

BANKING CRISIS IN AFRICA

BETWEEN 1860-2014 AND THE LESSONS THEREFROM

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INTRODUCTION

African countries have faced banking crisis in one year or the other in the last 150 years. In order to understand the nature and frequency of such crisis and study whether there exists any co-relation with the events specific to the country or due to global events, a business analysis is done by collecting a few data points available in the public domain.

Dataset

The datasets collected specifically focus on the Banking, Debt, Financial, Inflation and Systemic Crises that occurred, from 1860 to 2014, in 13 African countries, including: Algeria, Angola, Central African Republic, Ivory Coast, Egypt, Kenya, Mauritius, Morocco, Nigeria, South Africa, Tunisia, Zambia and Zimbabwe. Thus, the study is restricted to a sample size of 13 in African continent.

Link: <https://www.kaggle.com/chirin/africa-economic-banking-and-systemic-crisis-data>

Link <https://www.hbs.edu/behavioral-finance-and-financial-stability/data/Pages/global.aspx>

Our Study

The African region consisting of 50+ countries faced economic crisis during the period 1840-2014, more than in any other region of the world. The period selected for business analysis is from 1940 to 2014. As the variables to be examined are many and data length is more, in order to draw meaningful conclusions, the sample size taken for our initial study is confined to 13 major African countries listed above. Later on, we have focused on top 3 countries for further detailed analysis.

Thus, the countries where detailed business analysis is done comprise Central African Republic, Egypt, and Zimbabwe.

Currencies of the countries under observation:

The West African countries including Central African Republic have CFA Franc as their currency, which is initially pegged to French Franc and later to Euro. The CFA franc was first created by France in 1945 as a single currency for its former West African colonies. (Source: <https://www.theafricareport.com/24170/is-the-time-right-for-a-single-currency-in-west-africa/>)

Egypt has Egyptian Pound as its currency where as Zim Dollar is the Zimbabwe's currency.

Year of banking crisis:

All the 13 African countries under observation faced the banking crisis at one time or the other between 1840 to 1914, while some have faced more frequently, while others sporadically as captured in Table-1.

Country	Year	Country	Year	Country	Year
Algeria	1870	Egypt	1907	Nigeria	2010
Algeria	1990	Egypt	1931	Nigeria	2011
Algeria	1991	Egypt	1981	Nigeria	2012
Algeria	1992	Egypt	1982	Nigeria	2013
Angola	1992	Egypt	1983	Nigeria	2014
Angola	1993	Egypt	1990	South Africa	1977
Angola	1994	Egypt	1991	South Africa	1978
Angola	1995	Egypt	1992	South Africa	1989
Angola	1996	Egypt	1993	Tunisia	1991
Angola	1997	Egypt	1994	Tunisia	1992
Angola	1998	Egypt	1995	Tunisia	1993
Central African Republic	1976	Ivory Coast	1988	Tunisia	1994
Central African Republic	1977	Ivory Coast	1989	Tunisia	1995
Central African Republic	1978	Ivory Coast	1990	Zambia	1995
Central African Republic	1979	Ivory Coast	1991	Zambia	1996
Central African Republic	1980	Kenya	1985	Zambia	1997

Central African Republic	1981	Kenya	1986	Zambia	1998
Central African Republic	1982	Kenya	1987	Zimbabwe	1995
Central African Republic	1988	Kenya	1988	Zimbabwe	1996
Central African Republic	1989	Kenya	1992	Zimbabwe	1997
Central African Republic	1990	Kenya	1993	Zimbabwe	1998
Central African Republic	1991	Kenya	1994	Zimbabwe	1999
Central African Republic	1992	Kenya	1995	Zimbabwe	2000
Central African Republic	1993	Mauritius	1996	Zimbabwe	2001
Central African Republic	1994	Morocco	1983	Zimbabwe	2002
Central African Republic	1995	Morocco	1984	Zimbabwe	2003
Central African Republic	1996	Nigeria	1992	Zimbabwe	2004
Central African Republic	1997	Nigeria	1993	Zimbabwe	2005
Central African Republic	1998	Nigeria	1994	Zimbabwe	2006
Central African Republic	1999	Nigeria	1995	Zimbabwe	2007
-	-	Nigeria	1997	Zimbabwe	2008
-	-	Nigeria	2009	Zimbabwe	2009

Table - 1

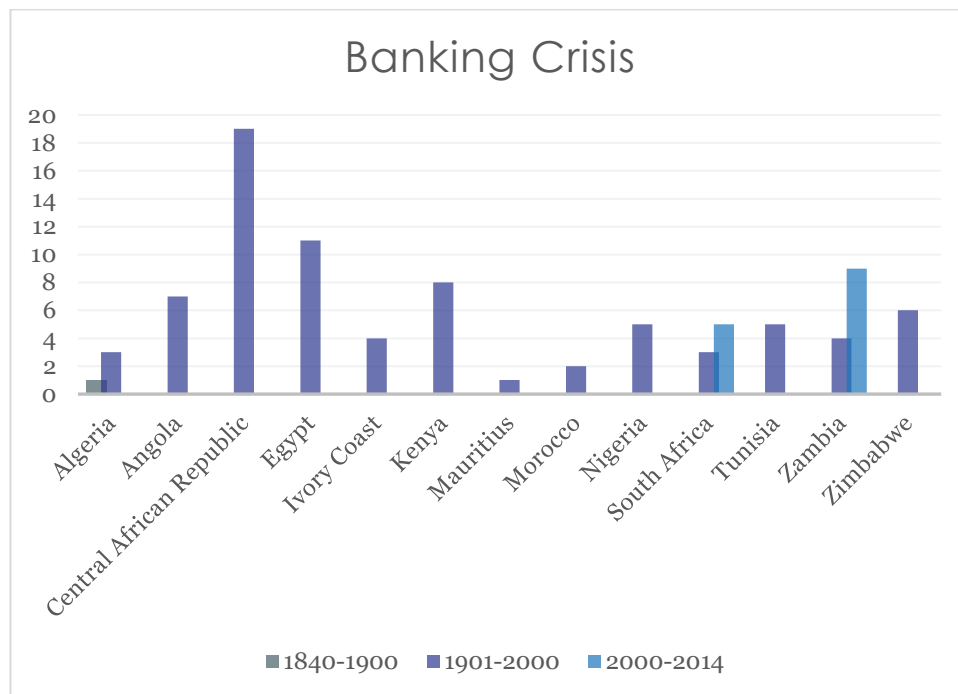
Frequency of banking Crisis:

The Table 2 below captures the position of the banking crisis during the period of our observation. It is evident that the crisis was more pronounced in the 20th century (i.e., between 1901 to 2000) and widespread, where all the countries were affected. However, banking woes continued beyond 2000 for South Africa and Zimbabwe.

Serial Number	Country	1840-1900	1901-2000	2000-2014	Total
1	Algeria	1	3	-	4
2	Angola	-	7	-	7
3	Central African Republic	-	19	-	19
4	Egypt	-	11	-	11
5	Ivory Coast	-	4	-	4
6	Kenya	-	8	-	8
7	Mauritius	-	1	-	1
8	Morocco	-	2	-	2
9	Nigeria	-	5	6	11
10	South Africa	-	3	-	3
11	Tunisia	-	5	-	5
12	Zambia	-	4	-	4
13	Zimbabwe	-	6	9	15

Table – 2

The banking crisis during 1840-1914 is depicted in the following Diagram:



Graph - 1

Top 3 Countries which Faced Banking Crisis:

In order to further analyze the reasons for the banking crisis, we have selected the top 3 countries which faced the banking crisis during the period 1940-2014. Even though Nigeria also faced the crisis in 11 times, for our analysis, we have taken Egypt which is considered to be a well-managed economy compared to the others.

Serial Number	Country	1840-1900	1901-2000	2000-2014	Total
1	Central African Republic	-	19		19
2	Zimbabwe	-	6	9	15
3	Egypt	-	11		11

Table – 3

Co-relation Between Banking Crisis and Currency Fluctuations:

In order to establish the co-relation between banking crisis and other factors, the movement of the local currency vs USD has been examined for the Top 3 countries mentioned in Para 4 above.

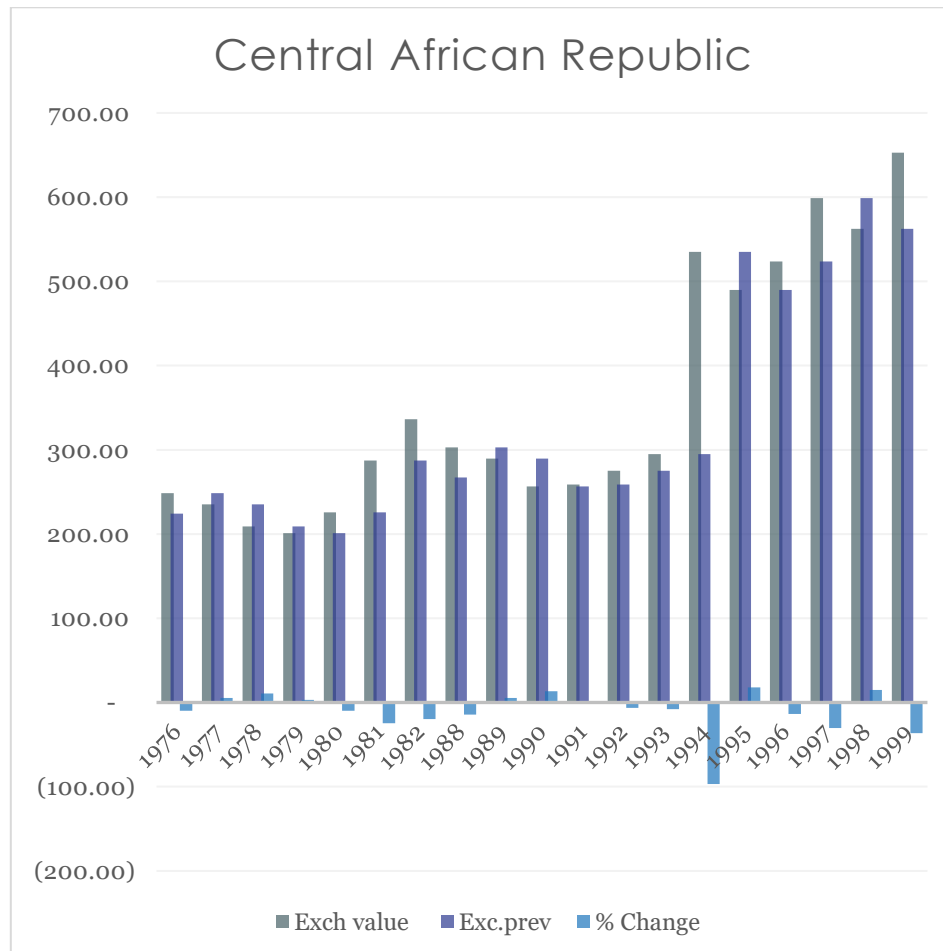
Central African Republic:

Central African Republic faced high exchange rate fluctuations as shown in Table 3 and Graph 2 in the early 80s and 90s. The peak of exchange rate fluctuations was in 1994 when the Republic's currency CFA franc depreciated as much as 96,67% over the previous year.

Year of Banking Crisis	Exchange value	Previous Exchange value	% Change
1976	248.49	224.27	-9.74
1977	235.25	248.49	5.33
1978	209.00	235.25	10.56
1979	201.00	209.00	3.22
1980	225.80	201.00	-9.98
1981	287.40	225.80	-24.79

1982	336.25	287.40	-19.66
1988	302.95	267.00	-14.47
1989	289.40	302.95	5.45
1990	256.45	289.40	13.26
1991	259.00	256.45	-1.03
1992	275.32	259.00	-6.57
1993	294.77	275.32	-7.83
1994	535.00	294.77	-96.67
1995	490.00	535.00	18.11
1996	523.70	490.00	-13.56
1997	598.81	523.70	-30.23
1998	562.21	598.81	14.73
1999	652.95	562.21	-36.52

Table -4



Graph - 2

Egypt

During the banking crisis, Egypt did not experience volatile currency rates as evidenced by the negligible % change of currency value in the year of crisis.

Year of banking crisis	Exchange value	Previous Exchange value	% Change
1907	0.20	0.20	-0.00
1931	0.29	0.20	-0.04
1981	0.70	0.70	-
1982	0.70	0.70	-
1983	0.70	0.70	-
1990	2.00	1.10	-0.36
1991	3.33	2.00	-0.54
1992	3.34	3.33	-0.00
1993	3.37	3.34	-0.01
1994	3.39	3.37	-0.01
1995	3.39	3.39	0.00

Table - 5

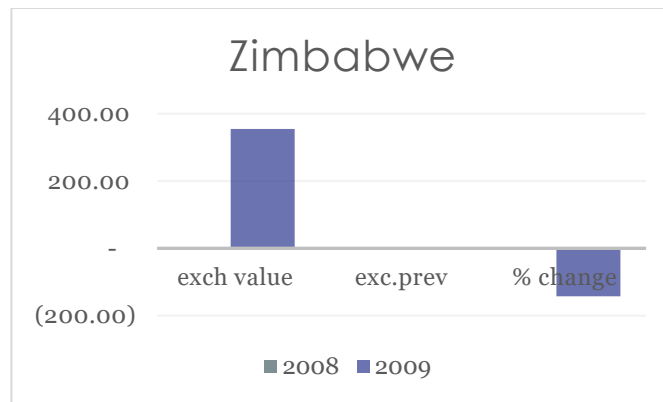
Note: Exchange Value denotes exchange value in the year of banking crisis
Previous Exchange Value denotes exchange value in the previous of banking crisis.

Zimbabwe

However, Zimbabwe faced severe crisis in 2008 and 2009 as shown in the table below:

Year of banking crisis	Exchange value	Previous Exchange value	% Change
2008	0.00	0.000000000000	- 0.000804861363
2009	354.80	0.002000000000	- 142.781600869250

Table - 6



Graph - 3

Co-Relation between Banking Crisis and Sovereign Debt default

Sovereign debt represents the debt of a country's central government owes to its domestic and foreign creditors.

The following tables capture the year of banking crisis in the Top 3 countries and establish whether it is coupled with a sovereign debt default. Central African Republic had defaulted on Sovereign Debt on 13 occasions out of 19 years of banking crisis, during the period of our observation. Even though Egypt had faced banking crisis, it did not default on any of those years on its sovereign debt. However, Zimbabwe has mixed performance. Out of the 15 years of its crisis, it defaulted on 10 occasions.

Country	Year of banking crisis	Sovereign debt default
Central African Republic	1976	0
Central African Republic	1977	0
Central African Republic	1978	0
Central African Republic	1979	0
Central African Republic	1980	0
Central African Republic	1981	1
Central African Republic	1982	0

Central African Republic	1988	1
Central African Republic	1989	1
Central African Republic	1990	1
Central African Republic	1991	1
Central African Republic	1992	1
Central African Republic	1993	1
Central African Republic	1994	1
Central African Republic	1995	1
Central African Republic	1996	1
Central African Republic	1997	1
Central African Republic	1998	1
Central African Republic	1999	1

Table - 7

Country	Year of banking crisis	Sovereign debt default
Egypt	1907	0
Egypt	1931	0
Egypt	1981	0
Egypt	1982	0
Egypt	1983	0
Egypt	1990	0
Egypt	1991	0
Egypt	1992	0
Egypt	1993	0
Egypt	1994	0
Egypt	1995	0

Table – 8

Country	Year of banking crisis	Sovereign debt default
Zimbabwe	1995	0
Zimbabwe	1996	0
Zimbabwe	1997	0
Zimbabwe	1998	0
Zimbabwe	1999	0
Zimbabwe	2000	1
Zimbabwe	2001	1
Zimbabwe	2002	1
Zimbabwe	2003	1
Zimbabwe	2004	1
Zimbabwe	2005	1
Zimbabwe	2006	1
Zimbabwe	2007	1
Zimbabwe	2008	1
Zimbabwe	2009	1

Table – 9

Inflation pressures and systemic crisis in the year of Banking Crisis:

A **systemic crisis** can be defined as a financial or monetary crisis with a domino effect in which financial trouble spreads between institutions and markets until it affects the whole monetary and financial system with dire global economic consequences. During the systemic crisis country may witness collapse of all important financial institutions such as banks, investment houses, pension funds, insurance companies etc., effecting the whole financial and monetary system.

Central African Republic

Central African Republic faced Systemic crisis in all the years when the Banking Crisis occurred. This leads us to believe that Systemic Crisis prevalent in the respective years would have led to bank crisis.

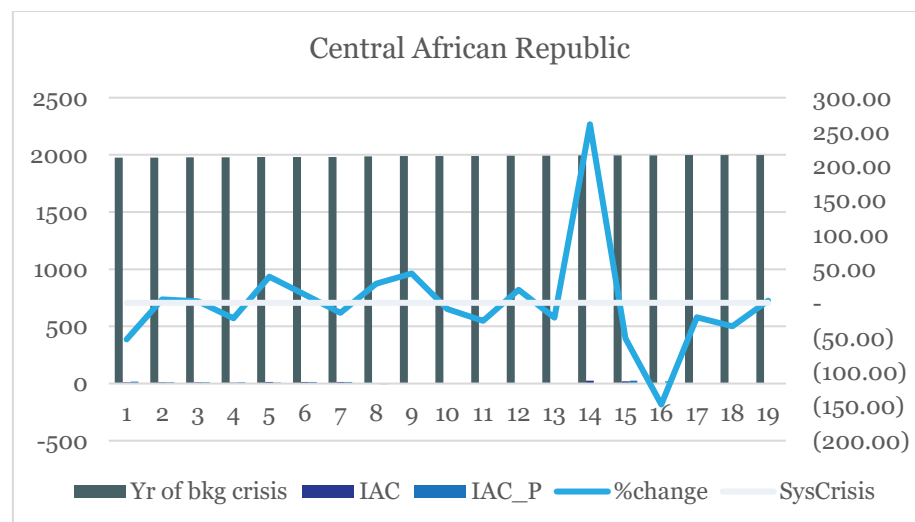
Year of banking crisis	IAC	IAC_P	%change	Systemic Crisis
1976	10.51	16.03	-52.50	1.00
1977	11.14	10.51	6.00	1.00
1978	11.49	11.14	3.33	1.00
1979	9.21	11.49	-21.70	1.00
1980	13.30	9.21	38.91	1.00
1981	14.66	13.30	12.94	1.00
1982	13.24	14.66	-13.48	1.00
1988	-3.93	-6.99	29.04	1.00
1989	0.65	-3.93	43.57	1.00
1990	-0.20	0.65	-8.07	1.00
1991	-2.85	-0.20	-25.17	1.00
1992	-0.76	-2.85	19.90	1.00
1993	-2.91	-0.76	-20.48	1.00
1994	24.55	-2.91	261.27	1.00
1995	19.20	24.55	-50.90	1.00
1996	3.72	19.20	-147.26	1.00
1997	1.60	3.72	-20.23	1.00
1998	-1.87	1.60	-33.00	1.00
1999	-1.42	-1.87	4.34	1.00

Table - 10

Note: IAC = Inflation Annual CPI (annual consumer price index inflation)

IAC_P= Inflation Annual CPI- Previous year (annual consumer price index of previous year)

During the last 25 years of 20th century, i.e. From 1976 to 1999 Central African Republic faced highly volatile inflation levels year on to year. While it could control inflation in 1976, 1979 and 1982, the best performance being in 1996 when the inflation came down by 147.26%. However, the worst inflation was witnessed in 1994. Since 2000, the country could recover.



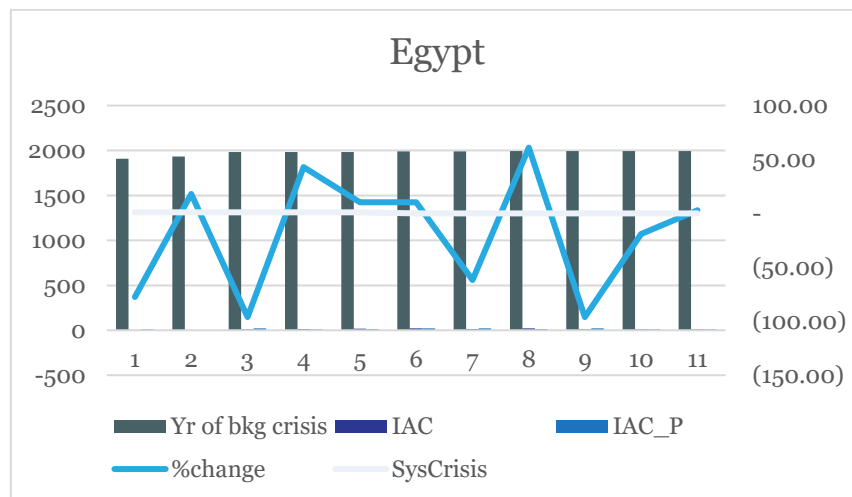
Graph - 4

Egypt:

The number of occurrences of Banking Crisis in Egypt was comparatively lower than South African Republic and Zimbabwe. However, the country had to go through the pains prevailing in the region in 1990s. Even though it faced tumultuous position in the early 1980s, it could register a better performance in controlling inflation from 1982 onwards.

Year of banking crisis	IAC	IAC_P	%change	Systemic Crisis
1907	1.31	9.45	-77.46	1.00
1931	-5.02	-6.92	18.10	1.00
1981	10.40	20.50	-96.10	1.00
1982	14.90	10.40	42.82	1.00
1983	15.98	14.90	10.29	1.00
1990	21.22	20.13	10.37	-
1991	14.74	21.22	-61.67	-
1992	21.14	14.74	60.94	-
1993	11.04	21.14	-96.10	-
1994	9.05	11.04	-18.99	-
1995	9.36	9.05	3.00	-

Table – 11



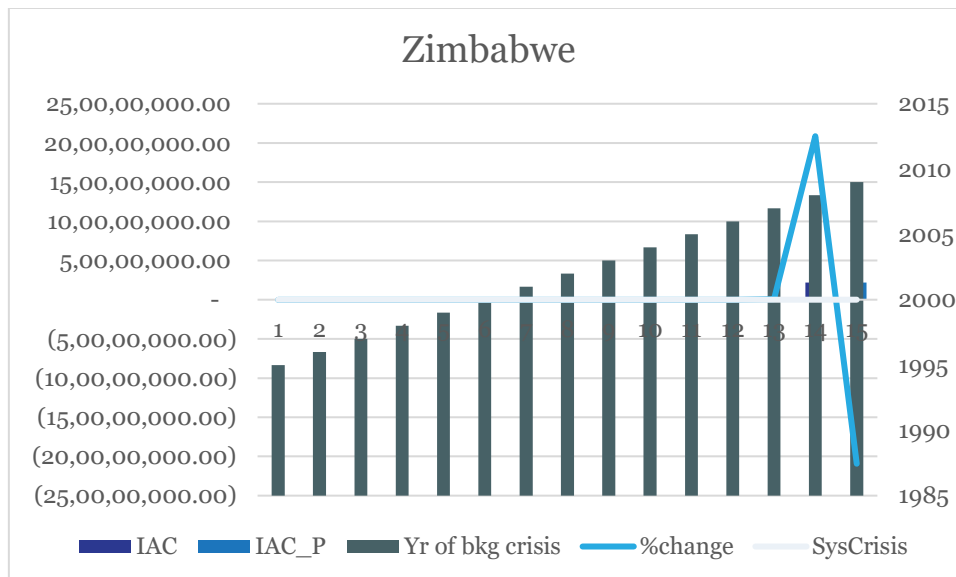
Graph - 5

Zimbabwe:

Zimbabwe had the worst crisis which started in the late 1990s and continued beyond 2000. It faced Hyperinflation during 2008-2009 indicating a period of currency instability. The Government of Zimbabwe stopped filing official inflation statistics during this period. In April 2009, the country stopped printing its currency, with currencies from other countries being used. Incidentally, in mid-2015, Zimbabwe announced plans to switch over the USD. The currency of its own was reintroduced in June 2019 as Zimbabwe Dollar and pegged to USD but by that time the inflation of the country touched 175% and 737% by July 2020. (Source: Wikipedia)

Year of banking crisis	IAC	IAC_P	%change	Systemic Crisis
1995	25.81	21.11	44.67	1.00
1996	16.40	25.81	-89.52	1.00
1997	20.07	16.40	34.87	1.00
1998	46.61	20.07	252.58	1.00
1999	56.92	46.61	98.12	1.00
2000	55.20	56.92	-16.36	1.00
2001	112.12	55.20	541.53	1.00
2002	198.93	112.12	825.98	1.00
2003	598.74	198.93	3,804.15	1.00
2004	132.75	598.74	-4,433.85	1.00
2005	585.84	132.75	4,311.11	1.00
2006	1,281.11	585.84	6,615.31	1.00
2007	66,279.89	1,281.11	6,18,446.99	1.00
2008	2,19,89,695.22	66,279.89	20,85,95,769.05	1.00
2009	-7.67	2,19,89,695.22	-20,92,26,478.50	1.00

Table – 12



Graph - 6

OBSERVATION & CONCLUSIONS

An attempt has been made in the following few lines to co-relate the events witnessed globally and validates the test results thrown up by our business analysis scientifically.

Out of the countries selected for analysis, as our results have indicated, Zimbabwe faced the worst currency crisis, coupled with hyper-inflation, banking and sovereign defaults leading to Systemic crisis. The country's economic woes have continued beyond 2000 and continues to struggle. Even though Zimbabwe attempted a fixed exchange rate of USD 1 / ZWL 57 in June 2020, things did not improve.

Our study also indicates that the crisis may emerge in an area and can have cascading effect if not controlled with timely interventions. We have seen in our analysis that the countries which had higher inflation, faced devaluation of their currencies, defaults in sovereign debt, followed by banking crisis and systemic risk. In a few cases, the policies of the Governments also have led to further crisis. For example, in order to tide over the currency fluctuations due to it volatile foreign exchange rates, Zimbabwe banned all mobile money services, but consumer and business units have suffered as most of the transactions are done through such e-services, crippling the sagging economy. Currency devaluation also caused doubling of fuel prices.

(Source:<https://www.eca-international.com/insights/blog/june-2020/june-currency-review-zimbabwe-devalues>)

Our analysis also indicated that Central African Republic (CAR) also suffered due to the **early 1980 recession** the world has witnessed between the start of 1980 and 1983. During this period (CAR) has witnessed high inflationary pressure as shown in Table 9 above.

The world again witnessed **early 1990s recession** which describes the period of economic downturn affecting much of the western world in the early 1990s. Our analysis as depicted in Table 9 and 10 also captures that CAR and Egypt have faced recession as part of the global phenomena.