO.
2. The value of adjusted R2 with respect to U. S. Dollar is .071<.5 indicates less degree of associationship with U. S. Dollar.

COEFFICIENTS (A) – Pl. see at the end Table - 9

- Independent variable is EURO
- Dependent Variable is U. S. DOLLAR

The significance level of EURO in U S DOLLAR is low i.e. .266

REGRESSION TABLE-2

MODEL SUMMARY – Pl. see at the end – Table - 10

- Independent variable is YUAN
- Dependent Variable is U. S. DOLLAR

1. R2 is equal to .424 i.e. 42.4 % of the variation in U S DOLLAR is explained by the variation in YUAN.
2. The value of adjusted R2 with respect to U. S. Dollar is .424<.5 indicates less degree of associationship with U. S. Dollar.

COEFFICIENTS (A) – Pl. see at the end Table-11

- Independent variable is YUAN
- Dependent Variable is U. S. DOLLAR

The significance level of YUAN in U S DOLLAR is high i.e. .652

REGRESSION TABLE-3

MODEL SUMMARY – Pl. see at the end Table - 12

- Independent variable is YEN
- Dependent Variable is U. S. DOLLAR

1. R2 is equal to .65 i.e. 65.2% of the variation in U S DOLLAR is explained by the variation in YEN.
2. The value of adjusted R2 with respect to U. S. Dollar is .652>.5 indicates high degree of associationship with U. S. Dollar.

COEFFICIENTS (A) – Pl. see at the end Table - 13

- Independent variable is YEN
- Dependent Variable is U. S. DOLLAR

The significance level of YEN in U S DOLLAR is high i.e. .807

5.2 FINDINGS

PARTIAL CORRELATION – Pl. see at the end Table – 14 & 15

MODEL SUMMARY (Currencies Impact Taken Collectively) – Pl. see at the end Table - 16

MODEL SUMMARY (Currencies Impact Taken Individually) – Pl. see at the end Table - 17

- The hypothesis that Dollar is highly impacted by developed nation currencies proves to be true.
- The study explains that the variables consider i.e. currencies exchange rate of YUAN, YEN, EURO and U.S.DOLLAR are interrelated and interdependent.
- The currencies exchange rate move in sympathy. A change in any of the currencies (i.e. EURO, YUAN & YEN) will lead to change in U.S.DOLLAR.
- There exist moderate (Euro and Yen) to high degree (Euro & Yuan and Yuan and Yen) of correlation between the given currencies i.e. EURO, YUAN, YEN and U.S.DOLLAR.
- The regression analysis justify that there exist a cause and effect relationship between the U.S.DOLLAR (effect) and EURO, YUAN & YEN (cause).

- There is a high degree of positive correlation between currencies.(U .S.DOLLAR and EURO, YUAN & YEN)
- The values of U.S.DOLLAR Exchange rate can be predicted on the basis of EURO, YUAN & YEN.
- The study clarify that EURO, YUAN & YEN collectively accounts for 77.1% significance level as a result they are having high impact on U.S.DOLLAR
- The value of adjusted R2 increases i.e. with the inclusion of other two currencies the model improves. Therefore the three currencies collectively fit the model and define the change better.
- The R-square is close to 1.0 (i.e. .878 for YEN, EURO & YUAN) indicates that the study have accounted for almost all of the variability with the variables specified in the model.
- The value of adjusted R2 < R2 indicates Euro, Yuan &Yen contributes to U. S. Dollar to a great extent.
- The BETA values further reveal that the U.S.DOLLAR is highly impacted by the given currencies i.e. EURO, YUAN, YEN and the prediction made are correct.
- The values of R and R2 (taken independently) conclude that YEN and YUAN affect U.S.DOLLAR more than EURO.
- YUAN & YEN has high impact on U.S.DOLLAR because âyuan =.652 & âyen=.807 represents the peak magnitude and contribution in U.S.DOLLAR.

The study clarifies that there is high degree association between U. S. DOLLAR, EURO, YUAN & YEN. The currencies collectively impact U. S. DOLLAR with a significance level of 77.1%. Thus the developed nation currencies highly impact U. S. DOLLAR. If taken individually the impact of YEN on U. S. DOLLAR is highest with 81 % followed by YUAN which is 65% and EURO which is 27%. Thus, the Null Hypothesis gets accepted.

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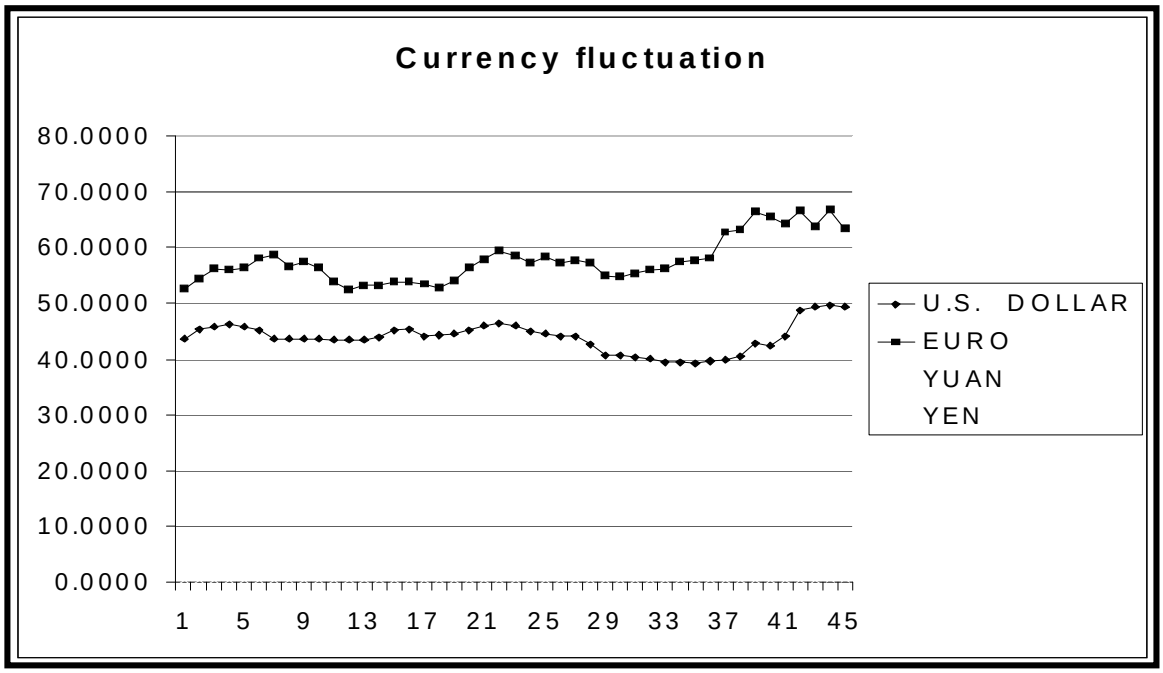
QUARTILE VALUES OF FOUR CURRENCIES (Table-1)

NO. OF QUARTILE VALUES	U.S. DOLLAR	EURO	YUAN	YEN
1	43.7871	52.6279	5.2966	0.4045
2	45.3146	54.5398	5.4816	0.4044
3	45.8895	56.1748	5.5521	0.4222
4	46.3611	56.1229	5.6096	0.4187
5	45.9185	56.3662	5.5550	0.4161
6	45.1221	58.0474	5.4584	0.4263
7	43.8002	58.7800	5.2985	0.4224
8	43.6688	56.6954	5.2826	0.4201
9	43.6994	57.5736	5.2863	0.4161
10	43.7407	56.4458	5.2913	0.4072
11	43.5120	53.9987	5.2637	0.4043
12	43.5660	52.4859	5.2760	0.3898
13	43.5434	53.3473	5.3791	0.3908
14	43.9123	53.3489	5.4356	0.3901
15	45.0957	53.9290	5.5842	0.3870
16	45.5112	53.9031	5.6404	0.3845
17	44.2185	53.5066	5.4873	0.3799
18	44.3356	52.9001	5.5149	0.3776
19	44.6095	54.1121	5.5706	0.3799
20	45.1270	56.5038	5.6360	0.3942
21	46.0562	58.0312	5.7668	0.4004
22	46.5718	59.4919	5.8449	0.4016

23	46.0015	58.5269	5.8148	0.3925
24	45.0171	57.2251	5.7231	0.3817
25	44.6592	58.4205	5.7102	0.3811
26	44.2279	57.3166	5.6901	0.3652
27	44.1077	57.7660	5.6972	0.3663
28	42.5872	57.3428	5.5198	0.3578
29	40.6732	54.8639	5.3145	0.3354
30	40.8108	54.7682	5.3598	0.3311
31	40.4223	55.3720	5.3502	0.3374
32	40.2058	55.9668	5.3581	0.3492
33	39.4773	56.1450	5.2702	0.3394
34	39.4221	57.5450	5.3348	0.3542
35	39.3374	57.6484	5.4062	0.3558
36	39.6289	58.0970	5.5228	0.3696
37	39.9898	62.8331	5.7169	0.3944
38	40.6029	63.1718	5.8156	0.3886
39	42.8253	66.4898	6.2009	0.3997
40	42.4500	65.4686	6.2074	0.3914
41	44.0523	64.2642	6.4501	0.4048
42	48.8391	66.7020	7.1578	0.4782
43	49.5351	63.8971	7.2390	0.5263
44	49.5840	66.9427	7.2628	0.5474
45	49.4730	63.5187	7.2447	0.5355

Graph – 1



PARTIAL CORRELATION COEFFICIENTS – Table - 2

CORRELATION –Table -3

CURRENCIES		EURO	YUAN	YEN
EURO	Pearson Correlation	1	.804(*)	.556(*)
	Sig. (2-tailed)	.	.000	.000
	N	45	45	45
YUAN	Pearson Correlation	.804(*)	1	.785(*)
	Sig. (2-tailed)	.000	.	.000
	N	45	45	45
YEN	Pearson Correlation	.556(*)	.785(*)	1
	Sig. (2-tailed)	.000	.000	.
	N	45	45	45

Controlling for USDOLLAR

YUAN	.8623	1.0000	.5778
	(42)	(0)	(42)
	P= .000	P= .	P= .000
YEN	.6008	.5778	1.0000
	(42)	(42)	(0)
	P= .000	P= .000	P= .

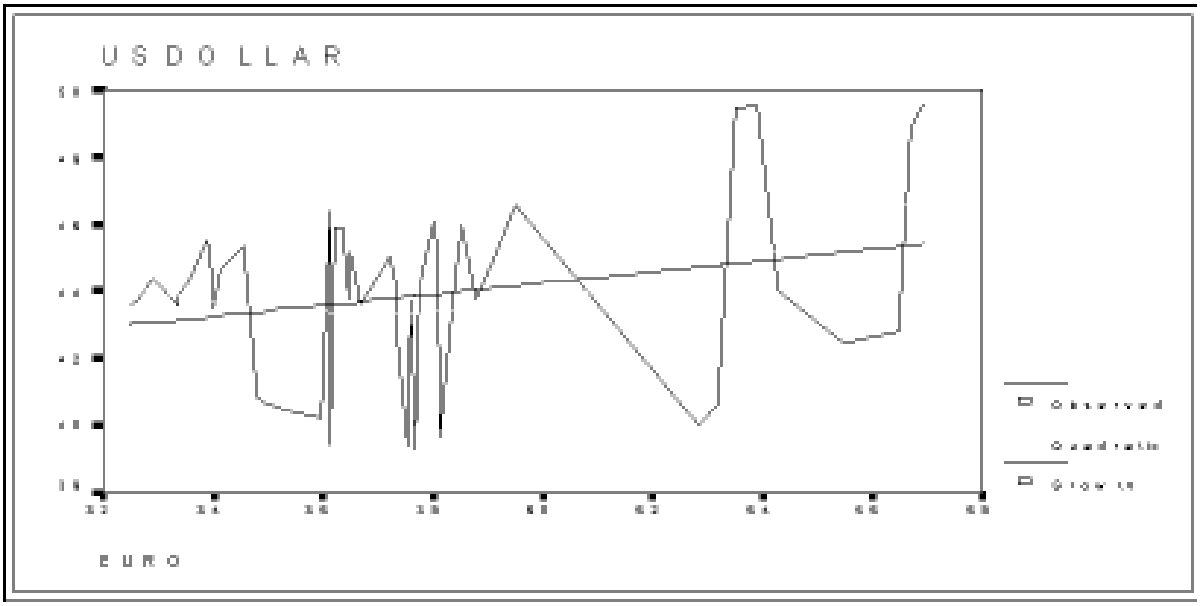
MODEL SUMMARY –Table - 4

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	Df2	Sig. F Change
1	.807(a)	.652	.644	1.6033274	.652	80.547	1	43	.000
2	.837(b)	.701	.686	1.5044303	.049	6.839	1	42	.012
3	.878(c)	.771	.755	1.3308740	.071	12.669	1	41	.001

(A) CURVE FIT OF U. S. DOLLAR V/S EURO –Table - 5

Independent: EURO							
Dependent Mth	Rsq	d.f.	F	Sigf	b0	b1	b2
USDOLLAR QUA	.114	42	2.70	.079	153.774	-3.8744	.0340
USDOLLAR GRO	.061	43	2.78	.103	3.5652	.0037	

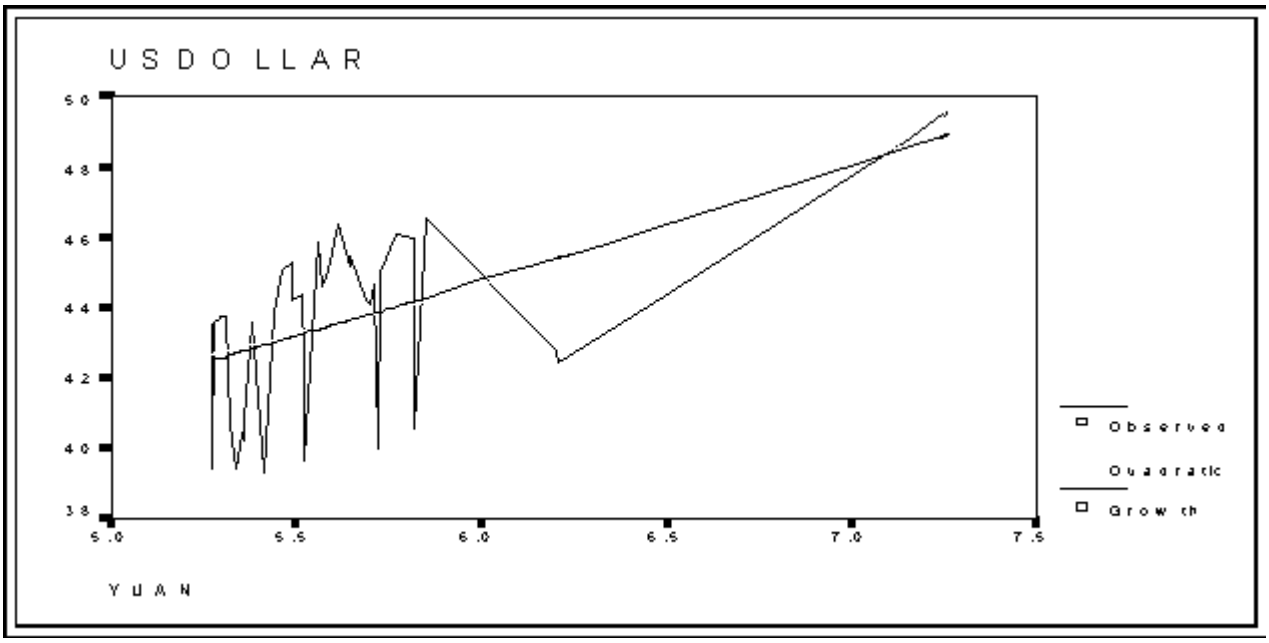
Graph - 2



(B) CURVE FIT OF U. S. DOLLAR V/S YUAN – Table – 6

Independent: YUAN							
Dependent Mth	Rsq	d.f.	F	Sigf	b0	b1	b2
USDOLLAR QUA	.427	42	15.64	.000	42.2373	-2.2054	.4347
USDOLLAR GRO	.397	43	28.26	.000	3.3774	.0707	

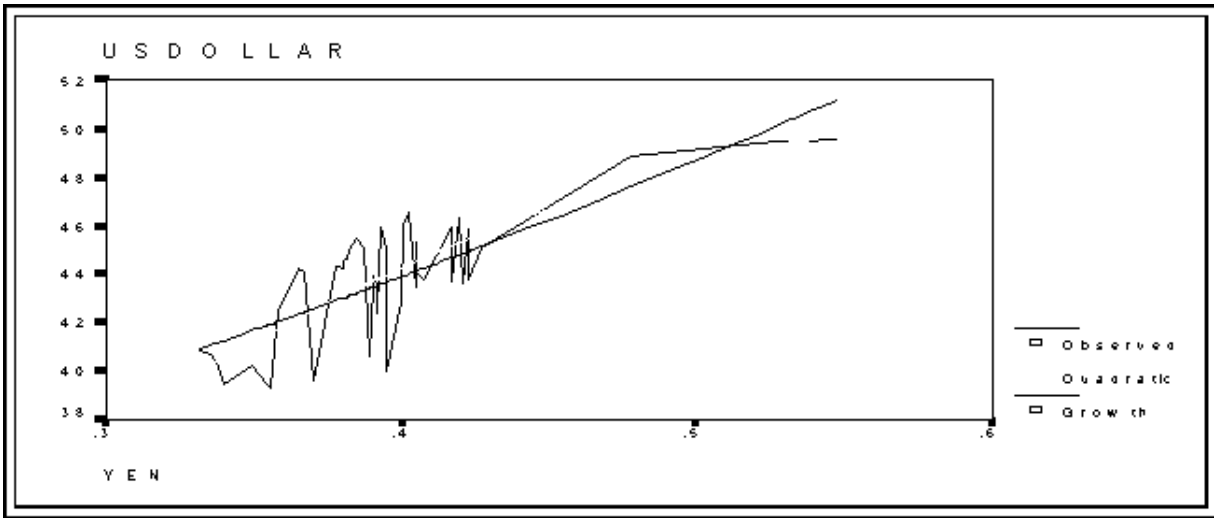
Graph - 3



C) CURVE FIT OF U. S. DOLLAR V/S YEN –Table – 7

Independent: YEN							
Dependent Mth	Rsq	d.f.	F	Sigf	b0	b1	b2
USDOLLAR QUA	.675	42	43.55	.000	3.2725	150.302	-119.39
USDOLLAR GRO	.628	43	72.57	.000	3.3683	1.0362	

Graph - 4



MODEL SUMMARY –Table -8

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	**0.266**	**0.071**	0.049	2.6201

COEFFICIENTS (A) –Table - 9

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	**Beta**		
1	(Constant)	33.728	5.666		5.952	0
	EURO	0.177	0.098	**0.266**	1.807	0.078

REGRESSION TABLE-2
MODEL SUMMARY –Table - 10

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	**.652**	**0.424**	0.411	2.06174

COEFFICIENTS (A) –Table-11

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	**Beta**		
1	(Constant)	25.605	3.27		7.83	0
	YUAN	3.212	0.57	**0.652**	5.632	0

MODEL SUMMARY –Table - 12

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	**.807(a)**	**0.652**	0.644	1.60333

COEFFICIENTS (A) –Table -13

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	**Beta**		
1	(Constant)	25.476	2.071		12.3	0
	YEN	46.363	5.166	**0.807**	8.975	0

PARTIAL CORRELATION –Table – 14

CURRENCIES	EURO	YUAN	YEN
EURO	1	0.86	0.60
YUAN	0.86	1	0.58
YEN	0.60	0.58	1

CORRELATION – Table - 15

CURRENCIES	EURO	YUAN	YEN
EURO	1	0.80	0.56
YUAN	0.80	1	0.79
YEN	0.56	0.79	1

MODEL SUMMARY (Currencies Impact Taken Collectively) –Table - 16

Model	Currencies Taken	R	R Square	Adjusted R Square
1	U.S.DOLLAR V/S YEN	0.81	0.65	0.64
2	U.S.DOLLAR V/S YEN & EURO	0.84	0.70	0.69
3	U.S.DOLLAR V/S YEN, EURO & YUAN	0.88	0.77	0.76

MODEL SUMMARY (Currencies Impact Taken Individually) – Pl. see at the end Table - 17

Model	Currencies Taken	R	R Square	Adjusted R Square	Beta
1	U.S.DOLLAR V/S EURO	0.27	0.07	0.05	0.27
2	U.S.DOLLAR V/S YUAN	0.65	0.42	0.41	0.65
3	U.S.DOLLAR V/S YEN	0.81	0.65	0.64	0.81