

## **DOLLAR INDEX IMPACT ON IMF LOAN DISBURSMENT AND REPAYMENT – A STUDY**

**Author's \*\*\***

**Miss. S. TRISHALA**

MBA - I yr, St.Pious X College for Women, Hyderabad.

**Mr. M. CHANDRA KUMAR**

MBA - II yr, St. Martin's Eng. College, Hyderabad.

**Miss. K. SNIGDHA**

MBA - I yr, Matrusri Institute of PG Studies, Hyderabad.

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### **ABSTRACTS:**

In the present globalization era many economically advanced countries are seeking financial support from global financial institutions such as IMF, World Bank, Asian development bank and newly established bank called BRICS bank. Our analysis has been emphasized from the period of 2005-2014 and considered various macro level factors related to first two objectives of IMF which are global imports and exports encouragement and global currency stabilization. Regression weight estimation reveals that global imports got influenced by the global economy. Johenson co-integration test has been applied on dickey-fuller stationary data between dollar index to IMF loan repayments. The granger causality test had proven that IMF loan repayment were granger caused by the dollar index. Two tail t-test hypothesis results unwinds that IMF loan disbursement are forcing the global exports and imports to improve global trade. This analysis is useful to the international financial institutions and countries banking regulators and statutory bodies of country government institutions.

**Key Words: BDI, Dollar Index, Gold, IMF Loan disbursement and repayment.**

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### **INTRODUCTION:**

In 2004, benign economic conditions worldwide meant that many countries began to repay their loans to the IMF. As a consequence, the demand for the Fund's resources dropped off sharply. But in 2008, the IMF began making loans to countries hit by the global financial crisis. The IMF currently has programs with more than 50 countries around the world and has committed more than \$325 billion in resources to its member countries since the start of the global financial crisis. While the financial crisis has sparked renewed demand for IMF financing, the decline in lending that preceded the financial crisis also reflected a need to adapt the IMF's lending instruments to the changing needs of member countries. In response, the IMF conducted a wide-ranging review of its lending facilities and terms on which it provides loans.

In March 2009, the Fund announced a major overhaul of its lending framework, including modernizing conditionality, introducing a new flexible credit line, enhancing the flexibility of the Fund's regular stand-by lending arrangement, doubling access limits on loans, adapting its cost structures for high-access and precautionary lending, and streamlining instruments that were seldom used. It has also speeded up lending procedures and redesigned its Exogenous Shocks Facility to make it easier to access for low-income countries.

This study has been emphasized to find the effect of dollar index fluctuations on the IMF loan repayment and disbursement. Dollar has a magnificent value throughout the world and it is considered as global currency by the economists in the world. The value of US Dollar is related to US Dollar Index (USDX). The US Dollar Index is an index (or measure) of the value of the United States dollar relative to a basket of foreign currencies. It is a weighted geometric mean of the dollar's value compared only with- Euro (EUR), 57.6% weight, Japanese yen (JPY) 13.6% weight, Pound sterling (GBP), 11.9% weight, Canadian dollar (CAD), 9.1% weight, Swedish krona (SEK), 4.2% weight and Swiss franc (CHF) 3.6% weight. Macro level factors such as BDI, HDI, gold prices, global imports and exports were considered for the study. Johansen co-integration test has been applied between dollar index and IMF loan repayment. In this analysis we have considered BDI as a global economic indicator.

## REVIEW OF LITERATURE:

**Brandon Smith (2012)** - In this study the author found out that importing and exporting has been quite the same since 2008 and this change is made obvious through one of the few statistical measures left in the world that is not subject to direct manipulation by international corporate interests- the BDI. It is considered as realistic indicator of future trends, whereas my study considered BDI as global economic indicator.

**Tim Worstall (2015)** - In this was observed that BDI has hit a 29 year low in terms of supply and demand. If the supply of shipping is static, then BDI collapses. In my study I have observed that BDI has a negative impact on gold prices also.

**Tod Wood (2015)** - The author observed that the United States has \$18 trillion in debt and counting. Europe is a mess. Russia is hurting. Brazil and other former Latin American powerhouse economies are suffering under bad economic policies for first time in a decade. But in my study I observed that BDI has a positive impact on dollar index.

**Mason A. Carpenter and Sanjot P. Dunang (2011)** - In this analysis, the authors focused on the basics of World Bank and IMF. Both are twin Inter Governmental Pillars supporting the structure of the World's economic and financial order. Both have taken expanding roles and there have been renewed calls for additional expansion of their responsibilities, particularly in the continuing absence

of a single global monetary agreement. I expanded my study by finding out the dollar index impact on IMF loans disbursement and repayment.

**Prof. Micheal Chossudovsky (2014)** - The author focused on exports such as coffee and tea of Rwandan. As the debt crisis unfolded a layer share of coffee and tea earnings had been earned marked for debt servicing, putting further pressure on small scale farmers. The author's study is from 1987 to 1991 whereas my research is from 2005-2014.

**Mehmet C. Arabaci, Sencer Ecer (2014)** - The authors investigated whether countries have access to loans with better conditions after an IMF agreement. They conducted an empirical analysis which took into account both the maturity and the interest rate of public and publicly guaranteed debt whereas my analysis focuses on IMF loan repayment and disbursement.

**Schimmack (2008)** - This hypothesis was tested using self reported life satisfaction happiness as validation criteria. GDP was considered as a superior predictor of both subjective measures than HDI. The HDI is a widely used measure of nation's wellbeing, whereas I considered BDI as superior to HDI in my study.

**Gary Becker and Richard Posner (2007)** - The authors found out that HDI is a composite of 3 indexes- GDP per capita income, life expectancy, adult literacy ratio. Whereas my study is focused on BDI with HDI.

**Paul Cashin, Paolo Mauro, Ratna Sahay (2001)** - The article focused on the interaction between macroeconomic policies which are at the core of the IMF's mandate and poverty whereas my study is based on dollar impact on IMF.

**David Kelly (2014)** - The author made an emphasis on how dollar impacts the global economy. He considered that dollar's risk, while not extraordinary, is certainly significant. A number of factors have likely contributed to dollar ascent. In my study factors which contributed to dollar ascent are global imports and exports, gold prices, BDI, HDI, and IMF.

**John Manzella (2002)** - The author emphasized about the rise and fall of US dollar. The value of US dollar decreased 9.4% against major currencies from February-July 2002. By August it had climbed 1.8%, likely indicating a temporary pause in its downward trend. My analysis is from the year 2005-2014.

**Marc Chandler (2014)** - The author analyzed the US dollar strength and its impact on international trade. The US trade balance has been remarkably steady. The 12-month average is a deficit of \$ 40.8 billion. Whereas my analysis focused on dollar index impact on the IMF loan disbursement and repayment.

**Jelena Jokovic (2012)** - The author focused on the fluctuation and its effects towards world economy. Movements in the US dollar have important implications for the prospects for world economic growth. A marked appreciation of the US dollar will increase the purchasing power of US

consumers, import demand and so on, whereas my study focuses on dollar index fluctuation impact on IMF loan repayment.

**Andrew Berg, Eduardo Borenszstein (2000)** - The authors drew material from IMF on pros and cons of full dollarization and the choice of exchange rate regime and monetary target in highly dollarized economies. They focused on problems emerging from exchange rate systems, whereas my study focuses whether dollar has any impact on IMF loan repayment and disbursement.

**Kathy A. Jones (2014)** - The author focused on how strengthening of dollar has important implications for bond investments and commodities and understanding the factors that play an important role in dollar rise. My study focuses on the relationship between dollar index and IMF loans.

**NEED:** Role of international financial institutions are increasing every day after the globalization. IMF is playing vital role in european union financial crisis. Global economy recession influenced many countries currencies; hence due the depreciation of the currencies IMF loan repayments and disbursements got influenced by many countries. Our paper has been emphasized to find the currency fluctuation impact on IMF funds in & out flows.

#### **OBJECTIVES:**

- To know the dollar index impact on IMF loan repayment.
- To measure the impact of dollar index on global exports and imports.
- To know the relationship between global bench mark (BDI), gold, dollar index with HDI.
- To find the IMF loan disbursement impact on global exports and imports.
- To find the future movement of BDI with gold and dollar index.

**SCOPE:** The Present paper has been focused on IMF two objectives; Select macro economic variables were considered on objectives to measure influence on global economy. This study has been emphasized from the period of 2005-2014.

#### **Empirical Study:**

IMF Loan repayment, IMF Loan disbursement, Global exports, Global imports, Gold, BDI, Dollar Index.

**RESEARCH METHODOLOGY:** This analysis has been done on secondary data by using descriptive statistical tools. The following formulas were considered for the analysis.

**Johenson Co-integration:** Co-integration is a statistical property of time series variables. Two or more time series are co-integrated if they share a common stochastic drift. If two time series x and y are co-integrated, a liner combination of them must be stationary.

$$Y - Bx = u, \text{ Where } u \text{ is stationary.}$$

**Granger causality test:** Granger causality test is a statistical hypothesis test for determining whether one time series is useful in forecasting another. A time series X is said to Granger-cause Y if it can be shown, usually through a series of t-tests and F-tests on lagged values of X (and with lagged values of Y also included), that those X values provide statistically significant information about future values of Y.

**Augmented Dickey-Fuller Test:** Augmented Dickey-Fuller Test is a test for a unit root in a time series sample. It is an augmented version of the Dickey-Filler test for a larger and more complicated set of time series models.

$$\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + \dots + \delta_{p-1} \Delta y_{t-p+1} + \varepsilon_t,$$

**T-test:** As mentioned above, the t-test can only be used to test differences between two means. When there are more than two means, it is possible to compare each mean with each other mean

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon$$

using many t-tests.

**Correlation:** A correlation study is a research writing that attempts to relate an event to another events or sets of causality which precipitate the event.

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

**Regression:** A statistical measure that attempts to determine the strength of the relationship between one dependent variable and the series of other changing variable.

**ANALYSIS:**

**Objective 1:** To know the dollar index fluctuation impact on IMF loan repayment.

Data Trend:	None	None	Linear	Linear	Quadratic		
Rank or	No Intercept	Intercept	Intercept	Intercept	Intercept		
No. of CEs	No Trend	No Trend	No Trend	Trend	Trend		
	LLR Model					AIC	SIC
0	-215.1231	-215.123	-215.033	-215.033	-214.1761	39.84056	39.84056
1	-207.175	-201.159	-201.12	-200.327	-199.7733	39.12273	39.12273
2	-206.3981	-200.366	-200.366	-196.406	-196.4062	39.70874	39.70874

**Interpretation:** The above analysis of Johnson co integration test has been applied between dollar index and IMF loan repayment. The test results reveals that log likelihood rank values were observed in decreasing trend in both linear & quadratic model along with the alpha level. Hence data is stated to be co integrated between dollar index and IMF loan repayment.

**Granger Causality Test**

Null Hypothesis:	Obs	F-Statistic	Prob.
DIMF does not Granger Cause DDOLLAR	11	0.0331	0.9676
DDOLLAR does not Granger Cause DIMF		2.45652	0.1662

**Interpretation:** The granger causality test has been applied on Johnson –co integration data Ho, null hypothesis, has been accepted because the probability value is  $0.166 < 0.5$  & reject the H1, alternative hypothesis. The granger causality analysis depicts that global currency index i.e., dollar index fluctuation impact is visible on IMF loan repayment by its associate members.

**Objective 2:** To measure the impact of dollar index on global imports and exports.

**Best Model Statistics**

Model Summary	
Multiple R	0.58
R Square	0.336
Adjusted R Square	0.147
Std. Error of the Estimate	267.778
Log-likelihood Function Value	-24.615

**ANOVA**

	Sum of Sq	df	Mean Square	F	Sig.
Regressio	254475.5	2	127237.731	1.774	0.238
Residual	501934.7	7	71704.954		
Total	756410.1	9			

**COEFFICIENTS**

	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	Beta	Std. Error	Beta	Std. Error		
(Constant)	92.005	8.806			10.448	0
exports	-6.92E-05	0	-0.593	0.605	-0.981	0.359
imports	2.01E-06	0	0.015	0.605	0.025	0.981

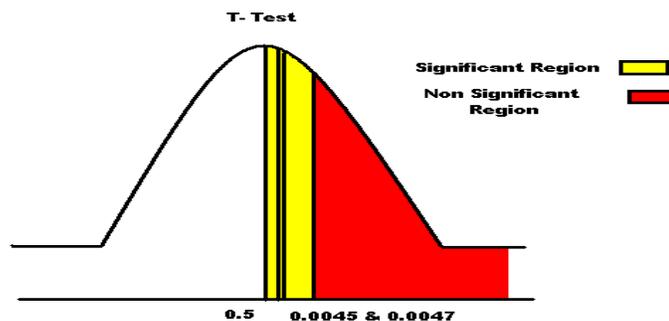
**Interpretation:** The above analysis of regression weight estimation has been applied to measure the impact of dollar index on global exports and imports. the r2 value is 33.6% which is greater than the slab value that is 60% .Global exports were influenced by the dollar index but global imports were not affected by the dollar index, because the probability value is observed more significantly i.e.,  $0.981 > 0.5$ .

**Objective 3:** To know the relationship between global bench mark (BDI), gold, dollar index with HDI

		bdi	gold	dollar	hdi
bdi	Pearson Correlation	1	-.691*	0.305	-0.233
	Sig. (2-tailed)		0.027	0.392	0.517
	N	10	10	10	10
gold	Pearson Correlation	-.691*	1	-0.594	-0.009
	Sig. (2-tailed)	0.027		0.07	0.981
	N	10	10	10	10
dollar	Pearson Correlation	0.305	-0.594	1	-0.268
	Sig. (2-tailed)	0.392	0.07		0.455
	N	10	10	10	10
hdi	Pearson Correlation	-0.233	-0.009	-0.268	1
	Sig. (2-tailed)	0.517	0.981	0.455	
	N	10	10	10	10

**Interpretation:** Bi- Variant correlation has been applied on the select economic variables, the result indicates that dollar index to BDI is slightly positively correlated and next variables were slightly negatively correlated with each other. Expect gold v/s BDI is strongly correlated during the analysis.

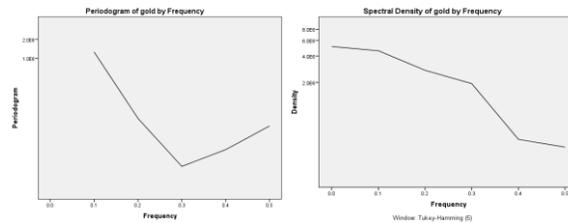
**Objective 4:** To find the IMF disbursement impact on global imports and exports.



**Interpretation:** The above analysis of t-test has been applied to the impact change on global exports & imports. The test result shows that calculated value are fallen under significant region. Hence export and imports were influenced by IMF disbarments during the analyzed period.

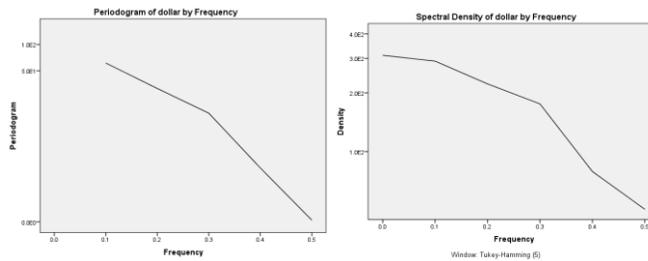
**Objective 5:** To find the future movement of BDI with gold and dollar index.

### Gold



**Interpretation:** Regression equation has been applied to predict future movement of BDI with gold and calculated value is observed lesser than present value which indicates BDI is expected to move downside.

### Dollar



**Interpretation:** Regression equation has been applied to predict future movement of BDI with dollar index and calculated value is observed greater than present value which indicates BDI is expected to move upside.

### FINDINGS:

1. Global currency impact on IMF loan repayment has been observed with the study
2. Global imports got influenced with dollar index fluctuation but exports were not influenced by the dollar index.
3. Gold v/s BDI were found to be strongly negative correlated during the study period.
4. The study has observed that IMF loan disbursement got influenced to global exports and imports during the analysis period of 2005-2014.
5. Global economic indicator BDI has been predicted upside with dollar but at the same time with gold it has predicted downward movement.

### CONCLUSION:

We conclude the analysis of “the dollar index impact on IMF loan repayment and disbursement”. this study have considered two objectives out of four of IMF on this global exports and imports and

currency stabilization were considered .this study has proven that country loan repayment to the IMF and global exports were getting influenced with dollar index. Global future economic indicator BDI has been predicted downwards with gold but upside with dollar index during the study period.

Hence further study is recommended in this area by considering various micro level global economy factors influence on IMF loan repayment disbursement along with the currency related factors.

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