AN EMPIRICAL STUDY ON BITCOIN –WILL IT BE A SUBSTITUTE FOR DOLLAR

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ABSTRACT: The Analysis on Bitcoin has been emphasized from its origin i.e., 2010 to 2014. The focus of this analysis has been done from currencies and global assets class perspective, Augmented Dickey Fuller (ADF) test has been applied on the selected variables to find the stationery of the data. This analysis had proven that crude oil and dollar index are having impact on Bitcoin but at the same point of time Global economy impact not been observed on the fluctuations of electronic currencies. With the volatility formulae Bitcoin has been compared with the global assets classes and BDI the risk level is found to be ignorable amount i.e., less than Global equity, Gold, but more than bond instruments. The performance measure calmer ratio has proven that the Bitcoin vs. Yen, Great Britain Pound and Canadian Dollar, are found to be stronger when it is compared with other select currencies. Factor analysis has been applied on the select economic variables through which dollar index has been identified and it also proven that it is having a stronger influence on Bitcoin. The various other articles emphasized on Bitcoin and proven that it can replace gold I near future. But gold asset class depends on the inflation movement. In this analysis through Granger casualty test it has been observed that inflation is not infusing the Bitcoin. The data of Bitcoin is limited to analyze it in comparison with other variables. So, Bitcoin should create history so that the proper analysis can be done by the researchers. This analysis is useful for the international Traders, Global portfolio manager, Forex Trades, and The currency investors.

KEY WORDS:-Bitcoin, BDI, MSCI, Gold, Crude oil, Dollar, Yen, Euro, CHF, CAD.

INTRODUCTION: - Bitcoin is dispersed basic cash that adopts a peer-to-peer accord arrangement to affirm and authenticate contracts. The Bitcoin chain was arranged and begun in January 2009 by a association of programmers under the pseudonym of "Satoshi Nakamoto," based on the perception of open-source crypto-currency 1 defined by cryptologist Wei Dai in 1998. Significant to Bitcoin is its autonomy from any academy or authority, granting any keen parties to enlist in a direct budgetary contract at a low cost. Rather of believing a financial mediator to intervene and certify an agreement, all authentic agreements are encrypted into a single agreed-upon past or journal of agreements. This completely averts anyone's endeavor to spend the same coin numerous times or to build false Bitcoin.

Bitcoin works just like currency. It can be
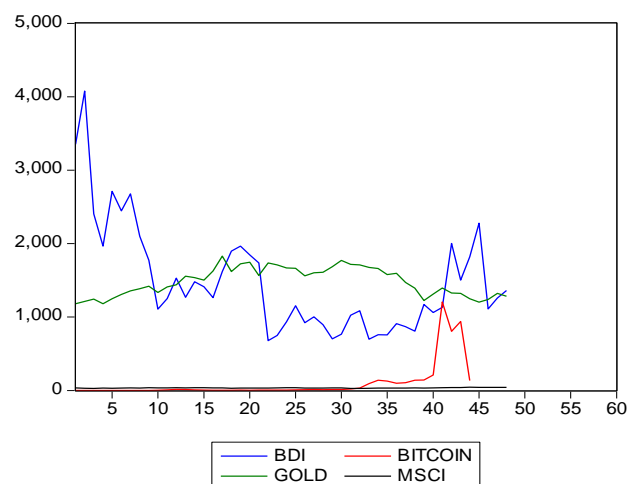
acquired or disposed of in currency swaps, Mt. Gox being the most frequently recycled one. It can also serve as premium for commodity or maintenance at a flourishing number of employments. An agreement is built by "sending" Bit coins to the location of the account to be credited. Once an agreement is built, it is advertised honestly among the network, which is convinced of persons, known as "miners," who allot measuring capacity to clear up the agreements. These agreements are "pending" until the bulk of the organization certifies they are accurate. Then, the documented section is set to the public section group, and the network starts to clear up the next contract section. To appreciate anonymity, buyers are cheered to design new locations for each agreement to be accepted, yet the public section group and account balances can be drawn to channel accounts and buyers. Since the establishment of Bitcoin (Nakamoto 2008), proof-of-work has been the main design of peer-to-peer crypto currency. The approach of proof-of-work has been the determination of casting and security model of Nakamoto's study.

OBJECTIVES:-

- To know whether Bitcoin will overcome the currency fluctuation in the global economy
- Find the impact of the selected economic factors on Bitcoin
- To measure the performance of Bitcoin along with the selected currencies movement
- Comparison of Bitcoin volatility with other selected asset class volatility

SCOPE:-

In the post recession economy, new crypto currency i.e., Bitcoin has emerged in the global economy .This electronic currency is the nascent stage which is yet to evolve has a stronger asset class in the global arena. This analysis has been confined from the period of July 2010- Sep 2014. The emphasis of the analysis is to understand the movement of the Bitcoin along with the other macro level assets classes like gold, bond & equities. In this analysis, few currencies were also considered where the fluctuation of currencies can be overcome by taking position in the Bitcoin.

NEED OF THE STUDY:-

Study is to understand if Bitcoin can replace the monopoly system that influences the Currency fluctuations. It also helps us in comparing the performance with the other portfolios and to find the impact of few global economic factors. It gives you the insight on the behavior of Bitcoin during different economic situations & also lets us understand if Bitcoin can emerge as a global electronic currency.

REVIEW OF LITERATURE:-

1. **William J. Luther & Lawrence H. White:** In Present Days ,Bitcoin is considered as a hypothetical instrument, limited to pay for goods and services .Its value is ambiguous ,which raises to the delay in using the bit coin as a payment medium ,we demonstrate why the value of the Bitcoin has been volatile ,then we deliberate entrepreneurial efforts that might empower Bitcoin to turn into a more commonly approved Payment medium.

2. **Michael PAETAU:** Bitcoin is a form of virtual or digital money. A peer-to-peer, electronic cash system. Bit coins are based on an open-source cryptographic protocol that is independent of any central authority like a Central Reserve Bank or another administrative institution. Bit coins are initiated executed and decentralized within a computer based network. They can be transferred through a computer or Smartphone without an involvement of any financial institutions as a median. Bit coin exists since 2009 and is accepted as a legal medium for payment in many countries but initially for worldwide internet transactions. In June 2011, Wiki leaks and other organizations began to accept bit coins for donations. That became very important after Master-Card, Visa, PayPal and others tried to stop Wiki leaks from money transfers because of political pressures by the US-government. In this Analysis the bit coin currency system in analyzed from

the money creation and regulation point of view.

3. **Thabiso peter Mpofu , Budwell Masaiti , MacDonald Mukosera:** Bit coins are crypto currency and it is developed by Satoshi Nakamoto in the year 2009. Bit coins are also known as digital currencies that can be operated on a peer to peer system. Bitcoin system is decentralized as it does not consist of a central regulatory authority as with Fait currency. For transaction purpose, an individual should require a Bitcoin wallet which has one or more private and public keys that are associated with it. Usage of Bit coins is based on cryptographic proof where as fiat currency and electronic payment methods such as visa and Master cards usage is based on Trust. The usage of Bit coins has been increased and through Bit coins Exchange, Bit coins can be converted into fiat currency.

4. **Franziska Boehm , Paulina Pesch:** The usage of Bit coins is rapidly increasing. Bit coins are mainly used in Ecommerce to purchase both legal and illegal goods and they can be traded and transferred from one place to another. Many companies invested their capital in this new digital currency i.e.; Bit coins. In this the legal frame work is not clear where as the technical aspect of the system are well established. All over the world, Legislators started to discover this new virtual phenomenon. In this article , selected legal challenges arising in different fields of law(public, criminal and civil law) is explained and it pay a special attention to the German situation along with US – American context.

5. **Satoshi Nakamoto:** Bitcoin is a network of personal computers that allows the sending of online payments from one party to another party without approaching the financial institutions. Digital signatures does not provide the complete solution, but if a trusted third party still prevents the double-spending then the main benefits are lost. We also come up with a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by considering them into an ongoing chain of hash-based proof-of-work, setting a document that cannot be replaced without redoing the proof-of-work. The proof that came from the largest pool of CPU power is the longest chain that not only assists as a proof of progression of events endorsed. As long as a majority of CPU power is controlled by nodes that are not helping to attack the network, they'll accomplish the longest chain and outpace attackers. The chain itself requires minimal structure. The memorandum are announced on a best effort basis, and nodes can leave and rejoin the structure at will, acquiring the longest proof-of-work chain as proof of what cropped up while they were gone.

6. **Tyler Moore and Nicolas Christin:** Bitcoin has enjoyed wider approval than any previous crypto-currency; yet its achievement has also fascinated the scrutiny of deceivers who have taken advantage of operational insecurity and transaction irreversibility. We study the risk investor's point of view from Bitcoin exchanges, which negotiates between Bitcoin and hard currency. For the past three years we check the track record of 40 Bitcoin exchanges, and find that 18 have closed, with customer account balances usually wiped out. Deceivers are sometimes to blame, but not always. We find that an exchange's transaction volume indicates whether or not it is likely to close using a proportional hazards model. Mostly the popular ones continue and the less popular ones shut down.

7. **Franziska Boehm, Paulina Pesch**: Bitcoin is a popular decentralized implied currency. Bit coins are used as a medium of exchange for the goods and services. The value of Bitcoin has not been so stable and also most regulatory authorities are not designed to serve this type of payment system. Bitcoin is remarkable not because of its implicit nature but because of its dead letter characteristics. There are few possible developments that can take place in the design of Bit coins to overcome the flaws. So, this is a study on the economic implications of Bitcoin in the future and its effect on US Dollar.

8. **Samuel Oliveira, Filipe Soares, Guilherme Flach, Marcelo Johann, Ricardo Reis:** Due to the developments the usage of private digital currency was made easy. The digital currency should be able prevent users by spending double. It is said to purely digital currency. At present digital currencies use peer to peer network and open source software for avoiding double spending. We

have taken consideration of trading on computerized market in Bitcoin, a remarkable innovation in financial market which works round the clock.

9. **Reuben Grinberg:** The world of finance has been changed due to the crypto currency in the form of decentralized digital currency over the past years. Bitcoin is relatively low cost alternative to fiat, while it lacks central authority and protects anonymity. It helps in international exchange of commodities. Through Bitcoin creation of smartcard contracts became easy by signature and scripting system. Through signature system they can have multi signatures as well as multi input and output transactions. But at present there is small weakness with smart contracts. This protocol reduces the issues of extortion and malleability from two-party escrow.

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

1. Cross Correlogram: In the analysis of data, a Correlogram is an image of correlation statistics. This is used only when we have time series analysis. $s_{\bar{Y}} = s/\sqrt{N}$

2. 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.

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

3. 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.

i. **Null hypothesis:** The null hypothesis refers to a general statement or default position that there is No relationship between two measured phenomena. Rejecting or disproving the null hypothesis- and thus concluding that there is a relationship between two phenomena.

ii. **Alternative hypothesis:** In statistical hypothesis testing, the alternative hypothesis is applicable when probability is > 0.5. Alternative hypothesis is that the quality is poorer in the second half of the record.

4. Calmer Ratio: The ratio is very similar to the MAR Ratio, which was formulated much earlier. The only difference is that the MAR Ratio is based on data produced from the inception of the investment, whereas the Calmar Ratio is typically based on more recent and shorter-term data. Regardless of which ratio is used, investors gain better insight as to the risk of various investments.

$$= \frac{\text{Compound Annualized Rate of Return}}{\text{Maximum Drawdown (Absolute Value)}}$$

5. Volatility: Volatility is a measure for variation of price of a financial instrument over time. Historic volatility is derived from time series of past market prices. The symbol σ is used for volatility, and corresponds to standard deviation.

6. 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.

LIMITATIONS:-

- Bitcoin has been considered from July.
- PIMCO has been considered as global bond instrument.
- LIBOR rate has been considered as risk free rate of return.
- BDI has been considered as benchmark for the calculation of risk of the portfolio.
- For the imports& exports   year 2014 data is not available.
- For the calculation global inflation WPI (whole price index) has been considered.

DATA ANALYSIS:-
1) To know whether Bitcoin will overcome the currency fluctuation in the global economy

a)   Bitcoin And Canadian dollar

Included observations: 51
Correlations are asymptotically consistent approximations

BITCOIN,CHF(-i)	BITCOIN,CHF(+i)	i	lag	lead
*******| .		*******| .		0	-0.7794	-0.7794
*******| .		*******| .		1	-0.7028	-0.7972
*******| .		*******| .		2	-0.6460	-0.7796
******| .		*******| .		3	-0.6024	-0.6952
******| .		******| .		4	-0.5755	-0.6041
******| .		*****| .		5	-0.5490	-0.5344
*****| .		*****| .		6	-0.5010	-0.4876
****| .		****| .		7	-0.4280	-0.4382
***| .		****| .		8	-0.3356	-0.3781
***| .		***| .		9	-0.2573	-0.2699
.**| .		.*| .		10	-0.2073	-0.1433
.*| .		.*| .		11	-0.1468	-0.0461
.*| .		.	.		12	-0.0946	-0.0061
.*| .		.	.		13	-0.0537	0.0317
.	.		. |*.		14	0.0084	0.0578
. |*.		. |*.		15	0.0508	0.0552
. |*.		. |*.		16	0.0887	0.0714
. |*.		. |*.		17	0.0967	0.0844
. |*.		. |*.		18	0.0727	0.1032
. |*.		. |*.		19	0.0745	0.1162
. |*.		. |*.		20	0.1049	0.1285
. |*.		. |*.		21	0.1479	0.1368
. |**.		. |*.		22	0.1686	0.1476
. |**.		. |*.		23	0.1626	0.1440
. |*.		. |*.		24	0.1320	0.1462

b) Bitcoin and EURO

BITCOIN,EURO(-i)	BITCOIN,EURO(+i)	i	lag	lead
. |*.		. |*.		0	0.1199	0.1199

. |**. |	. |*. |	1	0.1636	0.0948
. |**. |	. |*. |	2	0.1765	0.0654
. |**. |	. |*. |	3	0.1632	0.0757
. |*. |	. |*. |	4	0.1172	0.0733
. |*. |	. | . |	5	0.0521	0.0298
. | . |	. | . |	6	-0.0221	-0.0279
.*| . |	.*| . |	7	-0.0829	-0.0656
.*| . |	.*| . |	8	-0.1431	-0.0958
.**| . |	.*| . |	9	-0.1920	-0.0680
.**| . |	. | . |	10	-0.2173	0.0049
.**| . |	. |*. |	11	-0.2239	0.0656
***| . |	. |*. |	12	-0.2496	0.0902
***| . |	. |*. |	13	-0.2957	0.1089
***| . |	. |*. |	14	-0.3351	0.1279
****| . |	. |*. |	15	-0.4055	0.1210
*****| . |	. |*. |	16	-0.4720	0.1285
*****| . |	. |*. |	17	-0.5053	0.1312
*****| . |	. |*. |	18	-0.5392	0.1312
*****| . |	. |*. |	19	-0.5207	0.1280
*****| . |	. |*. |	20	-0.4722	0.1265
****| . |	. |*. |	21	-0.4225	0.1249
****| . |	. |*. |	22	-0.3992	0.1219
****| . |	. |*. |	23	-0.3949	0.0991
****| . |	. |*. |	24	-0.3729	0.0832

c) Bitcoin and YEN

BITCOIN,YEN(-i)	BITCOIN,YEN(+i)	i	lag	lead
. |******* |	. |******* |	0	0.8017	0.8017
. |******* |	. |******* |	1	0.7775	0.7613
. |******* |	. |******* |	2	0.7535	0.7013
. |******* |	. |****** |	3	0.7331	0.6316
. |******* |	. |****** |	4	0.7140	0.5521
. |******* |	. |***** |	5	0.6991	0.4964
. |******* |	. |***** |	6	0.6943	0.4553
. |******* |	. |**** |	7	0.6791	0.4008
. |****** |	. |*** |	8	0.6440	0.3383
. |****** |	. |**. |	9	0.5919	0.2332
. |***** |	. |*. |	10	0.5312	0.1195
. |***** |	. | . |	11	0.4660	0.0333
. |**** |	. | . |	12	0.3963	0.0064
. |*** |	. | . |	13	0.3145	-0.0213
. |**. |	.*| . |	14	0.2235	-0.0458
. |*. |	.*| . |	15	0.1311	-0.0649
. | . |	.*| . |	16	0.0469	-0.0862
. | . |	.*| . |	17	-0.0234	-0.1107
.*| . |	.*| . |	18	-0.0856	-0.1411
.*| . |	.**| . |	19	-0.1408	-0.1621
.**| . |	.**| . |	20	-0.1843	-0.1731
.**| . |	.**| . |	21	-0.2176	-0.1806
***| . |	.**| . |	22	-0.2515	-0.1914
***| . |	.**| . |	23	-0.2848	-0.2040
***| . |	.**| . |	24	-0.3095	-0.2156

d) Bitcoin and Swiss

BITCOIN,SWISS(-i)	BITCOIN,SWISS(+i)	i	lag	lead
.**| . |	.**| . |	0	-0.2270	-0.2270
***| . |	.**| . |	1	-0.2472	-0.1861
.**| . |	.**| . |	2	-0.2455	-0.1476
.**| . |	. *| . |	3	-0.2293	-0.1237
.**| . |	. *| . |	4	-0.1899	-0.0833
. *| . |	. | . |	5	-0.1349	-0.0305
. *| . |	. | . |	6	-0.0670	0.0219
. | . |	. |*. |	7	-0.0107	0.0700
. | . |	. |*. |	8	0.0359	0.1157
. |*. |	. |*. |	9	0.0633	0.1271
. |*. |	. |*. |	10	0.0789	0.1023
. |*. |	. |*. |	11	0.0712	0.0687
. |*. |	. |*. |	12	0.0694	0.0510
. |*. |	. | . |	13	0.0842	0.0208
. |*. |	. | . |	14	0.0959	-0.0058
. |*. |	. | . |	15	0.1308	-0.0023
. |**. |	. | . |	16	0.1707	-0.0094
. |**. |	. | . |	17	0.1814	-0.0092
. |**. |	. | . |	18	0.1949	-0.0085
. |**. |	. | . |	19	0.1595	-0.0096
. |*. |	. | . |	20	0.0974	-0.0134
. | . |	. | . |	21	0.0365	-0.0175
. | . |	. | . |	22	0.0196	-0.0209
. | . |	. | . |	23	0.0274	-0.0071
. | . |	. | . |	24	0.0328	-0.0000

e) Bitcoin and Pound

BITCOIN,POUND(-i)	BITCOIN,POUND(+i)	i	lag	
. |****** |	. |****** |	0	0.6255	0.6255
. |****** |	. |****** |	1	0.5901	0.6075
. |***** |	. |****** |	2	0.5213	0.5640
. |**** |	. |***** |	3	0.4149	0.5437
. |*** |	. |***** |	4	0.2696	0.5204
. |*. |	. |***** |	5	0.1173	0.4876
. | . |	. |**** |	6	-0.0160	0.4194
. *| . |	. |*** |	7	-0.1088	0.3355
.**| . |	. |**. |	8	-0.1970	0.2300
***| . |	. |*. |	9	-0.2763	0.1354
***| . |	. |*. |	10	-0.3397	0.0943
***| . |	. |*. |	11	-0.3406	0.0767
***| . |	. |*. |	12	-0.3010	0.0680
***| . |	. |*. |	13	-0.2690	0.0686
.**| . |	. |*. |	14	-0.2091	0.0665
.**| . |	. | . |	15	-0.1785	0.0419
.**| . |	. | . |	16	-0.1819	0.0273
.**| . |	. | . |	17	-0.1739	0.0053
.**| . |	. | . |	18	-0.1765	-0.0151
. *| . |	. | . |	19	-0.1309	-0.0258

```
  . *| .   |              . | .   |        20   -0.0619   -0.0308
  . | .   |              . | .   |        21   -0.0255   -0.0318
  . *| .   |              . | .   |        22   -0.0496   -0.0267
  . *| .   |              . *| .   |        23   -0.0884   -0.0426
  . *| .   |              . *| .   |        24   -0.1419   -0.0504
```

f) Bitcoin and Dollar

```
BITCOIN,DOLLAR(-i)  BITCOIN,DOLLAR(+i)      i

  . |***    |           . |***    |       0   0.2742   0.2742
  . |**.    |           . |***    |       1   0.2189   0.2845
  . |**.    |           . |***    |       2   0.1974   0.2888
  . |**.    |           . |**.    |       3   0.2038   0.2447
  . |**.    |           . |**.    |       4   0.2413   0.2089
  . |***    |           . |**.    |       5   0.2994   0.2156
  . |****   |           . |**.    |       6   0.3664   0.2485
  . |****   |           . |***    |       7   0.4102   0.2591
  . |****   |           . |***    |       8   0.4412   0.2611
  . |*****  |           . |**.    |       9   0.4556   0.1904
  . |****   |           . |*.     |      10   0.4488   0.0721
  . |****   |           . | .     |      11   0.4139  -0.0252
  . |****   |           . *| .    |      12   0.3879  -0.0582
  . |****   |           . *| .    |      13   0.3751  -0.0889
  . |***    |           . *| .    |      14   0.3468  -0.1177
  . |***    |           . *| .    |      15   0.3501  -0.1171
  . |****   |           . *| .    |      16   0.3570  -0.1342
  . |***    |           . *| .    |      17   0.3496  -0.1466
  . |****   |           .**| .    |      18   0.3544  -0.1605
  . |***    |           .**| .    |      19   0.3098  -0.1688
  . |**.    |           .**| .    |      20   0.2418  -0.1746
  . |**.    |           .**| .    |      21   0.1784  -0.1778
  . |*.     |           .**| .    |      22   0.1447  -0.1829
  . |*.     |           .**| .    |      23   0.1345  -0.1683
  . |*.     |           .**| .    |      24   0.1221  -0.1606
```

Interpretation: The above analysis has been done to find out the impact of Bitcoin on currency fluctuations of major currencies of the global economy. By observing the analysis it is clear that Bitcoin has a strong impact during initial years (2010) on currencies like dollar, Canadian Swiss, and yen which are narrowed down consequently. On other currencies such as euro, Swiss franc & pound which showed a slight impact but later observed to be negligible.

2) To find the Impact of the selected Economic factors on Bitcoin:

Null Hypothesis:	Obs	F-Statistic	Prob.
DBDI does not Granger Cause BITCOIN	16	2.03154	0.1775
BITCOIN does not Granger Cause DBDI		0.43674	0.6569

Interpretation: Table shows that there is no impact of BDI over Bitcoin i.e., p<0.5 so accept the null

hypothesis. There is an impact of Bitcoin over BDI i.e., accept Alternative hypothesis as p>0.5.

Null Hypothesis:	Obs	F-Statistic	Prob.
DCRUDE does not Granger Cause BITCOIN	16	0.64748	0.5422
BITCOIN does not Granger Cause DCRUDE		0.43242	0.6595

Interpretation: Table shows that there is an impact of Crude oil over Bitcoin i.e., p>0.5 so accept the alternative hypothesis. There is an impact of Bitcoin over Crude oil i.e., accept Alternative hypothesis as p>0.5.

Null Hypothesis:	Obs	F-Statistic	Prob.
DDOLLAR does not Granger Cause BITCOIN	16	0.27470	0.7649
BITCOIN does not Granger Cause DDOLLAR		0.42395	0.6647

Interpretation: Table shows that there is an impact of Dollar over Bitcoin i.e., p>0.5 so accept the alternative hypothesis. There is an impact of Bitcoin over Dollar i.e., accept Alternative hypothesis as p>0.5.

Null Hypothesis:	Obs	F-Statistic	Prob.
INFLATION does not Granger Cause BITCOIN	17	1.48325	0.2657
BITCOIN does not Granger Cause INFLATION		16.5297	0.0004

Interpretation: Table shows that there is no impact of Inflation over Bitcoin i.e., p<0.5 so accept the Null hypothesis. There is no impact of Bitcoin over Inflation i.e., accept Null hypothesis as p<0.5.

Interpretation: On the above economic variables performance tools has been applied on the returns among the four asset classes in the portfolio , Bitcoin has performed in a positive manner with high performance where as in the same period equity & bond market experienced ups & downs . In the year 2014, all the classes' performance found to be good but Bitcoin is found to be better when it compared with the other assets.

4) To measure performance of Bitcoin along with selected currency movements:-

Currencies	Calmar Ratio	Mar Ratio
Euro	0.000646728	0.000626728
CAD	0.000888001	0.00086481
Yen	0.037058454	0.02970584
CHF	0.000436317	0.00496297
GBP	0.000892387	0.000862497
Dollar	0.000306442	0.00028684

Interpretation: From the above performance measures (Calmar Ratio and Mar Ratio) show the performance of currencies with the Bitcoin. We can see that Yen, CAD, and GBP has stronger with the Bitcoin i.e., they didn't got effected with the performance of the Bitcoin.

3) To find the impact of selected economic factors on Bitcoin:-
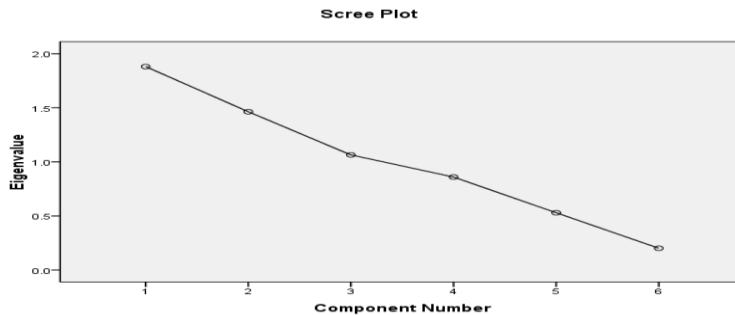
	Component		
	1	**2**	**3**
BDI	0.077	0.608	-0.241
INFLATION	0.365	0.754	0.427
DOLLARINDEX	0.361	-0.574	0.376
EXPORTS	-0.759	0.403	0.153
IMPORTS	0.899	0.17	0.237
CRUDEOIL	0.477	0.08	-0.776

Interpretation: The impact of Bitcoin on selected economic factors (BDI, inflation, dollar index, exports& imports, crude oil) is done by applying factor analysis and it is observed that dollar index is the only variable that is being influenced by the Bitcoin.

4. Comparison of Bitcoin volatility with other select asset class volatility:-

YEAR	BDI	GOLD	BITCOIN	PIMCO	MSCI
2010	8.064179	3.35598	0.124428	0.664229	3.429043
2011	4.866224	3.297909	0.68738	0.517674	2.723905
2012	3.689345	2.17745	0.523171	0.515656	1.942243
2013	6.600496	3.318413	4.425522	0.454879	2.695017
2014	4.660203	2.100607	3.763544	0.534113	2.23689
Total	**27.880447**	**14.250359**	**9.524045**	**2.686551**	**13.027098**

Interpretation: In the above economic variables volatility has been applied for the four asset classes. We can see that the Bitcoin volatility in 2013 is high when compared to the other years. But when we compare Bitcoin with BDI, the volatility of BDI is high in all the years where as gold and MSCI experienced ups and downs and there is no change in the bond.

FINDINGS:-

➢ Bitcoin momentum with MSCI is found to be negative but whereas it is having stronger relationship with bond & gold which indicates Bitcoin is having a chance to replace gold to protect the portfolio when economy goes down

➢ Bitcoin has shown a significant impact on the fluctuations of certain currencies(Dollar, Euro, Canadian Swiss)

➢ Yen, CAD, GBP have not been affected by the fluctuations of the Bitcoin.
➢ The Volatility of Bitcoin is very low when compared to BDI, Gold, and MSCI.
➢ Bitcoin can be used as hedging tool in portfolio instead of PIMCO since the volatility is very low for these both with comparison with other assets.

CONCLUSION:

I conclude the analysis of bitcoin with emphasis on various currencies effect and select economic factor influence with electronic currency. In this analysis few global currencies has been considered with that bitcoin is found to be performing in positive way out of select economic factors crude oil and dollar index is having a stronger influence but when all other factors influence not been observed. Risk has been measured with volatility of the select global assets class along with the global economic indicator (bdi). The volatility has been proven that often bond market, bitcoin risk level is found it be higher which indicates that the high risk investors can't consider for the investment in this segment. This analysis has proven that investor who wanted to maintain a global portfolio can consider bitcoin which can minimize the currency flotation risk, so that his investment can be protected. Hence there is a further scope to do research where bitcoin replaces gold which can act as a hedging tool against the negative economic factor to protect the portfolio.

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