Is slow economic growth originating from the total external debt stock in the Democratic Republic of Congo?

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Abstract

Unsustainable debt reduces productivity of a country. Ten years following its “1960 independence”, the Democratic Republic of Congo adopted policies of resorting to external financing while the world was at the peak of the petro-dollar crisis in the 1970’s. A decade later, in the 1980’s, with the fall in price of raw materials, the Democratic Republic of Congo was trapped in an unsustainable debt burden cycle that saw its economy stagnating with the majority of its population living in extreme poverty with less than US$1.90 a day according to the World Bank. The rise of active armed conflicts in the 1990’s and political unrest during the 2000's added pressures to seek further financial support from creditors, which facilitated corruption and poverty in the process.

A country's inability to service its debt has consequences on its population. With empirical evidence, our analysis will be looking at the Congolese standard of living from its independence in 1960 to the historical democratic transfers of power in late 2018 to understand the effects of external debts in the Congolese economic growth.

List of Acronyms

- G.D.P. - Gross Domestic Product
- I.M.F. - International Monetary Fund
- S.A.P. - Structural Adjustment Programmes
- U.N. - United Nations
- U.S.A. - United States of America

I. Introduction

Ten years following its independence in 1960, the Democratic Republic of Congo expressed the need for external financial support to maintain peace and resuscitate its economy following the Congo Crisis. The mismanagement of funds in the mid 1970's led to further instabilities, corruption and poverty in the 1980's, which in turn led to further armed conflicts in the 1990's and early 2000's. According to Collier (2002), the conflict trap theory is one of the reasons for slow economic growth in countries such as the Democratic Republic of Congo since armed conflicts lead to poverty and poverty is the cause of armed conflicts.

In the Democratic Republic of Congo, successive governments have been unable to end the poverty cycle since much of their policies evolved around keeping the country into unsustainable debts by seeking additional financial support from external creditors to tackle internal economic challenges, while diverting and embezzling aid money aimed at supporting debt management.

Much of the Congolese debt was incurred during the Cold War era when then president Mobutu received more aid from U.S.A. than the rest of Sub-Saharan Africa combined: $300 million in weapons and $100 million in military training. During his 32 years tenure, he accumulated a personal fortune estimated at more than $4 billion, while his government ran up an estimated ***total external debt stock*** of around $12 billion, which represented nearly 225% of GDP and 1,280% of export. Boyce and Ndikumana(2011). Following years of mismanagement, the World Bank suspended its financial assistant to the Democratic Republic of Congo in 1993. In 1994, annual inflation was 9,796.9%. Therefore, the total external debt service[1] increased from 119.6% in 1990 to 271.4% in 1995. In 1997, then president Mobutu and its government left the country with arrears repayment of $10.9 million. In 1998, armed conflicts financed by the government of Rwanda and Uganda added pressure to the repayment.

The I.M.F. and the World Bank stated that the Democratic Republic of Congo was vulnerable to financial shocks because of its debt burden and promoted S.A.P. as responsible economic

[1] Percentage of Gross National Income required to cover the payment of interest and principal on the debt

policies for developing countries since the early 1980s by the provision of loans conditional on the adoption of certain policies.

However, The Sentry (2019) investigated corruption between Congolese officials and bankers legitimising illegal transactions from external loans using banking institutions to enrich a selected minority at the expense of the overall population.

Early research by Moyo (2010) explored the myth around aid money for development to conclude that it failed to stimulate economic growth in African countries and contributed to corruption between 1970 to 1998 such as the embezzlement of US$5 billion by Mobutu, the late president of Zaïre (actual Democratic Republic of Congo).

Since its independence, the Democratic Republic of Congo has been in a debt cycle leading to corruption and poverty. With an aim of assessing the relationship between economic growth and total external debt stock in the Democratic Republic of Congo, our analysis will have a threefold objectives by:

- providing an overall view of the economy of the Democratic Republic of Congo from 1960 to 2018 using GDP per Capita,
- exploring the Democratic Republic of Congo total external debt stock,
- to finally conclude, ***ceteris paribus***, on relationships between total external debt stock and economic growth and drawing recommendations.

II. Data and Empirical Strategy

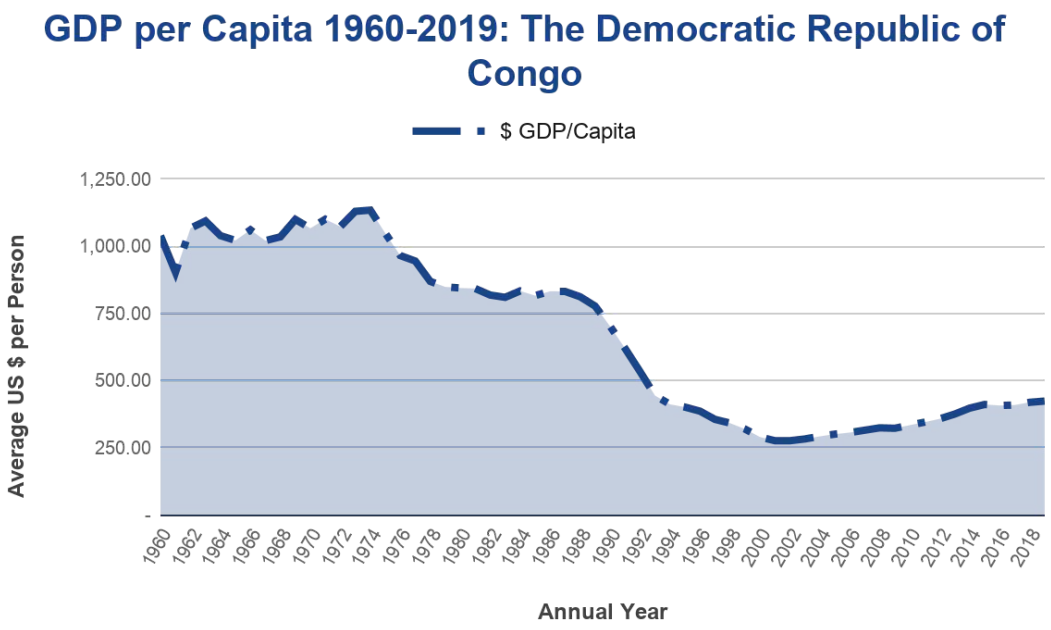
We are looking at a 58 years period of data from 1960 to 2018 to understand GDP per Capita and total External Debt stock. We will then have an insight into the current government in office to examine the latest data. Therefore, we should be expecting 60 observations paired based on years.

II.1. Data

Economic growth will be assessed using GDP per Capita, which is a country standard of living collected from the World Bank at 2010 constant[2]. The World Bank is a recognised and reliable global source of economic data. Countries' data are from their respective national statistical systems and improved to global standards to become effective analytical tools. As the World Bank's goal is the reduction of poverty by providing loans and grants, data have been assessed by the organisation to be accurate and trustworthy for decision-making.

The annual GDP per capita will measure the value of yearly production in the Democratic Republic of Congo during our selected period, and divided by the number of inhabitants in the middle of relevant years. Data are adjusted for inflation and differences at 2010 fixed prices to allow accuracy in economic comparisons.

[2] Data available from the World Bank: https://data.worldbank.org/indicator/NY.GDP.PCAP.KD?locations=CD [Accessed 13 December 2020]



Graph 1 - Average productivity by the average Congolese in US $ from 1960 to 2019. Data were collected from the World Bank adjusted at 2010 to exclude the effect of inflation allowing accurate economic comparison from year to year

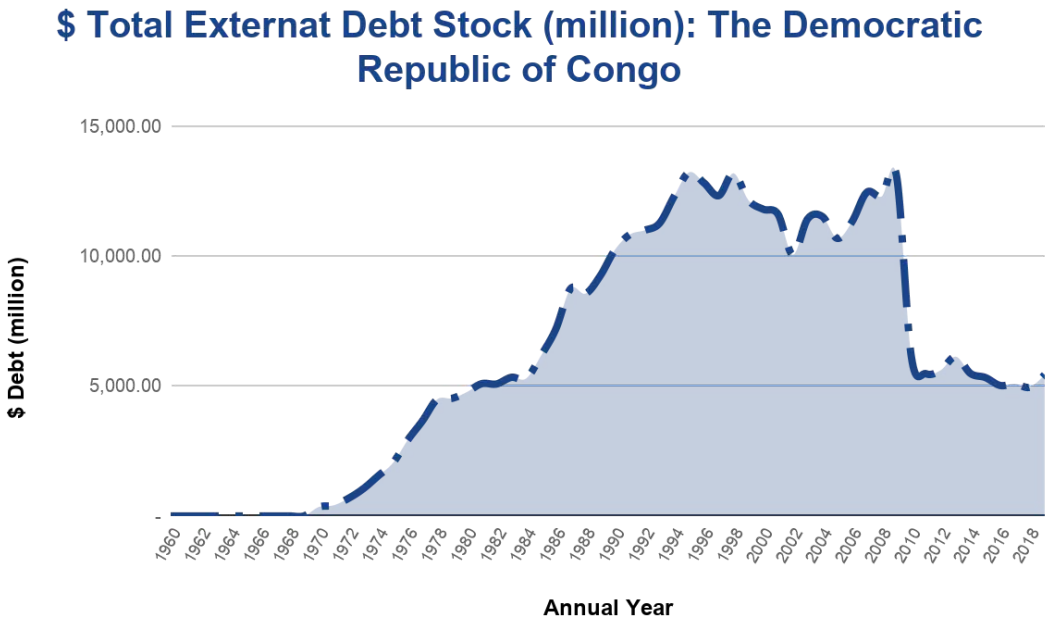
GDP per Capita in *Graph 1* suggests that the Democratic Republic of Congo's standards of living from 1960 to 2019 more than halved to prompt questions about the effect of events/factors from the 1970's to early 2000's. One of these factors, *ceteris paribus*, is the total external debt stock.

Focus Economics[3] (2020) defines external debt as a percentage of GDP being the ratio between the debt a country owes to non-resident creditors and its nominal GDP. It is money borrowed from foreign lenders, including commercial banks, governments or international financial institutions. Debtors can be individuals, corporations or governments. The external debt comprises the outstanding amount of those actual current and not contingent, liabilities owed to non-residents by residents of the country, which require the debtor to pay principal and/or interest in the future; increasing the initial amount, which with the lack of productivity may have a negative impact on economic growth.

External debt is also known as foreign debt or external debt stocks. For our analysis, we will be using the "***total external debt stocks***" defined by the World Bank as debt owed to non-residents repayable in currency, goods, or services. Total external debt stock is the sum

[3] Available online at: https://www.focus-economics.com/economic-indicator/external-debt [Accessed 29 December 2020]

of public, publicly guaranteed, and private non-guaranteed long-term debt, use of IMF credit, and short-term debt where short-term debt includes all debt having an original maturity of one year or less and interest in arrears on long-term debt.



Graph 2 - Total External Debt Stocks of the Democratic Republic of Congo in million US $ from 1960 to 2019. Data were collected from the World Bank

Total External Debt Stock from the World Bank are in current U.S. dollars[4] as shown in *Graph 2*. Data suggest that the Democratic Republic of Congo started to increase its total external debt stock as an independent country from the 1970's well under $5,000 million to reach a peak of $10,000 to $15,000 million in the 1990's and early 2000's. A sharp decrease occurred from 2008 to 2010, from which the total external debt stock has been constant around $5,000 million[5].

II.2. Empirical Strategy

[4] Data available from: https://data.worldbank.org/topic/external-debt?display=d [Accessed 30 December 2020]
[5] the equivalent amount laundered by then president Mobutu

We are analysing the relationship between total external debt stock in the Democratic Republic of Congo and standard of living. *Graph 1* & *Graph 2* are signalling the existence of a negative correlation, which we will investigate with the linear regression *(eq.1)*:

$$G_t = \alpha + \beta D_t + \varepsilon \quad \textit{(eq.1)}$$

G_t is our our growth, the standard of living define by GDP per Capita at year t ;

α is our intercept, the GDP per Capita when the total external debt stock is at zero ;

β is our slope that determine how growth will behave at an additional debt;

D_t is the shock to growth, the independent variable that is debt during year t ;

ε represent the error in our model; *ceteris paribus* factors.

III. Results and Interpretation

III.1. Main Results

III.1.1. Testing: T-Test

The T-Test determines the level of significance between our group of data (GDP per Capita & Debt) and their respective means.

Our Hypotheses are as follow:

$H_0 : \mu \leq 0$; *null hypotheses assuming growth not impacted by debt*

$H_1 : \mu > 0$; *alternative hypotheses that our growth increases following debt*

With a 5% significance (0.05), giving us a 95% accuracy of samples.

t-Test: Paired Two Sample for Means		
	$ GDP/Capita	*$ Debt (million)*
Mean	669.3261883	6290.983121
Variance	97203.59543	21128117.66
Observations	60	60
Pearson Correlation	-0.8226372648	
Hypothesized Mean Difference	0	
df	59	
t Stat	-8.966834891	
P(T<=t) one-tail	0	
t Critical one-tail	1.671092973	
P(T<=t) two-tail	0	
t Critical two-tail	2.000995318	

The absolute value of our t-Stat at 8.9 suggests that there is greater evidence against the null hypotheses. And with both P values (one & two tails) equal to zero, the null hypotheses (H_0) will be rejected with strong evidence of higher significance and accuracy of sample data.

III.1.2. Linear Regression

Having tested the significance/accuracy of our data, we will look into their relationships from ***eq.1***. Our aim is to understand growth/standard of living as a dependent variable of total external debt stock.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	*0.8226372648*							
R Square	***0.6767320694***							
Adjusted R Square	*0.6711584844*							
Standard Error	*178.7864023*							
Observations	***60***							
ANOVA								
	df	*SS*	*MS*	*F*	***Significance F***			
Regression	*1*	*3881066.627*	*3881066.627*	*121.4177353*	***0***			
Residual	*58*	*1853945.503*	*31964.57764*					
Total	*59*	*5735012.13*						
	Coefficients	*Standard Error*	*t Stat*	***P-value***	*Lower 95%*	*Upper 95%*	*Lower 95%*	*Upper 95%*
Intercept	***1020.350875***	*39.33920073*	*25.93725484*	***0***	*941.604911*	*1099.096838*	*941.604911*	*1099.096838*
$ Debt (million)	***-0.0557980652***	*0.005063817857*	*-11.01897161*	***0***	*-0.06593439764*	*-0.04566173275*	*-0.06593439764*	*-0.04566173275*

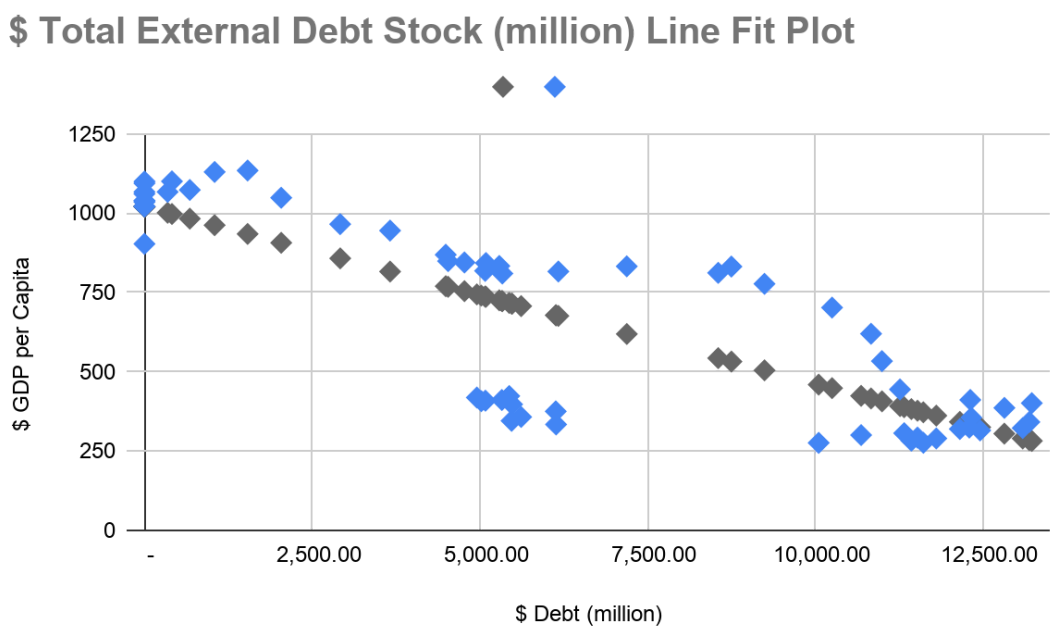
The key result will be the R Square, which will determine the level in which external debt influences GDP per Capita. It indicates that from our 60 observations, GDP per Capita is influenced at 67.67% by total external debt stock.

With the significance F lower than 0.05 at 0, we have a strong significance regression for our results as also confirmed by our T-Test in III.1.1.

Our coefficients are suggesting that:

- we should be expecting $1,020 GDP per Capita as intercept, at
- a negative debt of ($0.055 million) as our slope confirming the negative relationship between debt and GDP per Capita.

Looking in the P value, we can confirm that debt has an effect on GDP per Capita because at 0, our P value are lower than 0.05



Graph 3 - Total External Debt Stocks vs GDP per Capita of the Democratic Republic of Congofrom 1960 to 2019. Data collected from the World Bank and process using excel scatter graph

We will therefore obtain *Graph 3* by predicting GDP per Capita using coefficients from selected data. The black dots are our predicted GDP per Capita, which decreases as debt increases. The blue dots are the actual GDP per Capita fitting our expectations.

We can confirm that Eq.1 is a good regression and there is a negative relationship between GDP per Capita and External Debt. Since 1960, Economic growth in the Democratic Republic of Congo has been driven by the total external debt stock. The higher the external debt, the lower the standard of living.

V. Conclusion & Recommendations

Our aim was to determine whether slow economic growth was a consequence of total external debt stock in the Democratic Republic of Congo. We suggested a linear regression with GDP per Capita as a dependent variable of total external debt stock. We tested our data for significance to fit our regression model. Our results confirm that **in the Democratic Republic of Congo, by using GDP per Capita as an indication of standard of living, economic growth is driven by the level of external debt assuming that all other economic factors are held constant**.

Therefore, the Democratic Republic of Congo required a robust national budget that will tackle the total external debt stock to support economic growth. Not prioritizing debt reduction, but sustainability is key as total external debt stock has been constantly increasing from the 1970's the late 1990's, stabilized in the early years of 2000 when we could observe stable GDP per Capita.
Debt may influence, but it is not necessarily the main issue. Our analysis assumed that all other economic factors were constant. Roux de Bézieux (2020) stated in an interview that debt reduction in time of crisis is not necessarily the priority, but the ability to reimburse it by setting robust economic policies for the future. With regards to the Democratic Republic of Congo, robust policies are key to sustain the debt adequately by reimburse interest and principal while promoting growth.

The total External Debt Stock of the Democratic Republic of Congo has been constantly its economic challenge from 1970's to the early years of 2000. Reducing the Debt should be a social responsibility. The country should therefore determine its limits identifying the level where its debt does not prejudice economic growth. Then set robust policies for job creation, revised expenditures and implement fair taxation to start repaying the total external debt stock and reduce its reliance on aid.

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Appendix

	Growth, Debt & Politics - DR Congo				
Year	*$ GDP/Capita*	*% growth*	*$ Debt (million)*	*Leader*	*Regime*
1960	1,038.93		-	Kasa-Vubu	Elected
1961	903.13	-13.07	-	Mobutu	Interim
1962	1,067.06	18.15	-	Kasa-Vubu	Elected
1963	1,094.01	2.53	-	Kasa-Vubu	Elected
1964	1,039.41	-4.99	-	Kasa-Vubu	Elected
1965	1,021.61	-1.71	-	Kasa-Vubu	Elected
1966	1,060.77	3.83	-	Mobutu	Dictatorship
1967	1,020.79	-3.77	-	Mobutu	Dictatorship
1968	1,034.88	1.38	-	Mobutu	Dictatorship
1969	1,099.68	6.26	-	Mobutu	Dictatorship
1970	1,066.77	-2.99	345.22	Mobutu	Dictatorship
1971	1,100.42	3.15	410.05	Mobutu	Dictatorship
1972	1,073.00	-2.49	676.59	Mobutu	Dictatorship
1973	1,129.87	5.30	1,046.51	Mobutu	Dictatorship
1974	1,134.30	0.39	1,538.50	Mobutu	Dictatorship
1975	1,048.55	-7.56	2,038.61	Mobutu	Dictatorship
1976	965.20	-7.95	2,918.45	Mobutu	Dictatorship
1977	944.92	-2.10	3,661.97	Mobutu	Dictatorship
1978	869.07	-8.03	4,491.70	Mobutu	Dictatorship
1979	848.75	-2.34	4,527.13	Mobutu	Dictatorship
1980	844.50	-0.50	4,770.69	Mobutu	Dictatorship
1981	842.57	-0.23	5,090.79	Mobutu	Dictatorship
1982	818.23	-2.89	5,078.79	Mobutu	Dictatorship
1983	809.72	-1.04	5,335.73	Mobutu	Dictatorship
1984	833.58	2.95	5,289.77	Mobutu	Dictatorship
1985	816.14	-2.09	6,171.27	Mobutu	Dictatorship
1986	832.28	1.98	7,190.75	Mobutu	Dictatorship
1987	831.65	-0.08	8,749.84	Mobutu	Dictatorship

1988	812.00	-2.36	8,553.69	Mobutu	Dictatorship
1989	777.26	-4.28	9,243.64	Mobutu	Dictatorship
1990	702.13	-9.67	10,250.73	Mobutu	Dictatorship
1991	619.80	-11.73	10,831.93	Mobutu	Dictatorship
1992	533.53	-13.92	10,995.02	Mobutu	Dictatorship
1993	444.05	-16.77	11,263.66	Mobutu	Dictatorship
1994	411.49	-7.33	12,311.69	Mobutu	Dictatorship
1995	401.19	-2.50	13,229.23	Mobutu	Dictatorship
1996	386.11	-3.76	12,819.90	Mobutu	Dictatorship
1997	355.53	-7.92	12,326.99	Mobutu	Dictatorship
1998	341.78	-3.87	13,192.16	Kabila (L-D)	Dictatorship
1999	319.56	-6.50	12,155.73	Kabila (L-D)	Dictatorship
2000	289.99	-9.26	11,804.40	Kabila (L-D)	Dictatorship
2001	276.14	-4.77	11,612.18	Kabila (J)	Dictatorship
2002	276.06	-0.03	10,051.61	Kabila (J)	Dictatorship
2003	282.65	2.39	11,433.51	Kabila (J)	Dictatorship
2004	292.35	3.43	11,524.22	Kabila (J)	Dictatorship
2005	300.56	2.81	10,683.99	Kabila (J)	Dictatorship
2006	306.53	1.98	11,326.30	Kabila (J)	Elected
2007	315.26	2.85	12,459.47	Kabila (J)	Elected
2008	324.04	2.78	12,296.41	Kabila (J)	Elected
2009	322.42	-0.50	13,093.04	Kabila (J)	Elected
2010	334.02	3.60	6,136.64	Kabila (J)	Elected
2011	345.27	3.37	5,473.72	Kabila (J)	Elected
2012	357.60	3.57	5,615.75	Kabila (J)	Elected
2013	375.22	4.93	6,132.47	Kabila (J)	Elected
2014	397.34	5.90	5,481.89	Kabila (J)	Elected
2015	411.02	3.44	5,327.95	Kabila (J)	Elected
2016	407.29	-0.91	5,021.57	Kabila (J)	Elected
2017	408.92	0.40	5,083.90	Kabila (J)	Elected
2018	418.99	2.46	4,955.69	Kabila (J)	Elected
2019	423.64	1.11	5,437.55	Tshisekedi (F)	Elected
2020					