Dutch Disease Nexus and Industrial Diversification: Evidence from Angola

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ABSTRACT

The main objective of this study was to analyze the evolution of the main indicators of the Angolan economy between 2019 and 2023, which, in light of the literature on Dutch disease, can explain the situation of the level of industrial diversification in the period in question. Thus, a two-stage analysis was carried out: the first referred to the search for convergence between the behavior patterns of the curves of the volume of oil exports and the curve of exchange rate variation in the medium and long term; the second referred to the analysis of the trajectories of the curves of oil exports and the volume of production related to the manufacturing industry in the period between 2019-2023. Thus, the main results demonstrate, on the one hand, that both the volume of oil exports and the variation of the exchange rate had a convergent trajectory, both in the medium and long term and, on the other hand, that in the medium term (2019-2023), the volume of exports of the oil industry had an evolution dynamic inferring from that observed in the volume of the manufacturing industry. Finally, the conclusions drawn for the period analyzed support the premise that a preferential focus on exports originating from the extractive industry, combined with the observance of exchange rates that tend to appreciate, did not lead to direct deindustrialization to the detriment of the emergence of other industrial sectors besides oil, namely manufacturing.

1. INTRODUCTION

The need in economies undergoing a transition phase to shift from planning models based on market dynamics to diversifying their sources of wealth generation is a crucial condition in developing countries. In this sense, these countries are struggling with a central problem: on the one hand, the existence of an industrial sector that generally extracts natural resources and is overseen by the state, as a consequence of investments being channeled, preferentially, into this sector, resulting in the prevalence of a residual manufacturing industry sector.

According to Sanches-António (2024), developing countries need to diversify their sources of income on the one hand and increase the competitiveness levels of their economies on the other, with industrial diversification constituting one way to respond to such goals.

Angola, a potentially rich country with immense natural resources with a high degree of transactions on the international raw materials market, has as its main source of income for obtaining foreign currency the export of these same resources, namely those of an energy and mineral nature.

Still, according to Sanches-António (2024), there are several studies in which authors address the relationship between natural resources and the prosperity of nations, highlighting their counter-cyclical effect on economic growth and development.

Thus, the issue surrounding Dutch disease, also in the context of the use of abundant tradable raw material resources and their effect on the dynamics of other industrial segments, has given rise to debate in the academic world and the production of specific studies on the possibilities of deindustrialization in countries where it occurs, with the consequences to be addressed below when reviewing the literature. It is therefore important to highlight that this phenomenon, which occurs particularly prominently in

situations where there is disinvestment in industrial sectors other than manufacturing in Angola, is embodied in residual investment in industrial sectors other than oil.

According to Liboreiro (2024), although the economic dysfunction known as Dutch disease is usually associated with the economy being open and in transition, in which an expanding extractive sector goes hand in hand with industrial production delay (copper in Chile and Zambia, oil and gas in Russia and countries in the Middle East), this can also be seen in some of the most developed economies in the world (iron and gold in Australia, natural gas in the Netherlands, oil in the United Kingdom and Norway).

In a scenario in which the Angolan State seeks to maximize added value through policies that lead to the integrated development of the various sectors of its production of tradable goods, that is, with proven added value, the identification and description of the main causes underlying a probable bottleneck in the process of industrial diversification, as a way of minimizing the risk of excessive exposure to the volatility of raw material prices on the international market, the use of the industrial capacity already installed, as well as the expected gains in productive efficiency, is a central task for economic policymakers.

2. LITERATURE REVIEW

The theme of the characterization and typologies of Dutch disease dates back to the 1960s, when the discovery of large natural gas deposits had disruptive impacts on the domestic economy: on the one hand, causing an increase in income resulting from exports, and on the other, the appreciation of the local currency, due to the inflow of foreign currency from sales of the energy commodity, making exports of other products less competitive (Nakahodo & Jank, 2006).

The phenomenon presents counter-cyclical characteristics to economic growth, resulting from the gravitational effect that almost exclusive investment in enclave sectors causes on the rest of the industrial activity sector.

Thus, according to Bresser-Pereira (2007), per capita growth rates are lower than those observed in developed countries, they find Dutch disease one of the main causes of this lower result, embodied in the persistent appreciation of the exchange rate caused by the abundance of internationally tradable natural resources and/or human resources guaranteed at low acquisition or remuneration costs in contrast to an exchange rate lower than that which would make the emergence and maintenance of other industries of exportable goods viable.

It is therefore clear that the central analysis in the approach to Dutch disease focuses on the appreciation of the local currency in a given economic system which, as a result of the inflow of foreign currency, resulting from the increase in exports of raw materials, produces a potentially adverse impact on the finished products industry, particularly manufacturing.

This situation is also reinforced by Bresser-Pereira (2007), highlighting that in addition to overvaluing the currency of countries that export their abundant raw materials, Dutch disease also causes low growth rates in the manufacturing industry, artificially high real wages and an increase in long-term unemployment, partly related to the poor skills of the local workforce.

Uncertainty regarding the future return on investments made in primary industry, arising from fluctuations in the prices of exported raw materials in the destination markets, increases risks to the necessary chain of different phases of economic growth, stimulating its expansion.

According to Frankel (2012), Dutch disease refers to some undesirable side effects, probably originating from a steep rise in the price of oil or other mineral and agricultural commodities. The phenomenon arises when there is a strong appreciation of the currency (in the form of nominal appreciation of the currency, if the country has a floating exchange rate or in the form of money inflows and inflation if the country has a fixed exchange rate), creating conditions for the following situations to occur:

•An increase in spending (especially by government) in response to increased availability of tax or royalty revenues;

• An increase in the price of non-tradable goods (goods and services, such as housing), which are not internationally traded, relative to internationally traded goods;

• Sometimes a current account deficit (despite increased revenues from commodity exports), thus incurring external debt, making debt service difficult when the commodity price boom ends.

However, some countries possess considerable reserves of mineral resources and have managed to overcome the harmful effects of this economic dysfunction.

In this sense and according to Barbi & Silva (2008), Norway has set a global example by successfully counteracting the effects of Dutch disease during the period of intensive exploitation of its oil and gas reserves by adopting the following measures:

• It paid off its external debt so that its vulnerability on the international scene was reduced;

• Created a sovereign fund abroad: the capital of this fund would be used as a counter-cyclical policy, as in periods of falling oil prices the government would use it to promote investment in the economy;

dissemination policy, so that gains could be channeled to other sectors of activity, stimulating the dynamism of the economy;

• Prioritized the development of local knowledge, with the creation of research centers and the training of highly qualified human capital;

• Channeled part of the resources from exports to excellent education, covering teaching, research, and development.

From the above, it can be concluded that the industrial policy adopted by countries holding abundant tradable mineral resources should emphasize technical progress and the generation of knowledge, which promotes the maintenance of a diversified export agenda, to spread the effects of the gains resulting from their commercialization to the rest of the economy.

3. METHODOLOGY AND RESULTS

Based on records contained in publications by institutions such as IMF (2023), WBG (2023), and INE (2023), an analysis was carried out on the behavior of the curves of three variables of interest within the scope of the study, namely: the volume of oil exports, which is the main Angolan export commodity, the evolution of the exchange rate and the industrial production index, with the analysis covering the period between 2019 and 2023. Identifying and choosing the economic indicators used followed the theoretical assumptions about the Dutch disease, its causes, and consequences on economies that tend to generate most of their wealth through the export of commodities, whether of mineral or agricultural origin.

In this sense, the analysis was carried out in two stages: the first referring to the search for convergence in the behavior patterns of the curves of the volume of oil exports and the exchange rate variation in the medium and long term; the second referring to the analysis of the trajectories of the curves of oil exports and the index of production of the manufacturing industry in the period between 2019-2023.

The extractive sector, more specifically the oil sector, is the main source of revenue for the general budget of the Angolan state, and also constitutes the largest source of tax revenue, since a time that dates back practically to national independence, shows in the period between 1980 and 2022 a trajectory in terms of the volume of exports that, despite the fluctuations, partly resulting from the volatility of its prices in the destination market, which tends to be increasing, as shown in figure 1, which indicates the predominance of the sector over other industrial sectors, in addition to oil.
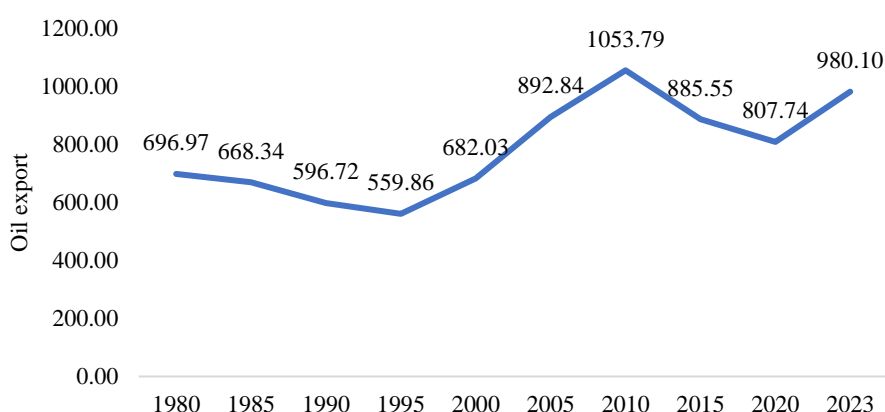

Figure 1: Change in the volume of oil exports (1980-2023)
Source: Own from IMF (2023)

Directing the analysis to the reference period for the present study (2019-2023), in Figure 2 it can be seen that from the curve that characterizes the variation in the volume of oil exports, except for the period between January and May 2020, it presents a tendency towards constant behavior, taking into account the average value in the period, which also validates the discussion carried out for the results presented in figure 1, that is, despite being constant, its trajectory remains at the highest values considering its trajectory since 1980.
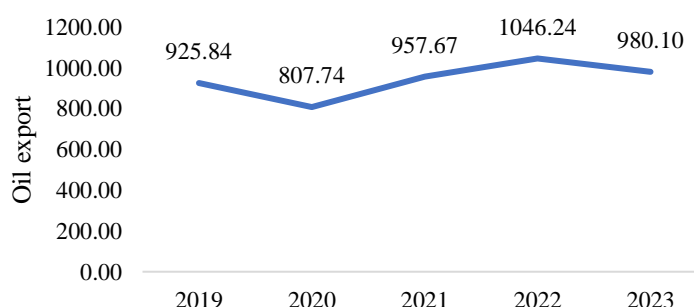

Figure 2: Change in the volume of oil exports (2019-2023)
Source: Own from IMF (2023)

From the constant curve in Figure 3 it is possible to observe, in the same period (1980-2023), the alignment between the variations in the curves of the volume of oil exports and the evolution of the exchange rate of the Kwanza against the USD, that is, with a record of growth from the year 2000 onwards and a slight slowdown from the year 2022 onwards, although in line with the average for the period (2019-2022), which in light of the assumptions characterizing the Dutch disease indicates its prevalence in the Angolan economy.
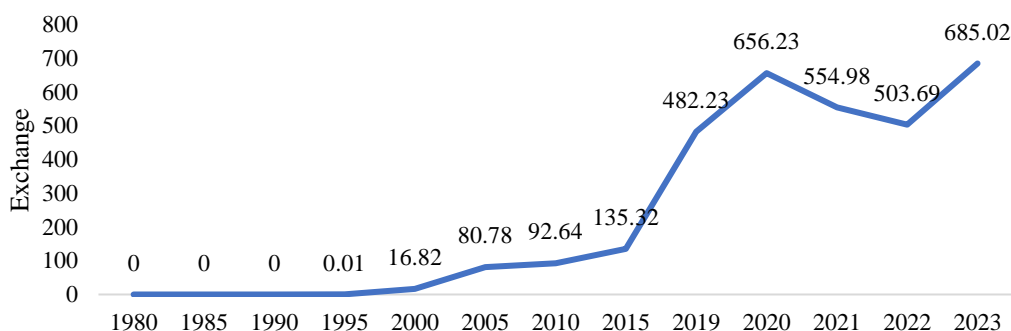

Figure 3: Evolution of the exchange rate in local currency against the USD (1980-2023)
Source: WBG (2023)

To understand the trend in the evolution of the exchange rate, in the period (2019-2023), the corresponding curve is presented in Figure 4. From the configuration of the behavior of this curve, described in general in Figure 3, it is possible to verify that from 2022 onwards, it presents an increasing trend, which can reinforce the reading made when discussing the results in Figure 3, that is, the alignment in the behavior of the curves referring to the volume of oil exports and the evolution of the exchange rate, since both grow and decrease practically simultaneously in their trajectories.
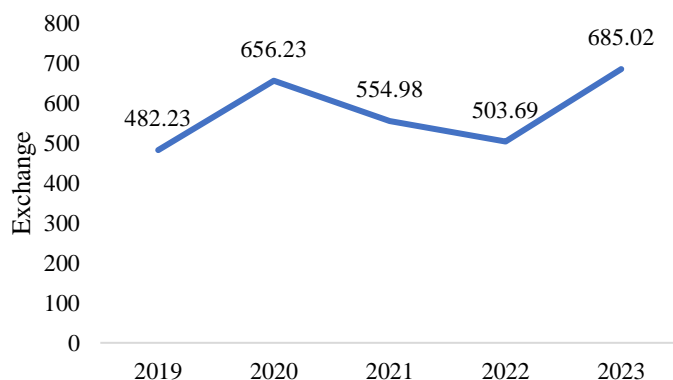

Figure 4: Evolution of the exchange rate in local currency against the USD (2019-2023)
Source: Own from WBG (2023)and I MF (2023)

The results shown in Figure 5 refer to the evolution of the oil industry and the manufacturing industry as a whole during the period covered by the study (2019-2023). These results run counter to those presented and discussed in the four previous figures and therefore do not validate an important assumption about the prevalence of Dutch disease in economies that rely mainly on the export of natural resources to obtain foreign currency, which is generally accompanied by a low industrial production rate, mainly in the industrial transformation sector. Thus, in Figure 5, it can be seen a greater and upward trend in the curve of the manufacturing industry production index, contrary to that of the oil industry, revealing in this sense an unexpected result, in light of what was said about the Dutch disease.

Such behaviors recorded in the curves under analysis indicate that contrary to the signs of prevalence of Dutch disease observed in the Angolan economy, identified from the combined analysis of the behavior curves of both the largest export commodity, oil, and the evolution of the exchange rate curve, in the periods between 2080-2023, in the period 2019-2023 an important consequence of Dutch disease, which is a greater performance in the extractive industry sector compared to other industry segments, was not observed, as shown in Figure 5.
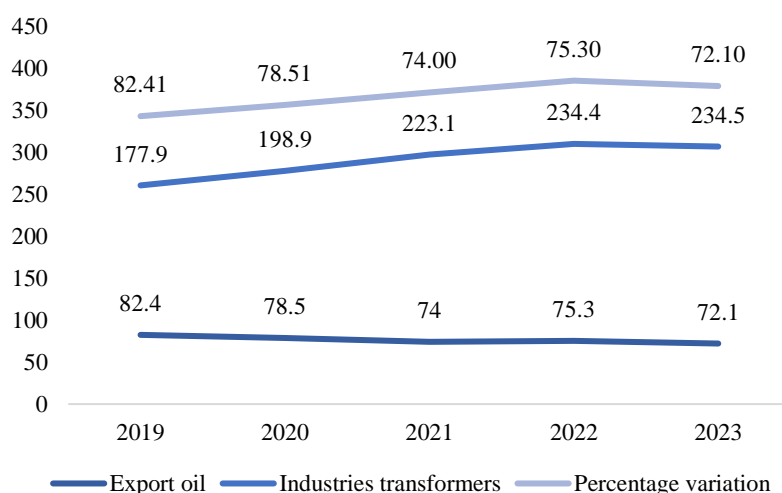
Figure 5: Industrial production index
Source: Own from INE (2023)

However, the analysis of the results in Figure 5 should be treated with caution, since the manufacturing industry production index presents a global view of this industry sector, which is made up of a set of other industries. Thus, the weight of the oil sector is still significant, estimated at around 1.5% $\frac{1}{3}$ of the manufacturing industry production index in each of the five years covered by the analysis.

4. CONCLUSIONS AND LINES OF RESEARCH

Based on the results obtained, it was possible to verify a convergence throughout the analyzed timeline, between the volume of oil exports and the appreciation of the exchange rate, which indicates the prevalence of Dutch disease in the Angolan economy, in the reference period.

The analysis carried out to explain the state of the relationship between the industrial diversification process in Angola between 2019 and 2023 provides evidence that supports the hypothesis that a preferential focus on extractive activities, combined with the observance of exchange rates that tend to appreciate, do not necessarily lead to direct deindustrialization to the detriment of the emergence of other sectors of the non-oil industry.

Because it does not depend on a single sector of economic activity for its implementation, industrial diversification represents, for economies that seek, through investments made outside enclave sectors, a strategy that can allow: reducing risks arising from the volatility of the prices of the commodities they export, exploring new opportunities for economic growth based on the diversification of their production base, the emergence of clusters that allow the sharing of technology, resources and knowledge between related sectors, as well as increasing levels of resilience to economic shocks, through the use of financial assets originating from the trading of commodities, periods of high prices.

The present study, as far as it was possible to determine through bibliographic and documentary analysis, is the first to address the issue related to the counter-cyclical effect of Dutch disease on the process of industrial diversification in Angola, and therefore contributes to the literature on industrial diversification in the country, based on evidence extracted from the dynamics of the behavior of indicators of its exchange rate and industrial performance in addition to oil. Therefore, being a pioneering study in this sense, some clues are left for continuity in future research.

Comparative analysis regarding the evolution of current exchange rates and the industrial exchange rate that makes the emergence of an industrial sector beyond oil viable in Angola, as a way of countering the gravitational effect that the oil sector exerts on attracting investment to other industrial segments.

The carrying out of econometric studies, which allow, through parametric modeling, it possible to consider other assumptions that may explain the record of industrial diversification and simultaneously the record of signs of Dutch disease in Angola, based on an analysis of state subsidy policies for the economy and probable effects on the external competitiveness of the non-oil industrial sector.

Studies aimed at obtaining a theoretical-empirical framework, which considers the identification of new relevant variables related to the effectiveness of planning actions, adequate resources, as well as the necessary management skills, so that industrial diversification strategies can be successful in Angola, also constitute future challenges for researchers interested in the topic addressed in this article.

Studies on the impact of fiscal policy (subsidies) and non-oil industry exports on the dynamics of sectors such as manufacturing in Angola

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