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TRADE POLICY AND PRODUCTIVITY GROWTH: WHY DO SUDANESE MANUFACTURING FIRMS EXPORT LESS

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Abstract: This paper aims to study the role of trade policy on industrial development and productivity growth. We analyze the relationship between trade policy and productivity growth of manufacturing firms in Sudan. For this work, we evaluate the previous trade policy instruments that implemented between 2000 and 2015. The study finds that Sudan trade policy has significant positive effects on manufacturing firms' productivity. The study reveals that manufacturing firms offer the largest scope for productivity gains through trade policies aiming at enhancing economic growth. The study also found there was a weak support for investment promotion and tariff protection. This study recommends that building a proper trade policy to support manufacturing firms to adapt new technologies and focusing on labor intensive industries is the key success to sustain productivity and exports.

Keywords: productivity growth, trade policy, manufacturing firms.

1. INTRODUCTION

Increasing the participation of manufacturing firms in trade is one of the main concerns globally. It is considered the most challenging policy-making face in developing countries particularly after adopting the conventional economic policies known as the Washington Consensus, which disappointed the countries that implement these policies. As a result, many developing countries including

Sudan tried to restructure its production capacities in away to explore sectors offer better prospects for economic growth.

This paper explores how trade policy tools affect the productivity growth in manufacturing firms in Sudan during the last two decades. We also evaluate a number of trade policy instruments and it is effective in sustaining productivity and stimulating economic growth.

Many theoretically and empirical studies on Sudan's economy did not count for productivity in manufacturing firms, including (Hag-Elamin N., 1997; Almosharaf and Deng-Tian, 2014). Yet, some of the empirical findings conclude that Sudanese agro-industries firm's lack of innovation capabilities and misallocation resources. For example, Elryah Y. and Hassan N. (2021) find that there is absence of linkages among manufacturing firms to knowledge and research and development (R&D) organizations and the volume of exports by manufacturing firms are relatively small to agricultural firms. This suggests that some manufacturing firms may have venerable to international markets and spillover effect.

Bernard and Jensen (1995) pointed out that the relationship between productivity growth and export performance should be based on two hypotheses when it comes to compare the productivity growth between exporters and non-exporters firms. The first hypothesis was Self-selection, where firms chose to export and engage in international markets (Bernard and Jensen, 1999). The second hypothesis was adopted by many firms, learning by exporting as a source of growth and enabling firms to become more productive (e.g. Van Biesebroeck, 2005).

We view the productivity of manufacturing firms as potentially support economic growth. We also illustrate that with available data productivity of manufacturing firms can be readily taken into account in the estimation. We assess the industrial policies in Sudan and its effectiveness on productivity growth for manufacturing firms to be able to engage in international trade. We focus in total exports of manufacturing firms after stagnant of manufacturing exports since 2012 started to grow in 2020s. The role of government is to facilitate and correct policy failure such as business environment; real exchange rate changes, poor infrastructure services, high transaction costs that face most of manufacturing firms particularly exports.

A large body of literature has sought to identify the main causes of declining of Sudanese economic growth trends, the impacts of the independence of South Sudan, agro-industries development, and economic sanctions on Sudanese macroeconomic performance (e.g. Elryah Y., & Hassan N., 2021; Siddig K., 2010;) promoting bilateral trade between Sudan and South Sudan (African Development Bank Group, 2016). The size of the manufacturing sector in Sudan is relatively

small and production is highly concentrated in a few sub-sectors, where there are 90% of all registered businesses are in the capital Khartoum. The Sudanese manufacturing sector can be classified as a low degree of linkages, very few manufacturing firms have entered foreign markets and most of the intermediates and raw materials are exporting from abroad.

In this study we use descriptive data to analyze data on manufacturing firms, its exports to show productivity growth, good and lack policies and institutions. We first show at firm level that manufacturing firms are export less relevant to their production growth. Then, drawing upon the sartorial level we can use regulations and government subsidies, growth, export ratios variables to identify the casual effect of trade policy on productivity. We interpret the results as evidence that the development status, economic relations with rest of the world may cause economic to decline. We also show that good institutions, firms' experience in international markets affect its productivity and growth.

A large body of literature has sought to identify that international trade could enhance countries' economic growth and productivity growth in long-run (Kim & Lin, 2009; Nübler, I. 2011. and Lucas, 1988). An important yet unexplored question lies at the intersection between these two literatures: why Sudanese manufacturing firms export less. Is it due to degree of the influence of trade policy? Is it due to the commodities that Sudan specializes in, which manufacturing firms tend to be a capital-intensive sector? Or is it some other challenges within manufacturing firms, particularly management or lower quality of products. This paper sets out to increase our understanding of productivity growth of Sudanese manufacturing firms by examining the effectiveness of trade policy in productivity and economic growth. This study seeks to answer the fundamental question why do Sudanese manufacturing firms export less? (1) What relationship do exports have on productivity growth? (2) What trade policy is needed to achieve economic growth? Based on these questions, this study contributes to the literature especially from Sudan's context.

This paper aims to make several contributions. First, whereas previous research has focused on agricultural exports and growth, we argue that researchers and policymakers should also consider the impacts of trade policy on manufacturing exports. There is a lack of literature in analyzing the effect of trade policy instruments in productivity. We focus on the link between productivity growth and trade policy. Second, this study contributes to literature by providing the first evidence on the role of Sudanese manufacturing firms and productivity growth in enhancing the economic growth. Third, we investigate why Sudanese manufacturing firms export less? And understand the impact of policy interventions on manufacturing firms' success and growth. Previous research has focused on explaining the progress of economic development (Siddig K., 2010

Ali A., 2004) protection and productivity growth (e.g., Amiti, M. and Konings J.G., 2007; Balassa, B. 1971; Bernard, A.B. et al., 2007), exporting agricultural commodities (Ebaidalla M. & Atif A., 2016) the impacts of elimination trade flows on Sudanese economy analysis of trade policies, external shocks, and economic bans (Siddig K., 2010). However, we argue that these studies are narrowly focused and limited; research on the impacts of trade policy on productivity growth and exports need to consider a more comprehensive aspect that helps manufacturing firms increase the exports volume and compete in international markets.

This paper adopts the view that in order for manufacturing firms to engage in international trade, it needs to engage in both explorative and exploitative learning in the means that, besides the frequently experimenting R&D functions, firms need to reduce variability, increase efficiency and control in their process management efforts through strengthening manufacturing capabilities. However, this view is not a position shared by many policymakers (Siddig K., 2010).

This paper attempts to investigate the impacts of trade policy on productivity growth and ability for manufacturing firms to export. This study is structured as follows. Section two presents a historical background on industrialization in Sudan. Section three discusses the related literature. The main finding is reported in section four. Section five draws conclusion and some implications.

2. INDUSTRIALIZATION IN SUDAN: A HISTORICAL BACKGROUND

The arise of industrial revolution in Western Europe in late nineteen century had created a new world features that divided the world nations into two parts, modern advanced (the first world) and traditional (the third world). Most of African countries including Sudan belong the third world, which found itself after get its political independence how to overcome this gap and thereby catching up the first world specially with a high demographic growth. Therefore, industrialization was only option of the third world to overcome economic development gap.

Sudan's industrial sector has witnessed substantial changes since independence in 1956, from import substitution industrialization, to oil industry boom and to de-industrialization. Most of the development efforts have brought industrial development among the policy priorities. For example, from 1960 Sudan started a series of strategic plans, where many industries were established such as vegetable oil, food processing. In the late 1970s, the trade policy turns toward producing Sugar. Oil industries started in late 1990s. In this section, first we show the performance of manufacturing sector for the last three decades. Then, we present key trade policy tools implemented by government. Finally, we show our understanding for these policies.

Since it is independence, Sudan has adopted different industrial policy, from import substitution industries in early 1960s, includes textiles, leather, food

processing, consumer products, cement, sugar and steel industries. These industries enhanced the contribution of industrial sector in the total GDP from 25 to 8%. As a result, Ministry of industry and minerals is established in 1966. In 1967 the government issued the second investment encouragement, where the first industrial comprehensive survey was carried-out in 1970-1971 to provide policymakers in designing policies. However, during 1969 and 1985, many strategic industries were established. This includes Sugar industries (Kenana, Sinnar, and Assalaya) and textiles industries (Al-Sadaqa, Alhajj Abdellah). The years from 1986 to 1989 witnessed industrial policies stability, the productivity of sugar industries were decline from 498 thousand tons in season of 1984/1985 to 395 thousand tons in season of 1988/1989. In the years from 1992-2002, the comprehensive national strategic plan was formulated to achieve inclusive economic development.

The efforts also made in transfer technologies in 2000 to modernize the industrial sector. These efforts were not effective due to the fragmented political parties and instability. However, since the early 2000s, which witnessed a political priority to build and initiate trade policy to transform Sudan economy by discovering oil in 1999 which considered is an only exception did over the last decades has been experiencing deindustrialization.

3. RELATED LITERATURE

Since eighteen century there has been debating over trade policy practices between by Alexander Hamilton (1791) and List (1856), a debate that supports taken measures to protect new industries in Germany and the United States against more competitive industries from the United Kingdom. Since then, there have been mix theoretical and empirical evidences on success and the failure of implementing industrial policies. For instance, neoclassical economic theory argues that selective industrial policies caused distortion the market efficiency, where firms find some difficulties in competing in the market. Undertaking innovation become the main drivers for productivity and economic growth. However, in the late 1960s and early 1970s many developing countries adapted import substitution policies were failed to create competitiveness environment after trade liberalization and most of these industries were inefficient (Matthews, R., 1986 & Chang, Ha-Joon, 2003) claimed that import substitution did not work well in the Latin American countries. The failure of these policies can be justified to the lack of economies of scale and the selected industries which were not suitable to their development stages.

Economic development theories emphasis there is debates on the role of trade policy in achieving the expected development. For instance, the Ricardian model of international trade has long been considered as a useful tool to stimulate growth

and national welfare. The model ignores the role of economies of scale and took in account the gain from trade through specialization in a particular product, which allows a country to allocate its scarce resources to more efficient sectors. Krugman & Obstfeld (2003) argue that only through exports countries may reach the relatively high productivity. The neoclassical growth models, which consider technological change as exogenous variable often argue that trade policies do not have impacts on economic growth (Solow, 1957). However, the new economic growth theories opposite the neoclassical growth models in the fact that technological change is associated with trade policies.

On one hand the endogenous growth theory argues that production capability of firms heavily depends on amount of knowledge stock in the economy. On the other hand trade theory suggests by investing in R&D and upgrading skills, firm will be able to achieve economies of scale and compete internationally (Hung et al., 2004). Economic growth can be sustained in the long run if a country expands the promising sectors (Grossman & Helpman, 1991). Through engaging in the international trade, the technological spillovers can be achieved. When a country having access to forging's intermediate and capital goods, firms will able to transfer technology by adopting from the best practices from foreign competitors (Amiti and Konings, 2007).

For the Least Development Countries (LDCs) like Sudan often have constraints in finance and technology, trade may affect growth in a country has a dynamic comparative advantage in specific sectors, it will affect the productivity growth in the long-run (e.g., Redding, 1999; Halpern, L., & Szeidl A., 2015 and Lucas, 1988). Similarly, Kim and Lin (2009) argue that international trade enhances economic growth in long-run depending on the level of economic development in a country. The impacts of trade on growth are found to be positive in advanced economies and have negative effects on LDCs ones (Herzer, 2013).

What are the effects of trade policy on productivity growth in the Sudanese manufacturing firms? Previous work on the link between trade and growth is recognized by international trade theory, which suggests that there could be both dynamic and static effect from trade. It also identified from macroeconomic level (exports and imports) and microeconomic level (firm productivity). Different channels can trade impacts productivity, the economies of scale, market competition, allocation of resources, and technical spillovers.

International trade removes the constraints that arise from the size of the domestic market, which allows firms to produce large scales and improve labor productivity (Stiglitz, J. and Charlton, A., 2006). One of the issues arise here through trade liberalization there will be changes in the relative prices, which may constraint firms less efficient and have a lower investments in technology (Nübler, I. 2011).

The endowment structure and comparative advantages enable countries to specialize in commodities that produce by lower cost relative to the foreign countries. Therefore, a country could allocate its resources in the sectors that use higher skills, capital intensity that create a dynamic benefit (Edwards, S. 1998; Melitz, 2003 & Bernard et al., 2007). This will enforce firms use its resource efficiently to survive and the firms are less efficient would exit from the market. Firms can enter foreign markets if they have greater technological capabilities. Foreign firms with lower prices will displace domestic firms with high prices; the resources will be allocated to firms having higher efficiency and technological opportunities.

In addressing the issue of trade and productivity growth in Sudan, researchers and policymakers have found a positive association exists between productivity growth and import penetration (Edwards, 1998). Similarly, Grossman and Helpman (1990) affirmed that most of the manufacturing countries experienced high economic growth due to accumulation of knowledge. Besides, other researchers argue that the hysteresis exports are strongly correlated with the sunk costs for firms to enter the foreign markets (e.g., Dixit, 1989; & Krugman, 1979).

There is a growing body of literature on assessment of international trade and growth. Grossman & Helpman (1991) argue that trade could enhance growth through access to imports, where firms depend on variety and quantity of intermediate goods. It often argues that increasing international competition accelerates productivity growth.

Why should we pay attention to the export performance of Sudanese manufacturing firms? Productivity growth and trade policy are arguably the most fundamental determinants of economic growth. The sustainable economic growth can be attained through accumulation of physical capital, which characterizes by diminishing returns. Melitz & Trefler (2012) argue that by removing trade barriers advance productive firms increase their market shares and become more competitive.

Numerous studies employed Solow residual method to examine the relationship between productivity and exporting, this approach assumes that firms operate efficiently and have constant returns to scale (Krugman, 1979). In this study, we visit learning by exporting and self-selection hypotheses to examine the productivity growth and trade for Sudanese manufacturing firms for the period 1985-2018.

Nonetheless, our analysis seeks to complement with existing literature of the impacts of trade reforms on productivity growth in Sudan. Siddig K. (2010) attempt to investigate the impacts of economic sanctions on Sudanese economy found that Sudanese trade has been gaining a competitive advantage in Asia, Common Markets of Eastern and Southern Africa (COMESA) and Middle East and North

African region (MENA), and more recently, Ebaidalla M. & Atif A. (2015) analyses the impacts of trade policies on agricultural exports, they used gravity model to examine the determinants of Sudanese agricultural exports. They found that population size and the importer's gross domestic product (GDP) have impacts on agricultural exports. Almosharaf A & Deng-Tian F., (2014) claim that the outward-oriented trade strategy does not create a clear improvement in price incentives for exports. Our approach differs from these studies in two important ways. First, Siddig K. (2010) and Ebaidalla M. & Atif A. (2015) focus on the trade relationship between Sudan and regional markets of agricultural exports, while we used to extend the analysis the manufacturing exports.

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4. MAIN FINDINGS

To examine the effect of exports have on productivity growth. Figure 1 shows the percentage of exports of the top 10 products in 2015.

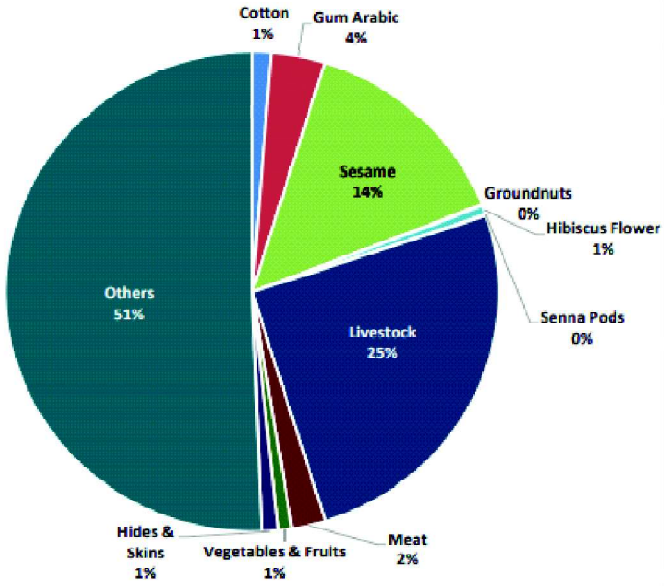

Figure 1: Percentage of exports of the top 10 products in 2015

Source: The World Bank Group and Statistical yearbook (various issues) from Sudan Central Bank, 2020

The figure shows that livestock are the largest for Sudan's exports, followed by sesame, Gum Arabic, cotton, hides and skins, vegetables oil, hibiscus follower among other top exports in 2015. These products have potential for improving exports in the Sudan if the government supports these products. Industrial sector

contains oil, minerals and extraction manufacturing, electricity, water and gas. The sector contribution to the GDP was 21.8% in 2020 and 22.2% in 2021 respectively. The industrial sector has registered a negatively growth from 2.7% in 2020 to -0.3% in 2021

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Table 1: Oil and non-oil Exports 2018-2021

	2018	*2019*	*2020*	*2021*
Export (FOB) US$	3,484.7	3,734.7	3,802.6	4,379.0
Oil exports US$	519.6	532.2	65.4	36.6
Non-oil exports US$	2,965.1	3,202.5	3,737.0	4,353.4
Exports as % of GDP	6.5	8.8	4.3	23.9

Source: Sudanese customs Authority, ministry oil and gas.

Table 1 presents the oil and non-oil exports for the recent period from 2018 to 2021. It can be noted that oil exports declining from US$519.6 in 2018 to US$36.6 in 2021. While non-oil exports are increased dramatically from US$2,965.1 to US$4,353.4. As a result, the contribution of exports to the GDP increased from 6.5% in 2018 to 23.9% in 2021.

Table 2: Leading manufacturing commodities exports 2018-2021

	2018			*2019*			*2020*			*2021*		
	QTY	*Value*	*% GDP*	*QTY*	*Value*	*% GDP*	*QTY*	*Value*	*QTY*	*Value*	*QTY*	*Value*
Vegetable Oil (MT)	9,812.6	12.0	0.3	23,365.7	26.0	0.7	54,104.8	59.7	54,104.8	59.7	54,104.8	59.7
Molasses (MT)	74,558.5	7.3	0.2	11,568.2	1.2	0.0	9,416.2	0.9	9,416.2	0.9	9,416.2	0.9
Sugar (MT)	1,205.5	2.0	0.1	6,472.6	2.7	0.1	2,808.5	1.3	2,808.5	1.3	2,808.5	1.3
Ethanol, soft drinks and cement	-		0.5	-	5.3	0.1	-	14.1	-	14.1	-	14.1
Other exports (Value)	-	15.3	0.4	-	19.9	0.5	-	14.6	-	14.6	-	14.6

Sources: Sudan Central Bank, annual reports, January 10th, 2023

Table 2 illustrates the leading manufacturing commodities exports over the period from 2018 until 2021. It can be noted that oil vegetables oil represents the

top exports in terms of quantity and value as well as contribution to the GDP among export finished goods. Molasses considered as the second largest exports, followed by ethanol, cement and soft drinks.

It is worth examining the contribution of industrial and manufacturing sector in GDP. The manufacturing sector in Sudan has changed substantially over the three decades from 1991 until 2019. The index of Manufacturing is now close to returning to its level at the start of 2008, although many manufacturing industries have still not recovered from the recession. Instead, the recovery of the manufacturing industry has been built on the strong performance oil and petrochemical industries.

Figure 2 shows growth of manufacturing sector in the GDP and employment. The contribution of industrial sector in GDP is declined since 2008 from 27% to 22% in 2019. While the employment growth in staidly increased from 11% in 1991 to reach 17% before it declined to 16% in 2019 (The Central Bank of Sudan, 2022, the World Bank).

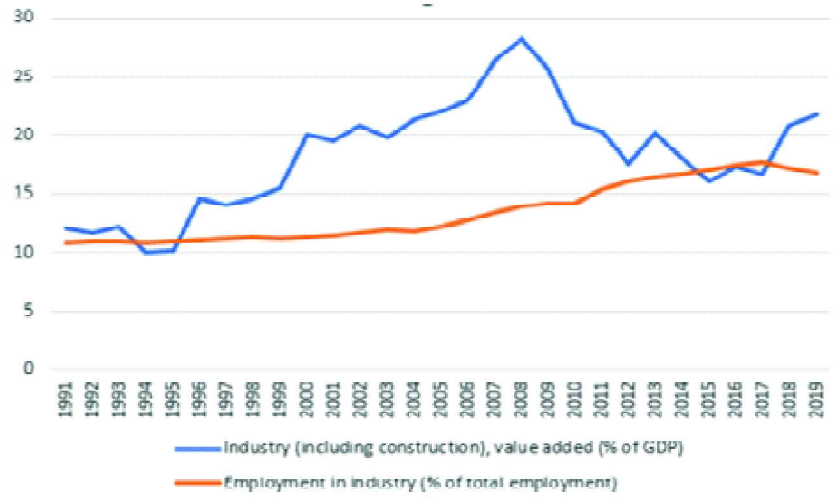

Figure 2: Contribution of manufacturing in the GDP and employment growth

Source: The Central Bank of Sudan, 2022.

The figure also shows the contribution of industry in the total GDP and employment. For instance, in 1991 the contribution of industry in GDP was 13 percent, then it was declined to reached 10 percent in 1993 before it steadily grow to 27.5 percent in 2010. This growth was due to production of petroleum sector. The figure also shows that since 2011 the contribution of industry in GDP was decreased due to the independence of South Sudan, which took 75 percent of

Sudan's production, where the industrial growth reached 15 percent in 2015 before it improves to 22 percent in 2019.

Table 3: Performance of industrial sector from 2012 to 2019

Indicator	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
GDP by constant prices %	2.7	2.8	3.1	2.4	2	3.1	2.9	3
Industrial sector as percentage of the GDP	24.4	24.1	24.1	24.3	23.9	17.8	21.4	23.2
Added value by current prices (million Sudanese pounds)*	4,356.9	4,638,3	4,931.3	5,113.1	5,045.7	5,015.2	5,683.2	6,738.4
Average of industrial growth	0.5	0.9	3.3	2.1	-0.1	4.2	3.4	2.8
Value of national exports (million Sudanese Pounds)	4,750	4,805	5,163	4,795	4,369	6,837	7,083	8,983
Share of industrial exports in total exports (2010-100)	46	45	45	45	45	42	45	42
The annual number of manufacturing companies registered to directorate of companies control	2,172	2,263	2,179	1,890	2,455	2,084	2,716	2,214

Source: The World Bank Group and Statistical yearbook (various issues) 2022.

Table 3 present some indicators of industrial sector over the period from 2012 to 2019. It can be noted that the contribution of industrial sector to the GDP was declined from 24.4 percent in 2012 to 23.2 percent in 2019. As a result, the share of industrial exports in total exports was decreased from 46% in the same period.

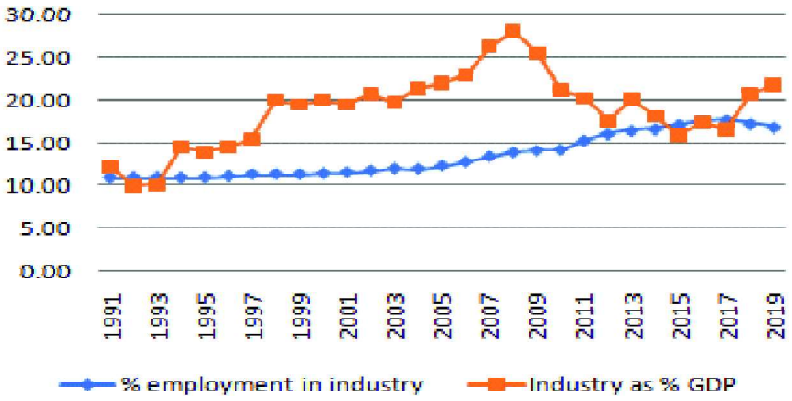

Figure 3: Contribution of the GDP and employment growth in Industry

Sources: Sudan Central Bank, annual reports, January 10th, 2023

*Includes manufacturing process, extraction, electricity and water %

Figure 3 depicts the contribution of the share of employment in industrial sector and share of industry in the GDP. It can be noted that the employment growth in industry has increased steadily from 11 percent in 1991 to 17 percent in 2019. Figure 4 shows the real industry GDP per worker in Sudan from 1991 to 2019. The figure shows that the GDP per worker in industrial sector has witnessed a sentential fluctuating.

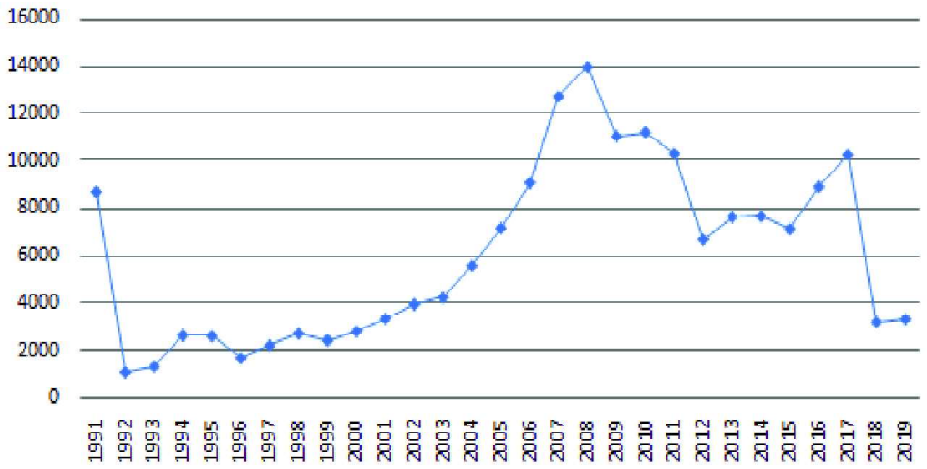

Figure 4: Real GDP per worker in industrial sector

Source: The World Bank Group and Statistical yearbook (various issues) from Sudan Central Bank, 2020.

It can be noticed from figure 4 that in 1991, the GDP per worker in industrial sector was USD9 thousands and it was sharply declined to one thousand US Dollars in 1992. Then it steadily improved until it reached $14 thousand in 2008. This can be justified to the fact that oil processing represents high proportions of manufacturing production. However, since 2008, the GDP per worker in industrial sector shows a fluctuation before it reached USD3 thousand in 2019. The following figure, figure 5 illustrates the GDP per worker Growth in industrial sector for the period from 1990-2019.

It can be noticed that the growth of the GDP per worker in industrial sector took a fluctuation shape. The growth GDP per worker between 1992 and 1994 was due to the declining in GDP per worker in year of 1991. In the last five years, the growth in GDP per worker shows declining in 2018 before it increases in 2019.

Finally, to examine the trade policy is needed to achieve economic growth. Trade policies in Sudan have been based on import substitution for more than four decades. For example, it is now well known and documented that exporting to the foreign markets has improved the efficiency of firms through two channels:

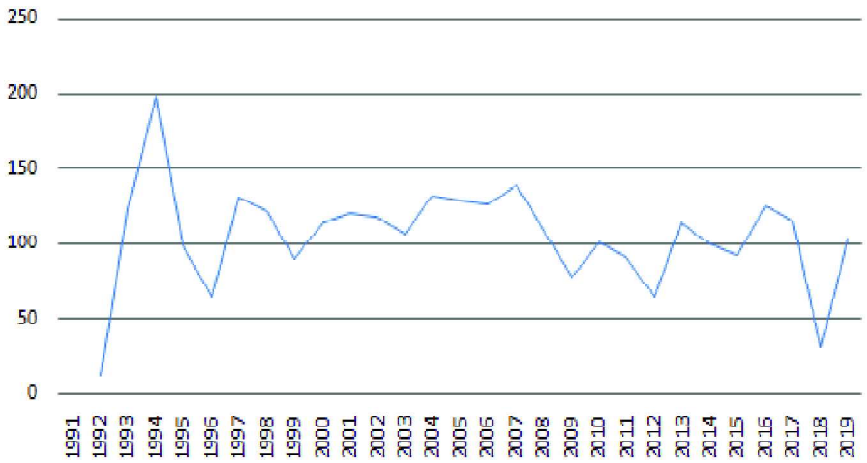

Figure 5: Growth of the GDP per worker in industrial sector

Source: The World Bank Group and Statistical yearbook (various issues) from Sudan Central Bank, 2020.

it does help exploit the economies of scale and it fosters a learning process through technology and knowledge spillover.

However, since the early of 2000s Sudanese government designed policy instruments promotion of exports and productive investment for state-owned enterprises to be produced locally. This includes automobile, food processing, textiles, meat process, cement and steel industries. In 2022, gold represents 70 percent of Sudan total exports up from 25 percent in 2018; livestock was 25 percent up from 13.3 percent besides sesame, oil, Gum Arabic and cotton.

Based on the above, we present our suggestions for the upcoming Sudanese governments to adapt these objectives when it comes to create a competitive industrial sector that enjoy with high income stimulate economic growth, reduce the unemployment and turns the deficits into surplus.

As general known that a good investment climate, focusing on exports particularly processing goods are the key success for industrial sector contribution. Besides this, policymakers should make sure that the inclusiveness of linkage and supporting sectors and develop a partnership between public private sector to facilitate and provide supports. In Sudan, many progress in achieving objectives of industrial sector. For instance, great efforts have been made to attract foreign direct investment (FDI) in different sectors such oil and gas, electricity and telecommunications, agriculture and food processing.

Regarding the skills development, many educational and technical training programs towards science, technology and innovation (STI) have been established.

Besides the attaching R&D research institutes under ministries to provide policymakers and productive sectors with consultancies and supports. Even though there are many graduates students in STI programs, there is still gap needs be narrowed by link the labor market requirements by education output, besides developing learning curriculums in universities, schools, technical institutes to meet industrial sector requirements.

Enhancing innovation and added value to Sudan products cannot be achieved unless government provides financial and technical supports by establishing fund supporting industrial development. Manufacturing firms could increase the productivity and adopt innovation system that allows the ability to compete internationally. Each manufacturing firms has a different capital and technological capabilities. Lack of domestic technological capabilities was a key constraint to the success of industrial policies. This can be addressed by science and innovation policies, which include research and development (R&D) incentives, science parks, and support to collaborative projects with universities and research institutes

Regarding the standardization and metrologies, improve the quality of Sudanese commodities by supporting laboratories and manufacturing firms with guidance and regulations, technical rules for the priority sectors to meet the international standardization, besides granting the quality certificates for exporting firms.

No progress has been made towards friendly-industrial environment. For this, we proposed creating an excellence prize for the firms that show friendly environmental practices. Besides supporting inclusive environmental management systems to provide labor with a better environment and supporting sustainable development. Government may implement and increase the penalties to unwelcome practices. For this purpose, government should enhance technical support for manufacturing firms that look forward to develop cleaner production system and environmental management by supporting the recycling of industrial and agricultural wastes and support the collaboration among universities, R&D organizations, and manufacturing firms.

5. CONCLUSION AND POLICY IMPLICATIONS

This study has sought to address the following question – why do Sudanese manufacturing firms export less – by looking in details at industrial policies, productivity growth, labor productivity, and export behavior of manufacturing firms and ability of manufacturing firms to export. The results show Sudanese manufacturing firms are classified as a capital intensive, where Sudan has a potential cost advantage in labor and manufacturing firms enjoy with cheap labor. We have also investigated the effect of trade policy on productivity and economic growth. Our results suggest that the manufacturing firms offer the largest scope

for productivity gains through industrial policies aiming at enhancing economic growth.

As a sound trade policy instruments are important of productivity, they are facilitated for as well. The results show that trade policy tools used during the period from 1999-2015, are an important determinant of productivity development of Sudan. Secondly, a high level of GDP per worker enhanced economic growth and is found to increase productivity of industrial sector.

Our results have three broader implications. Firstly, a policy oriented to increasing the exports by manufacturing firm can set the economy on a positive path towards economic recovery. We argue that enabling manufacturing firms for sustainable exports particularly using institutional, incentive and partnership measures to promote productive transformation and diversification in sectors with high growth and job creation potential. Sudanese manufacturing firms are classified as a capital intensive, where Sudan has a potential cost advantage in labor. However, building industrial strategy to support manufacturing firms adapting the new technologies and focusing on labor intensive industries are the key success to sustaining exports and enable them learn by export. Besides that Sudan needs an alternative development strategy, where the government playing a big role in maintaining macroeconomic stability, promoting market efficiency, and providing infrastructure.

Secondly and for time been for the trade policy options, there is a need for implementing collective action to target adopted specific industries that have linkage effect. This includes developing sound industrial policies (taxes, tax expenditures, and subsidies) that efficiently enable growth and production for foreign markets.

Finally, a fully support to the current and potential exporters across sub-sectors is needed to overcome challenges manufacturing firms face. Moreover direct and indirect taxation policies should not discourage the growth of Sudanese exports. In some export sectors, tax incentives may be beneficial or subsidies through the credit system.

Overall our analysis confirms the necessity to take into account the harmonization of trade openness as well as and R&D effort when estimating the effectiveness of trade policy and productivity growth.

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