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IS THE INFLATION THEORY & BALANCE OF PAYMENT THEORY DEAD IN EUROPE?

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Abstract: *The aim of the study is to study the relationship between macroeconomic variables and exchange rate between Euro vs Dollar. This research used regression models to know relationships between macroeconomic variables with currency value. If inflation rises, the exchange rate decreases here which is an indicator of the domestic currency (Euro) appreciating and foreign currency (Dollar) depreciating. On the other hand, it indicates a positive relationship between the two variables considered, BOP (Current Account) and Exchange Rate shows the domestic currency (Euro) depreciates and foreign currency (Dollar) appreciates. This shows the contradictory phenomena theory of exchange rate movements in Europe. Our study found that other macroeconomic variables such as political stability, 3 month euro deposit, difference in interest rate between US and Euro Zone etc affect the value of Euro in Europe. It was also found that inflation theory and BOP theory is not very relevant in Europe.*

Key Words: *BOP, Exchange rate, Depreciation.*

1. INTRODUCTION:

Today's business environment is very tough. Foreign trade and usage of foreign currencies are very important due to the internationalisation. The use of foreign currencies is very important which ranges from arbitrage, hedging to other transactions. This paper focuses on two currencies, the euro and the US dollar. This study also focus on understand the dominant currency for the last 10 years. So here, both currencies' past information and characteristics has been studied in detail. Second, this study compares these two currencies, and also gives emphasis on the influence of macroeconomic variables on the value of both currencies. Finally, the study try to understand the importance of both currencies in the future world of global trade.

2. USD VS EURO - Comparative Analysis:

Euro vs dollar is incredible pair of currency. The US dollar is active traded currency, Euro is the second most popular currency in the world. The EUR/USD covers two main economies: Europe and USA. Both of these countries have more than half of the total trading volume in the world on the FOREX market. Euro will become very strong because of two reasons. First US dollar value as compared to other international currencies is not very strong as it used to. US economy will be in a downward trend in the future that will lead to US dollar depreciation. This will make euro as leading currency and US dollar will gradually replace by euros as foreign currency reserves and also as a trading currency.

So in the long run, there is chance that Euro will do an important role role as an international currency. Common names for USD are greenback, green, dough, smacker, bones, scrillas, and paper. The US Dollar is the most commonly converted currency in the world and regularly used as a benchmark in the Forex market. Central bank in the world held the dominant global foreign currency as USD . Additionally, the Dollar is also used as the common standard currency in the commodity market which has a direct impact on commodity prices. Due to its international acceptance, some countries like Panama and Ecuador use USD as an official legal currency.

The central bank in Europe is called the European Central Bank (ECB). 17 European Union member states have adopted the Euro as comman currency. It is the second-most traded currency on the forex market, after the US Dollar, and also a major global reserve currency. Other common names for the Euro include Yoyo, Leru Ege. The Euro is also used in many territories and sovereign states of Euro countries, such as the Azores, Balearic Islands, the Canary Islands, Europa Island, Martinique, Mayotte, Reunion, Saint-Martin, Saint Pierre and Miquelon, to name just a few. The Euro is used as a trading currency in Cuba, North Korea, and Syria and several currencies are pegged to it.

Future of the European Union and the euro itself was in doubt after the United Kingdom voted to leave the European Union. In addition, the European Central Bank had been lowering its interest rate. That reduced the value of the currency itself. The euro weakened during the Greek debt crisis also. The history behind the euro to dollar conversion relates shows declining strength against the U.S. dollar. Euro is the second most popular currency after the dollar. More than 350 million people use euro as their sole currency. The power of European Union bringing the importance of EURO. Even though the euro was not adopted by all European Union countries, no other currency treated as being a global currency.

2.1. Inflation and Exchange rate:

Each country currency's value is based on its supply and demand from other countries Currency. Currency values and inflation are highly related. In 1973 Richard Nixon, American president made adeal with Saudi Arabia USA led it oil sales in dollars and in exchange, the America will supply weapons and protection to the Saudis. This system of requiring oil sales to be performed in dollars increased the demand for dollars. These are known as Petrodollars. These petrodollars not only increased demand for the U.S dollar but used strictly for foreign trade.

Higher inflation rates always have negative effects on the value of a currency. Dollar is weaker than other currencies which means it buys less of other currencies. There are certain macroeconomic factors or other factors keeping inflation low from the ECB's affect by the impact of the exchange rate. Sensitivity analysis will be able to measure the factors such as the exchange rate filters through to inflation. The degree at exchange rate changes are transferred to import prices and next to consumer prices is commonly referred to as the "exchange rate pass-through" phenomena.

Inflation makes the increase in the prices of goods. This suggests that they are currently more expensive than they used to be. So value of euro should depreciate according to the inflation rate. But value of euro has been shown contradictory phenomena with inflation in this context. Apart from the exchange rate movements, other factors had an important lead to domestic inflation, such as economy recession etc. Since inflation will be affected by exchange rates and expectations of consumers about inflation, the Central Bank should adopt appropriate foreign exchange policy.

2.2. Inflation Rate VS Exchange Rate

YEAR	HICP Inflation rate (December to December)	USD-EUR
2008	1.64%	0.719
2009	0.93%	0.697
2010	2.22%	0.745
2011	2.75%	0.773
2012	2.22%	0.759
2013	0.85%	0.726
2014	-0.17%	0.823
2015	0.09%	0.918
2016	1.10%	0.947
2017	1.34%	0.834
2018	1.52%	0.873

2.3. Correlation between Inflation vs Exchange rate:

Correlation analysis		
Items	**Inflation rate**	**Exchange rate**
Inflation rate	1	
Exchange rate	-0.363	1

The correlation coefficient reflected is -0.363 indicates a negative relationship between the variables considered, Inflation Rate and Exchange Rate. From this, as inflation rises, which is an indicator of the domestic currency (Euro) appreciating and foreign currency (Dollar) depreciating. With every 1 unit increase in the inflation rate of the country, the domestic currency (Euro) appreciate by 0.363. When inflation rises, the purchasing power of the currency is reduced, domestic interest rates increase and borrowing should be expensive. But, the domestic currency (EUR) appreciates due to the influence of other macro-economic variables. Exchange rate changes has undergone structural changes, especially when non-linearity is important.

Regression Analysis

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.363
R Square	0.132
Adjusted R Square	0.036
Standard Error	0.009
Observations	11

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.0001	0.0001	1.369	0.272
Residual	9	0.0007	7.7E-05		
Total	10	0.0008			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.044	0.027	1.660	0.131	-0.016	0.104	-0.016	0.104
X Variable 1	-0.039	0.033	-1.170	0.272	-0.113	0.036	-0.113	0.036

The adjusted R squared value for this equation is 0.035 which indicates that this equation is not an accurate representation of the relationship between these variables. However, the p value is 0.27 which is >0.05 and indicates accepting the null hypothesis which states that there is no relationship between the variables. From the results of both the analysis together is that there is an effect of the inflation rate of the European Union on the exchange rates but the magnitude of the impact is negligible. Therefore, in the EU context, the inflation rate does not influence the forex rates immensely.

2.4 Balance of Payment and Exchange rate

Foreign exchange demand arises from the debit items in the balance of payments, whereas the supply of foreign exchange arises from credit items. The debit items relate to all payments made by residents of a country to foreigners, and credit items include all payments received from foreigners by the residents. These payments may be on any account, e.g. goods bought and sold, services rendered and received, capital borrowed or lent, and so on. When the balance of payments is in deficit, the country currency will depreciate and will be in weak position. If a country has a current account surplus, there will be favorable balance of payments. There are more people abroad who have to make payments to this country. The demand for this country's currency will increase on the part of the holders of foreign currency. The result will be that the external value of the domestic currency will appreciate.

2.5 Balance of payment and exchange rate

YEAR	Balance of payment	USD-EUR
2008	-2.35	0.719
2009	-0.66	0.697
2010	-0.48	0.745
2011	-0.24	0.773
2012	0.56	0.759
2013	1.06	0.726
2014	0.93	0.823
2015	1.03	0.918
2016	1.58	0.947
2017	1.45	0.834
2018	1.76	0.875

A country's BOP is associated with 3 main elements as mentioned such as Current, Capital and Financial Account. Any change in the BOP sets off by change in the market for foreign currency. Therefor In an open economy, changes in the exchange rate are fundamentally driven by changes in the balance of payments.

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2.6 Correlation between Balance of payment and exchange rate

Correlation analysis		
Items	**Balance of payment**	**Exchange rate**
Balance of payment	1	
Exchange rate	0.676	1

The Correlation coefficient reflected is 0.676. indicates a positive relationship between the 2 variables considered, BOP (Current Account) and Exchange Rate. From this we infer that, as the current account balance increases, so does the exchange rate, which is an indicator of the domestic currency movements. With every 1 unit increase in the Current Account balance of the country, the domestic currency (Euro) depreciates.

Regression Analysis

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.676
R Square	0.458
Adjusted R Square	0.390
Standard Error	0.952
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	6.122	6.122	6.749	0.032
Residual	8	7.257	0.907		
Total	9	13.379			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-7.426	2.985	-2.488	0.038	-14.309	-0.543	-14.309	-0.543
X Variable 1	9.714	3.739	2.598	0.032	1.091	18.337	1.091	18.337

The adjusted R squared value for this equation is 0.38 which indicates that this equation is decent but not quite accurate representation of the relationship shared by these 2 variables. However, the p value is 0.031 which is >0.05 and indicates accepting the null hypothesis which states that there is no relationship between the variables. By looking at results of both the analysis together is that there is no effect of the BOP of the European Union on the exchange rates. Therefore, in the EU context, the BOP does not influence the forex rates immensely.

3. CONCLUSION:

This study was conducted with the purpose of checking the importance of inflation theory & Balance of payment theory or studying the relationship between macroeconomic variables and Euro in European countries. Macroeconomic variables such as Inflation Rate and Balance of Payments do inversely influence the exchange rates of EURO in this study. As inflation rises in Europe, the exchange rate decreases which is an indicator of the domestic currency (Euro) appreciating and foreign currency (Dollar) depreciating and vice versa. With every unit increase in the Current Account balance of the Europe, the domestic currency (Euro) depreciates and foreign currency (Dollar) appreciates. This proves the contradictory phenomena of exchange rate movements in Europe. The study analyzed the relationship between these individual variables by running analysis methods, namely, Correlation Analysis and Regression Analysis. So in this study, it is proven that inflation theory and BOP theory does not hold in Europe due to the influence of other hidden factors . The European Central Bank (ECB) is the central bank manage monetary policy in an efficient manner for the Eurozone and maintain price stability, so euro's purchasing power was not eroded by inflation. The EU was hit majorly by BREXIT however, being economies with high control, they did not collapse. However, the exchange rates did drop for a brief period. EUR/USD is susceptible to political instability due to the coalition governments in France, Germany or Italy. Political or financial instability in Russia is also a dangerous signal for the EUR/USD due to the the substantial amount of German investments in Russia. Other factors such as the difference between the refinancing rate and the US Fed Funds rate is highly influencing on the EUR/USD. This study proves that other macroeconomic variables like Political Stability, 3 month euro deposit, difference in interest rate between US and Euro Zone etc affect the value of Euro.

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