

International Import-Export Trade in the Democratic Republic of the Congo: Impact in Trade Balance

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Abstract

this study focuses on analyzing statistics data from import-export the Democratic Republic of the Congo in the participation of international trade. It emerges after the analysis of the data that the DRC trade balance remained negative for the years studied, for reasons of the non-transformation of exported products by modernized and developed tools. DRC exports are not very diversified in sectoral terms and the dependence of the economy on imports of basic necessities. It seems obvious to us, that international trade must be organized according to the techniques chosen for structuring the production apparatus, the consumption model of the production apparatus, and the consumption model compatible with development policy. The commercial policy of the country involves a large number of state agencies, the Ministry of Commerce, Ministry of Finance and Finally, the Central Bank, the latter do not play a key role in the commercial policy of DRC, which is at the base deficit causing the rupture of the stability of the exchange rate and the depreciation of the national currency. Here is what justifies the interest that we give to this sector which seems to be abandoned while it can reinforce the industrialization and the development of the country.

Keywords: trade balance, International trade, import-export, balance.

1. Introduction

The importance of international trade in global economic activity is a given. And this is because not only does the history of economic facts indicate how much development has been based on international trade, but also throughout history, international relations have been able to be decisive in economic relations. , social and human from certain countries [Salin, 2014]. The international economy concerns the flow of goods, services and factors of production across the national borders of countries. It deals with the movement of goods, services and factors of production from both a theoretical and an empirical point of view [KIAYIMA K 2017]. In theory, the commercial policy of the DRC is in conformity with its obligations towards the W.T.O The Government is revisiting it in order to stimulate exports while respecting the commitments made at regional and multilateral levels [RDC_EDIC, 2010]. Indeed, the establishment of regional economic spaces reduces the number of negotiators at meetings of the World Trade Organization, which can facilitate agreements. By allowing the development of economies in a protected framework, regionalism can be a step prior to multilateralism, allowing certain countries to take insurance [KIAYIMA 2017]. For this study, we are analyzing the importation and exportation statistics of the Democratic Republic of the Congo in order to make a scientific judgment regarding the trade that our country and the rest of the world carry out, and this in the context of international trade. Our concern is summed up in the following questions:

- How is the result of the DRC trade balance displayed? Is it balanced, deficit, or surplus?
- What is the evolution of the trade balance of the Democratic Republic of Congo?

By way of provisional answers to the questions posed to the problem, we believe that the Democratic Republic of the Congo has difficulties in participating normally in international trade. Specifically, we think:

- We expect the trade balance to be in deficit regardless of the period considered.
- That the evolution of the trade balance would be upward or positive.

2. Literature Review

International trade studies the causes and consequences of goods exchange, services and factors of production across borders [KIAYIMA 2018]. The unit of analysis is, therefore, the country or the nation [MELO J 2000]. International trade is the exchange of goods, services and capital between countries. This type of trade has existed for centuries but it is experiencing a new boom due to economic globalization. International trade theory is the branch of economics that studies and models international trade. In addition, there is a "law of international trade operations" formalized in particular by the Incoterms of the International Chamber of Commerce. The international economy concerns the flow of goods, services and factors of production across the national borders of countries [Daniel B, 2007], it deals with the movement of goods, services and factors of production from both a theoretical and an empirical point of view. The development of means of transport for people and goods led world trade to grow faster than the Gross Domestic Product (GDP) from the 19th century [FATMA 2017]. The volume of exports relates to the real Gross Domestic Product peaked in 1913, before falling back between the two world wars [Ghislaine, 2010]. Since 1950 world trade has started to grow faster than GD: between 1950 and 2010, the volume of world exports increased by 33 when real global GDP increased by a factor of 8.6. The banking and financial crisis of autumn 2008 led to a sharp drop in exports in 2009, by more than 12% in volume, but this was canceled out by a rebound of equivalent magnitude the following year. From the financial crisis in 2008, international trade has been the subject of several hazards, affecting performance in terms of trade and questioning the benefits of globalization [FATMA, 2017]. The performance of international trade is indeed deteriorating from 2014, after a period of post-crisis recovery [FATMA, 2017]. The volume of international trade continued to grow modestly and was limited to 1.3% in 2016 against 6.4% before the crisis (2007) and -12.6% in 2009. The forecasts of the World Organization Trade for the years 2017 and 2018 are more optimistic. International trade has shown signs of improvement since the start of 2017 [WTO 2019]. The main trading partners of the Democratic Republic of the Congo are the European Union, mainly Belgium and France, followed by China, South Africa and the United States. This clearly shows the "too narrow" aspect of the Democratic Republic of Congo's export network, which remains concentrated on a few entities, most of which are the European Union [Enyimo, 2008]. The development of Congolese exports differs from those of most less advanced countries in that they are more diversified both in terms of raw materials and semi-finished products [Marcel K, 2016]. This advantage shields the Democratic Republic of the Congo from sudden variations in revenue specific to a single product [Bakumanya, 2008, pp. 26-27].

The Democratic Republic of the Congo is participating in liberalization efforts within several regional economic organizations to which it belongs, such as The Economic Community of Central African States (ECCAS), the Common Market for Eastern and Southern Africa (COMESA) and the Southern African Development Community (SADC). DR Congo is also one of the countries benefiting from preferential trade tariffs with the United States within the framework of the African Growth and Opportunity (AGOA), and with the European Union within the framework of the initiative all but the weapons [Daniel B, 2007].

In theory, the trade policy of the Democratic Republic of the Congo is consistent with its obligations to the world trade organization. The Government is revisiting it in order to stimulate exports while respecting the commitments made at the regional and multilateral levels [CIR 2010].

All these different reforms, the Democratic Republic of Congo intends to regain its place in the multilateral trading system by leveraging the countless assets available to the country in terms of natural resources, market potential based on a population of more than 80 to 85 million inhabitants [UNFPA, 2013-2017] and a privileged geographic location in the heart of the African continent halfway between central, eastern and southern Africa.

The economy of the Democratic Republic of Congo is dependent on the outside world for its exports of basic products, dependent on the international community for imports of the major means of production, including those of raw materials.

3. Methodology and data.

3.1.Methodology

For our study we used the following methods: The comparative method allowed us to establish statistics between the different data collected in order to be exploited and to better comment on exports and imports from the DRC, The deductive method, on the other hand, allowed us to analyze the evolution of foreign trade in the Democratic Republic of the Congo and on its contribution in the gross domestic product. We used the documentary technique, which allowed us to review some documents related to our subject of study, these include the annual reports of the Central Bank of Congo and some books. It was assisted by the statistical technique which allowed us to analyze our data and interpret the results.

Finally, the index analysis: we decided to transform the collected data into indices and rates of successive variations; this is for easy interpretation. Indeed, we prefer to process this data in the form of an index in order to have a more or less exact idea of reality and their evolution over time, starting from the formulas below:

$$\text{Index} = \frac{w_i}{w_o} \times 100$$

w_i = value of the year compared to the base year
 w_o = value of the base year

$$\text{Variation} = \frac{w_i - w_o}{w_o}$$

w_i = value of the arrival year
 w_o = value of the starting year

Simple Regression

The general trend is defined as a long-term movement in a time series. It also consists in determining the general trend of performance achieved using the simple regression method by the criterion of Ordinary least square to which we have:

$$\hat{y} = \hat{a} - \hat{b}x$$

\hat{a} And \hat{b} are parameters to be estimated.

$$\hat{b} = \frac{\sum(x - \bar{x})(y - \bar{y})}{\sum(x - \bar{x})^2} \quad \text{and} \quad \hat{a} = \bar{y} - \hat{b}\bar{x}; \quad \bar{y} \text{ mean of } y \text{ and } \bar{x} \text{ means of } x$$

\hat{Y} Equation of the line for adjusting imports, exports and the balance (payment or trade) and X represents the time variable.

3.2.Data Presentation.

We analyze data relating to export and import statistics for the Democratic Republic of Congo for a period of five years: that is to say the period from 2013 to 2017, figures from the Central Bank of Congo.

Table. 1. EXPORT STRUCTURE (in millions of USD)

	2013	2014	2015	2016	2017
Mining Products And Hydrocarbons	11261.4	11766.4	10083.8	8736.2	11468.4
Copper	7938.4	7531	5762	4 982.9	6 272.6
Cobalt	1963.7	2302.2	2484.6	1807.2	3368.8
Zinc	23	26.8	24.7	27.7	22
Gold	184.6	816.2	1072.3	1219.5	1086
Diamond	207.3	228.3	254.2	246.8	207.4
Crude Oil	866.8	770.4	403	332.3	383.2

Other	77.6	91.5	83	119.9	127.6
Agricultural Products	234.9	547.5	196.7	500.5	74.3
Coffee	51.1	246.2	31	41.8	27
Caoutchou	87.9	238.2	0.5	0	0.4
Wood	85.4	45.6	102.6	401.1	32
Cocoa	7.3	17.4	43.7	44.8	11.1
Other	3.2	0.1	19	12.8	3.8
Industrial And Energy Products	116.6	7.3	4.3	16	5.5
Cement	7.4	4.9	0.3	0	0
Chemical Products	0	0	0	0	0
Electricity	6.6	2.4	4	4.3	4.2
Other	102.6	0	0	11.7	1.3
Adjustment	0	0	0	2632.9	0
Total	11613	12321.2	10284.8	11885.5	11542.2

Source: Central Bank of Congo report 2017

Average annual exchange rate: 2013=919,67 CDF/USD ; 2014 = 925,23 CDF / USD

Average annual exchange rate: 2015 = 925,99 CDF / USD ; 2016= 1565 CDF / USD ; 2017= 1648 CDF / USD

Table above shows the different products exported by the Democratic Republic of the Congo during the years 2013 to 2017 in millions of US dollars. These are mining and hydrocarbon products, which were 11,261.4 in 2013; 11,766.4 in 2014; 10,083.8 in 2015 and 8,736.2 in 2016 and 11,468.4 in 2017.

From these figures we find that there is a stability of exports during the first two years 2013 and 2014 years compared to 2015 and 2016 there is a decrease in exports, during this period The national currency has depreciated gradually until losing 78% of its value on July 31, 2017 (1,648 CDF / USD) compared to its value on January 30, 2015 (925 CDF / USD) [FEC 2017], this loss in value of the CDF was accompanied by 'rising inflation, and we noted an increase in 2017, this increase is justified by the increase in the price of miners on the international level [BCC, 2017].

For agricultural products, we note that there were 234.9 in 2013; an increase in the export of agricultural products in 2014 of 547.4 and a decrease in exports of 196.7 in 2015; an increase in 2016 of 500.5 and a fall in exports in 2017 of 74.3.

As for industrial and energy products, it was 116.6 in 2013; 7.3 in 2014; 4.3 in 2015; 16 in 2016 and 5 in 2017. Looking at the statistics for industrial and energy products, there is a decrease in exports from 2013 to 2017.

Table 2. Structure of imports (in millions of USD.)

Products	2013	2014	2015	2016	2017
Consumer goods	2452.9	3758.8	2811.9	4050.6	3144.1
food and drink	1588.2	2407	1794.2	1621.5	1725.3
Tobacco, textiles and clothing	864.7	1351.8	1017.7	2429.1	1418.8
energy	1896.3	1081.1	632	56.5	62.2
chemicals and dyes	405.9	221.6	116.9	49.5	57.9
other instruments and devices	1490.4	859.5	515.1	7	4.4
raw materials and semi-finished products	582	411.3	305.8	3998.4	2898.5
Leather, rubber and rubber articles	303.8	216	162.3	1619	823.4
Chemical products, dyes and others	163.2	113.7	84.3	759.9	881.4
construction and metal materials	115	81.6	59.1	1619.5	1119
capital goods	5877.2	7455.1	6824.9	4043.3	5235.2
fixed and rolling goods intended for agriculture	1766.4	2477.9	2664.2	809.4	357
transport equipment	147.7	184.6	186.2	1619.4	1119
machines for specialized industries	1061.5	1670.9	1260.3	811.7	3261.3
other instruments and devices	2901.6	3121.7	2714.2	802.7	497.8
Total	10808.4	12706.3	10574.6	12148.8	11340

Source: Central Bank of Congo report 2017

Table 2 illustrates the imports from the Democratic Republic of the Congo. A total of 10,808.4 imports was released in US dollars in 2013; 12,706.3 in US dollars in 2014; 10,574.6 in US dollars in 2015; 12,148.8 in 2016 and finally 11,340 in US dollars in 2017. The statistics in this table of imports point out to us that there was an increase in imports in 2014 compared to the previous year and a decrease in the following year 2015 and an increase in 2016 and finally a decrease in imports in 2017.

Table 3. Trade balance

Year	EXPORTS	IMPORTS	BALANCE
2013	11613	10808.4	804.6
2014	12321.2	12706.3	-385.1
2015	10284.8	10574.6	-289.8
2016	11885.5	12148.8	-263.3
2017	11542.2	11340	202.2

Source: the authors

This table summarizes globally the exports and imports of all the products traded by the Democratic Republic of Congo. Indeed, in 2013 the trade balance was positive 804.6 in American dollars, which means that the DRC has a lot of exports compared to these imports; in 2014 the trade balance was negative -385.1 in US dollars. This means that exports have been lower than imports; in 2015 the trade balance was negative -289.8 in US dollars. This means that exports have been lower than imports; in 2016 the trade balance was negative -263.3 in US dollars. This means that exports have been lower than imports and in 2017 the Trade balance is positive 202.2 in dollars which implies that the DRC has a lot of exports compared to these imports.

4. Results Analysis.

Index analysis: we decided to transform the collected data into indices and rates of successive variations, this is for easy interpretation. Indeed, economists have always preferred to process the figures in the form of an index in order to have a more or less exact idea of reality and their development over time, starting from the following formulas:

$$\text{Index} = \frac{w_i}{w_o} \times 100$$

w_i = value of the year compared to the base year,

w_o = value of the base year

$$\text{Variation} = \frac{w_i - w_o}{w_o}$$

w_i = value of the arrival year

w_o = value of the starting year

Table 4. Evolution of imports and exports in US dollars (in a million)

Year	EXPORTS	$\frac{w_i}{w_o} \times 100$	$\frac{w_i - w_o}{w_o}$	IMPORTS	$\frac{w_i}{w_o} \times 100$	$\frac{w_i - w_o}{w_o}$
2013	11.6	100.00		10.8	100	
2014	12.3	106.03	6.03	12.7	117.59	17.59
2015	10.2	82.93	-17.07	10.5	82.68	-17.32
2016	11.8	115.69	15.68	12.1	115.24	15.23
2017	11.5	97.46	-2.54	11.3	93.39	-6.61
TOTAL	57.4	502.11	2.1	57.4	508.90	8.89

Source: the authors

This table shows the evolution of an index and the overall variation of exports and imports. The calculation of the index allowed us to see the evolution of exports and imports compared to the base year 2013 and the successive rates of change between the years 2013 to 2017.

We note that exports knew an increase during the first two years, unlike 2015, where there is a strong decrease, with a variation of -17.07% and knew a strong increase in 2016 with a variation of 15.68% and finally decreases in 2017. The indices observed are in particular, 100% in 2013, 106.03% in 2014, 115.69% in 2016 and 97.46% in 2017 compared to the base year. For all five years considered, the overall export index is 502.11%. For imports compared to the base year, we find that in 2014, imports varied by 117.59%; the amount to decrease by 82.68% in 2015, for the year 2016, there was a 115.24% increase compared to the year 2017 where there was a sharp decrease of 93.39%. Regarding the successive variation of these data, it appears that during 2014, imports from the DRC experienced an increase of 17.59% compared to 2013, the amount of imports in 2015 shows a decrease of -17.32% compared to the year 2014. In 2016 the number of imports increased by around 15.23% compared to the year 2015. In the end, the number of imports fell in 2017 by around -6.61% compared to 2016.

Table 5. Evolution of trade balance in US dollars

Year	Balance	$\frac{w_i}{w_o} \times 100$	$\frac{w_i - w_o}{w_o}$
2013	804.6	100.00	
2014	-385.1	-47.86	-147.862
2015	-289.8	75.25	-24.7468
2016	-263.3	90.86	-9.14424
2017	202.2	-76.79	-176.795
Total	68.6	141.45	-358.548

Source: the authors

In the fifth table above, we read the evolution of the balance of the trade balance in the index and in successive variation between the years 2013 to 2017. Compared to the base year, in general, the balances of the balance sales experienced a decrease in 2014, i.e., -47.86%; and an increase in 2015 and 2016, i.e., 75.25% in 2015 and 90.86% in 2016; and we see a decrease in 2017 of -76.79%. In a successive variation of the data of the balances of the trade balance of the Democratic Republic of the Congo, we observe that during the year 2013 until 2017, the amount of balance shows a decrease.

Table 6. General export trend

Year	x	y	$(x - \bar{x})$	$(y - \bar{y})$	$(x - \bar{x})(y - \bar{y})$	$(x - \bar{x})^2$	$Y = \hat{a} + \hat{b}x$
2013	1	100.00	-2	-0.42	0.844	4	99.048
2014	2	106.03	-1	5.61	-5.608	1	99.964
2015	3	82.93	0	-17.49	0	0	100.422
2016	4	115.69	1	15.27	15.268	1	100.88
2017	5	97.46	2	-2.96	-5.924	4	101.338
TOTAL	15	502.11			4.58	10	
AVERAGE	3	100.42					

Source: the authors

$$\bar{y} = \frac{502,11}{5} = 100,42; \quad \bar{x} = \frac{15}{5} = 3; \quad \hat{b} = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sum(x-\bar{x})^2} \Rightarrow \hat{b} = \frac{4,58}{10} = 0,458;$$

$$\hat{a} = \bar{y} - \hat{b}\bar{x} \Rightarrow \hat{a} = 100,42 - 0,458 \times 3 = 99,04$$

Having found the value of $\hat{a} = 99.04$ and $\hat{b} = 0.458$; the equation of the adjustment line will be given by $\hat{Y} = 99.04 + 0.458X$, or \hat{Y} represents the equation of the export line and X time.

Thus, the equation $\hat{Y} = 99.04 + 0.458X$ shows us that exports from the Democratic Republic of Congo experience an annual increase of around 0.458% with a constant of 99.04. This reflects a general upward trend in exports.

Table 7. General import trend

Year	x	y	$(x - \bar{x})$	$(y - \bar{y})$	$(x - \bar{x})(y - \bar{y})$	$(x - \bar{x})^2$	$Y = \hat{a} + \hat{b}x$
2013	1	100	-2	-1.78	3.56	4	104.894
2014	2	117.59	-1	15.81	-15.81	1	103.337
2015	3	82.68	0	-19.1	0	0	101.78
2016	4	115.24	1	13.46	13.46	1	100.223
2017	5	93.39	2	-8.39	-16.78	4	98.666
TOTAL	15	508.9			-15.57	10	508.9
AVERAGE	3	101.78					

Source: the authors

$$\bar{y} = \frac{508,9}{5} = 101,78; \quad \bar{x} = \frac{15}{5} = 3; \quad \hat{b} = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sum(x-\bar{x})^2} \Rightarrow \hat{b} = \frac{-15,57}{10} = -1,557;$$

$$\hat{a} = \bar{y} - \hat{b}\bar{x} \Rightarrow \hat{a} = -1,557 \times 3 - 101,78 = 106,45$$

Having found the value of $\hat{a} = 106.45$ and $\hat{b} = -1.557$ the equation of the adjustment line will be given by $\hat{Y} = -1.557X + 106.45$ or \hat{Y} represents the adjustment line of imports and X time. Thus, the equation $\hat{Y} = -1.557X + 106.45$ shows us that imports from the Democratic Republic of Congo experience an annual decrease of around -1.557% with a constant of 106.45. Something that shows a general downward trend in imports.

Table 8. General trend in the trade balance

Year	x	y	(x - \bar{x})	(y - \bar{y})	(x - \bar{x}) (y - \bar{y})	(x - \bar{x}) ²	$Y = \hat{a} + \hat{b}x$
2013	1	100	-2	71.708	-143.416	4	71.264
2014	2	-47.86	-1	-76.152	76.152	1	49.778
2015	3	75.25	0	46.958	0	0	28.292
2016	4	90.86	1	62.568	62.568	1	6.806
2017	5	-76.79	2	-105.082	-210.164	4	-14.68
TOTAL	15	141.46			-214.86	10	141.46
AVERAGE	3	28.292					

Source: the authors

$$\bar{y} = \frac{141.46}{5} = 28.292; \quad \bar{x} = \frac{15}{5} = 3; \quad \hat{b} = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sum(x-\bar{x})^2} \Rightarrow \hat{b} = \frac{-210}{10} = -21.486;$$

$$\hat{a} = \bar{y} - \hat{b}\bar{x} \Rightarrow \hat{a} = -21.486 \times 3 - 28.292 = 92.75$$

Having found the value of $\hat{a} = 92.75$ and $\hat{b} = -21.486$; the equation of the adjustment line will be given by $\hat{Y} = -21.486X + 92.75$ or \hat{Y} represents the adjustment line for the trade balance of the Democratic Republic of Congo. Thus, the equation $\hat{Y} = -21.486X + 92.75$ shows us that the balance of the trade balance of the Democratic Republic of Congo experienced an annual decrease of around 21.486% with a constant of 92.75.

Conclusion.

Through this study, we asked ourselves the question of knowing if the Democratic Republic of Congo carries out the international exchanges and how is presented the trade balance of the DRC.

Specifically, we have raised the following questions: Is the trade balance balanced? What is the evolution of the trade balance of the Democratic Republic of Congo? By way of provisional answers to the questions asked, we estimated: That despite the economic difficulties that the DRC is experiencing in terms of financial revenue,

That the trade balance of the DRC is in deficit, whatever the period considered, that the evolution of the trade balance would be on the rise. After analyzing the data, we found that DRC actually makes international trade and that the trade balance is positive for the years 2013 and 2017.

The equation of the export adjustment line is given by $\hat{Y} = 99.04 + 0.458X$, this equation shows us that exports from the Democratic Republic of the Congo experienced an annual increase of around 0.45 % with a constant of 99.04. This state of affairs reflects a general upward trend in exports. The equation of the import adjustment line is given by $\hat{Y} = -1.557X + 106.45$, this equation shows us that imports from the Democratic Republic of Congo experienced an annual decrease of around -1.557% with a constant of 106.45. This reflects a general downward trend in imports. The equation of the general trend $\hat{Y} = -21.486X + 92.75$ clearly shows that the balance of the trade balance of the Democratic Republic of Congo experienced an annual decrease of around -21.48%, with a constant from 92.75.

Thus, there is a general downward trend in the balance of trade of the Democratic Republic of the Congo. We suggest to the DRC government to organize its import-export policy to encourage private investments in order to increase internal production to increase exports, to organize the institutions in charge of statistics to have the data. reliable, organize and strengthen the customs services to avoid fraud in order to have the exact statistics of the country in terms of import and export, rigorously monitor the export of mining products and the import of various products through every corner of the DRC.

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