

Is Trade Liberalization a Curse or Blessing for Developing Countries? Evidence from China and Zambia

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Abstract In response to the ongoing debates about the lucrativeness of free trade economics, this paper presents findings on whether trade liberalization is a curse or blessing for developing countries with evidence from China and Zambia. The study is premised on three specific objectives; firstly, to find out how openness to trade influences economic performance as measured in GDP; secondly, the subsequent overall welfare of people in the economy and thirdly, the constraints behind gains from trade in a liberalized regime. In order to yield composed results, the study uses both descriptive and empirical approaches. In the descriptive part, the study analyses statistics on the economic performance of China and Zambia two decades after their respective market reforms (1978-1998) and (1991-2011). Using trade to GDP ratios as a proxy for trade liberalization, results indicate that, firstly, Zambia is more open to trade than China. Secondly, China was able to double its GDP in the first decade from \$US 188, 900 million to \$US 492,000 million while Zambia's GDP only increased from \$US 5,000 million to \$US 5,900 million in the same interval. Beyond a decade, China's GDP was more than quadrupled (to \$US 1,230,538 million) while Zambia's was only doubled (to \$US 10,469 million). The paper further finds that, the GDP per capita for China rose from \$US 197 to \$US 972 in two decades while Zambia's per capita GDP rose from \$US 660 to \$US 767 in two decades after trade liberalization. In terms of economic wellbeing, the percentage of people living below income poverty PPP\$ 1.25/day is found to be 6% for China and 74.3% for Zambia suggesting a poor economic performance for Zambia. The study finds that, high natural resource contribution to GDP and high exports in primary commodities are the major constraints to the gains from trade. In the empirical part, the study uses Cobb-Douglas Production Function Model based on linear regression methods using time series data for Zambia from 1990 to 2014. Regression results show that; the influence of openness to trade on Zambia's GDP is positive and statistically significant at 99.9% level of significance and that, any unit increase in trade openness can increase Zambia's GDP by 73.2%. However, the influence of manufacturing, total reserves and taxes on goods and services is negative but statistically significant suggesting that their increase may cause a decline in GDP. Policy implications; Zambia is more open to trade than China yet its economic performance is low. Additionally, like many other developing countries, majority (67%) of Zambia's top exports are primary commodities. Contrariwise, 94% of China's top exports are manufactured goods. Therefore, it follows that, while a few countries like China get blessed from trade liberalization, many others get cursed due to their high natural resource dependence. The paper gives the following recommendations; firstly, developing countries like Zambia should moderate their integration into the global economy until they establish a concrete base for industrialization to compete with industrialized countries. More openness to trade will perpetually keep them on the downstream of the global value chain system as suppliers of raw materials. Secondly, any Investment must be channelled towards value addition to revamp the industrial system. Thirdly, preconditions such as stable energy supply, road network, communication etc. must be put in place to enhance productivity. Therefore, future studies should consider scaling up the sample to more than two countries for conclusive results.

Keywords: trade liberalization, GDP, GDP real growth, GDP per capita, GNI per capita, developing countries, China, Zambia

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1. Introduction

Most classical economists such as Adam Smith in *The Wealth of Nations 1776* and David Ricardo's principle of Comparative Advantage of 1817 have advocated for free trade and economic interdependence of countries by acknowledging that, countries should specialise in the production of goods they can produce with minimum cost of production and then trade with other countries ([1]: page 53). Although this ideology is widely accepted, it is divergent with advocates of protectionism who see trade barriers -tariffs and non-tariff measures- as good for the wellbeing of the economy (Thomas Malthus' British Corn Laws 1815-1846)¹.

In contemporary times, economists such as Paul Krugman argue that free trade is particularly imperative in enhancing economic welfare and development². The World Bank and International Monetary Fund (IMF) have also preached to several developing countries in the world to restructure their economies towards free trade and private investment³. To this effect, most developing countries in Latin America, Asia and Africa have adopted trade liberalization policies in the recent decades either unilaterally, as part of their growth model, or multilaterally, as a conditional package of Structural Adjustment Policies (SAPs) from the World Bank and IMF for some economic assistance.

In all these endeavours, some countries have recorded economic development (herein referred to as blessing) while others have remained in the state of underdevelopment (herein referred to as curse). This has left a mixed reaction among scholars and observers compelling them to question the credibility of trade liberalization policies as whether they should be seen as a panacea to the development malaise of developing countries or not.

Putting China and Zambia into perspective, this study endeavours to critically analyse how each one of them was impacted by the adoption of trade liberalization policies and the subsequent economic status quo. Like many other developing countries, China undertook market-oriented reforms from 1978 and the effects have been conspicuous ever since. Likewise, Zambia liberalized its economy in 1991 and the effects have been notable. But whether or not this economic trajectory should be understood as improving the welfare of people (blessing) or in fact worsening their economic status (curse) is the whole essence of this study. The subsequent subtheme gives a brief account of the topic under investigation.

1.1. Background of the Study

Most developing countries in the world have shared a lot of features in common a few decades ago. In the case of Asia, Africa and Latin America, some of these features include independence from colonial rule followed by weak economic institutions resulting in poor economic performance and prevalence of poverty respectively. This

resulted in most of the countries restructuring their economies in the bid to offer a lasting solution to these economic problems⁴. China, a socialist country, unilaterally initiated market-oriented structural reforms in 1978 which made it shift from a more closed economy to an open economy. With its huge population of about 1.3 billion coupled with its strategic location, the Southeast Asian country was seen as a target market by foreign companies and the subsequent result was an influx of foreign firms competing with domestic firms (Li, nd).

By the same token, Zambia, a previously socialist economy in the southern part of Africa, adopted trade liberalization reforms in the 1990s. This was soon after the country's most dependent copper prices had begun to fall on the world market leading the country into serious economic problems.

In order to be relieved off this burden, the country was coaxed to multilaterally adopt a set of policies called Structural Adjustment Policies (SAPs) from the IMF and World Bank. This included among others the privatization of state-owned companies, removal of government subsidies, devaluation of the local currency, introduction of user fees, wage freezes, removal of tariffs and non-tariff barriers to trade [2]. It is from this background that this study intends to find out in what ways were these two countries blessed or cursed from this undertaking (economic restructuring) so that other countries may learn from their experiences. In the next subsection below, we shall briefly expound the driving force of this study.

1.2. Motivation of the Study

The OECD, ILO, World Bank and WTO [3], like many other institutions, have acknowledged in literature that trade liberalization is very important for the growth of developing countries. They further argue that, a number of countries that were once poor became rich through their participation in world trade. In as much as such claims are supported by empirical evidence, a very narrow explanation is given to those developing countries that adopt the same policies and become poorer than before as a result of their participation and integration into the global economy. Given the forgoing, this study is particularly motivated to establish why some countries yield desired economic outcomes (blessings) and others curses even after walking through the same path. Thus the study seeks to contribute to the body of knowledge by drawing policy lessons from countries with success stories in trade liberalization reforms to help other developing countries aspiring for the same course. In the following subsection, we briefly unveil the major objectives of this study.

1.3. Objectives

The objectives of this study have been subdivided into two, namely, general and specific. The general objective is to examine whether trade liberalization is a curse or blessing for developing countries.

1 <http://understandingsociety.blogspot.com/2009/07/malthus-blogging-on-corn-laws.html>; accessed on 2023-04-9.

2 <http://marginalrevolution.com/marginalrevolution/2008/10/what-is-new-tra.html>; accessed on 2023-04-9.

3 <http://www.britannica.com/topic/World-Bank>; accessed on 2023-04-9.

4 Economic problems associated with low productivity and lack of sustainable drivers of growth.

In specific terms, firstly, the study seeks to find out how openness to trade influence economic performance as measured in GDP; secondly, the subsequent overall welfare of people in the economy; and thirdly, the constraints behind gains from trade liberalization regime. The next subsection outlines some research questions derived from the objectives.

1.4. Research Questions

The non-existence of logical and satisfactory explanation as to why some developing countries become blessed after adopting trade liberalization policies and others become cursed has given birth to the following research questions:

(i). Is trade liberalization a curse or blessing for developing countries like Zambia? (ii). In the event where trade liberalization has failed to improve the overall welfare of people (cursing) in developing countries, what policy framework can be drawn to maximize benefits from trade liberalization for developing countries like Zambia given the increasing debate regarding the credibility of their incorporation into the global economy? (iii). what are the major constraints to gains from trade liberalization in developing countries? In the next subsection, we shall briefly introduce the methodologies used in this study.

1.5. Research Methodology

There exists no superior methodology in literature that exhaustively answer questions regarding the impact of the integration of developing countries into the global economic system basically because of the myriad confounding features that characterise developing countries ([4] page 191). In order to mitigate the bias towards the use of a single technique, this study shall employ both descriptive and empirical methods.

The descriptive part shall take an *ex-post* orientation anchored on secondary data sources (i.e. journals, World Bank/IMF sources and other publications) to assess the impact of trade liberalization on economic performance of developing countries using a number of economic indicators such as GDP, share of exports and income. To arrive at that, the study shall employ trade to GDP ratios as a proxy for trade liberalization. This measure is a widely used measure of trade liberalization in a number of studies notably by WTO ([5], page 15).

Meanwhile, in the empirical part, the study shall use an extended Cobb-Douglas Production Function Model (C-D Model) which shall be a derivative of the original version. First developed by Charles Cobb and Paul Douglas, the C-D Model is a grand model in economics fundamentally used in examining how output (GDP) is influenced by the changes in inputs (i.e. capital and labour). To achieve that, linear regression techniques shall be employed in which we shall control for some variables. The overall outline of the whole paper can be looked at in the next segment.

1.6. Structure of the Study

The rest of the paper is organized as follows; chapter 1 is the introduction in which we have outlined the background of the study, the motivation, objectives, research questions and methodology. In chapter 2, we

review literature theoretically and empirically. Chapter 3 is where we look at the symbiotic relationship between liberalization, privatization and globalization in developing countries. Meanwhile, in chapter 4, we provide descriptive evidence of whether trade liberalization is a curse/blessing by looking at its impact on China and Zambia based on a selected number of development indicators.

In Chapter 5, we give empirical evidence using a C-D model with linear regression methods and in Chapter 6 we discuss the overall findings and draw conclusions and recommendations. The essence of this chapter was to contextualize the main theme of this study. Therefore, in the next chapter, we shall give an analysis of theoretical and empirical literature implicitly and explicitly related to the theme of our study.

2. Literature Review

Economic theory suggests that removing distortions such as tariffs and other trade barriers will cause an economy to operate more efficiently and to grow more rapidly. Since economic growth is generally found to be the main driver of improvements in living standards, trade reforms that increase growth have been the focus of trade negotiators, researchers, developing countries governments, and international development agencies as instruments to improve humanity [6]. This section reviews literature (both theoretical and empirical) related directly or indirectly to the subject under study and we begin with the theoretical analysis in the subsection below.

2.1. Theoretical Analysis of Trade Liberalization

What theories justify trade liberalization? We answer this question in this section by looking at the Gravity Model, the Ricardian Model, the Heckscher-Ohlin (H-O) Model and the Standard trade model respectively as follows;

2.1.1. The Gravity Model

The Gravity Model: as a reminiscent of Isaac Newton's law of gravity, Jan Tinbergen in 1962 conceived that, just as the gravitation attraction between any two objects is proportional to the product of their masses and diminishes with distance, the trade between any two countries is, all other things being equal, proportional to the product of their GDPs and diminishes with distance ([7], page 14). The model estimates the pattern of international trade and has been an empirical success in that it accurately predicts trade flows between countries for many goods and services. A gravity relationship can arise in almost any trade model that includes trade costs that increase with distance⁵. The underlying features described in the model are: size of the economy as

⁵ Deardorff, A.V. (1998), Determinants of Bilateral Trade Flows: Does Gravity Work in a Neoclassical World. In: Frankel, J.A., Ed., The Regionalization of the World Economy, The University of Chicago Press, Chicago.

measured by GDP and distance between trading partners in kilometres.

Statistics from UNCTAD [8] show that, the top five trading partners for the U.S in 2014 by exports in millions of US dollars were Canada, Mexico, China, Japan and United Kingdom respectively. It can be argued that, the U.S trade with Canada and Mexico is by virtue of proximity in distance (reduced transportation costs), while with China, Japan and U.K can be explained in terms of economic size measured by GDP (bigger economies produce more, have higher incomes which makes them demand more from each other). Meanwhile, Zambia's top five trading partners by exports in million U.S dollars as of 2014 were China, Switzerland, D.R. Congo, South Africa and the United Arab Emirates (UAE) respectively (UNCTAD, 2016).

In view of that, trade with China, Switzerland and UAE could be attributed to economic sizes (principally these countries produce more refined goods whose raw materials are Zambia's exports). Meanwhile, trade with D.R Congo and South Africa is largely by virtue of nearness in distance thus cutting on transportation cost. Other features such as cross border barriers, geography (topography) and cultural affinity are also important elements embodied in the model (by extension) that determine who trades with whom ([7], page 16).

Although, the model is instrumental in explaining patterns of trade, it wrongly assumes that distance, whether measured by sea or land, will affect transportation cost between countries equally. This may not be true because land-linked countries like Zambia tend to incur higher transportation costs than countries with sea ports like Tanzania. Additionally, the model talks about economic size of two countries to be similar in GDP in order to predict bilateral trade flows, but what explanation can be given to Zambia's main export partners (Switzerland and China) with dissimilar economic sizes in GDP and a longer distance apart? This remains a lacuna in the model. However, it generally remains fundamental in explaining why countries trade with each other. The next subsection looks at the Ricardian model.

2.1.2. The Ricardian Model

The Ricardian Model: with inspiration from Adam Smith's publication on the wealth of nations in 1776, David Ricardo, an English economist of the 18th century, coined the theory of comparative advantage in which he argues that, differences in labour productivity makes countries benefit from trading with each other. The theory argues that, countries that have a lower production cost (opportunity cost) at one good relative to another should specialize in producing that good and trade with others for a good in which it finds less costly to produce. This leads to increase in total production due to economies of scale thus ultimately making everyone well off ([1]: page 52). The fundamental feature of the theory is the removal of trade barriers (trade liberalization) in order to allow free trade of goods and services among countries failure to which contending countries will not benefit from their differences in labour productivity.

For example, countries with high population such as China and India enjoy population dividends such as cheap labour and hence they have a comparative advantage in

labour intensive investments. Most developing countries such as Zambia have a comparative advantage in raw materials while developed economies such as United States and Germany have a comparative advantage in capital intensive hi-tech goods such as automobiles hence trade between the two (developing and developed countries) is usually skewed towards interindustry.

Nonetheless, contemporary empirical studies like that of Paul Krugman in 'The New Trade Theory' later in the 1980s have given less credit to the theory of comparative advantage especially regarding trade between similar countries in that, their trade may no longer be compelled by comparative advantage but increasing economies of scale [4].

For instance, countries like U.S and Germany may still trade in similar but differentiated goods such as automobiles through intraindustry trade and so, the role of comparative advantage as the sole trigger of trade as assumed by Ricardian model becomes trivial given that both countries have comparative advantage in the same industry. Notwithstanding that, the Ricardian model of comparative advantage still holds and essentially provides a logical basis for the appreciation of international trade and trade liberalization regimes in the contemporary world. In the next subsection, we shall look at the Heckscher – Ohlin model.

2.1.3. The Heckscher-Ohlin (H-O) Model

The Heckscher-Ohlin (H-O) Model: as a revision to Ricardo's single factor (technology) model of comparative advantage, Eli Heckscher and Bertil Ohlin propounded the H-O model in which they argued that, differences in factor endowments (land, labor and capital) determine the pattern of trade. By assuming technological level to be the same across countries, the model argues that, countries will export goods and services which use its relatively abundant factors of production and import those which use its relatively scarce factors of production [9]. This means that, trade barriers ought to be removed (trade liberalization) in order to promote the exchange of goods and services produced by these countries.

The H-O model further demonstrates that, when countries move to free trade, they will experience an increase in aggregate efficiency resulting from differences in national relative factor abundance and when different industries use different factors of production in different proportions. This will lead to a change in prices which will cause a shift in production of traded goods between countries with each country producing more of its export good and less of its import good. In this way, it is ultimately conceived that trade will be nationally profitable because each country's imports will be cheaper (along with its profitable exports), and that, will have characterizable effects upon wages and rents [10].

Although the model holds much for trade between the North and South due to their divergent endowments, evidence on U.S. imports and exports in 1962 disputed this model into what is known as Leontief's paradox in which it was found that, U.S. imports were more capital intensive (\$2,132,000) than its exports (\$1,876,000) as measured by capital/million dollars and that, it had a higher capital-labour ratio on imports (\$17,916) than on

corresponding exports (\$14,321) in spite of having relative abundance of capital ([7], page 76) citing Baldwin (1971). This suggests that, countries may trade not only due to their relative factor endowments. In the case of U.S and other economies from the North, their trade pattern is usually a function of economies of scale on differentiated products in form of intraindustry trade.

This means that, with time, these advanced economies may have overlapping factor endowments such as similar technologies and capital-labor ratio which aligns their trade towards a non-H-O model trajectory and hence the Leontief paradox. There is also an interesting aspect of 'missing trade' in which we assume that, trade in goods implicitly take the form of trade in mobile factors of production (capital and labour). Factor trade apparently turns out to be smaller than the H-O model predicts.

China with about 15% of world labour force and about 3% of the world's income may according to the factor-proportion theory (H-O model) suggest that, it should export most of its labour through trade but it does not on the contrary hence escalating skepticism about the credibility of the model ([7], page 79). Needless to say, the model lays a platform on which to appreciate the existence of differences in factor endowments and the subsequent need for trade among countries. We wind up this section by looking at the Standard trade model in the following segment.

2.1.4. The Standard Trade Model

The Standard Trade Model: generally, Ricardian model of comparative advantage, the specific factors model and the H-O model are indoctrinated in this model. According to this model, differences in labour services, labour skills, physical capital, land and technology across countries causes differences in production possibility frontier (PPF). Thus, a country's PPF determines its relative supply function.

National relative supply functions determine a global relative supply function, which along with global relative demand determine the equilibrium under international trade, where demand and supply complement each other, ([11], page 6-4). From this perspective, we can see that the differences in labour skills, physical capital, land and technology are obvious among countries and since this determines their efficient production possibilities, the need to trade with others becomes particularly important hence all impediments to trade ought to be reduced or eliminated (trade liberalization).

China is well endowed with a population bonus which gives it a factor endowment of cheap labour. Although China has relative abundance in labour supply on account of its demographic dividend, its labour may be compromised by low skill relative to that of other countries such as United States and Germany whose labour tend to be more skilled even if it is relatively less than that of China in terms of size or number. This leads to what is termed as labour effectiveness which is a function of labour productivity. This is the very reason why the U.S is able to export labour intensive goods even with its relatively scarce skilled labour force compared to China. Having looked at the theoretical analysis, we further give a review of empirical studies in the next section.

2.2. Empirical Review

What empirical studies have been conducted on the impact of trade liberalization on developing countries? In this subsection, we answer this question by looking at various relevant studies from different contexts and times in order to have a comprehensive picture from the perspective of previous research.

In a selective survey on trade, growth and poverty using a variety of sources (cross-country and panel growth regressions, industry and firm-level research and case studies), Berg and Krueger [12] concluded that, trade openness contributes to economic growth. However, it was found that trade openness did not have systematic effects on the poor beyond its effects on overall growth.

Similarly, in a bid to extend the 1995 Sachs and Warner's study on the relationship between trade openness and economic growth using new data set of openness indicators and trade liberalization dates, Wacziarg and Horn-Welch [13] show that, over the 1950 to 1998 period, countries that liberalized their trade regimes had experienced average annual growth rates that were about 1.5% points higher than the time before liberalization suggesting that trade liberalization did indeed lead to a blessing.

Kora and Gjoni ([14] page 194) conducted a study on the impact of trade openness on Albania's economic growth with its largest trading partner Italy using endogenous gravity theory (EGT). Empirical findings suggested that openness between Albania and Italy was positive and statistically significant for economic growth but the economic crises in the European Union reduced economic growth in Albania.

Again, the study showed that the privatization of the financial system increased pressure on economic growth and it was very interesting to note that the index of corruption increased the Albanian economic growth.

In a study of 42 developing countries of Asia, Africa and Latin America conducted by Parikh and Stirbu [15] to examine the impact of trade liberalisation on economic growth, investment share of GDP, openness, trade balance and current accounts (as % of GDP) using both panel data and country by country data, it was found that, domestic economic growth is often positively related to liberalisation for many countries of the sample. The study further analysed the impact of growth on trade balance and current account to examine whether higher economic growth due to liberalisation leads to adverse effect on balance of trade.

It was further established that liberalisation promotes growth and such output growth in pre-liberalisation period is lower than that in post-liberalisation period. Panel data of 42 countries, regional panel for three regions (fixed effect and random effect models) and country by country analysis (OLS regression) results suggested that liberalisation promotes growth but growth itself has negative effect on trade balance for a large majority of countries.

In a related case study using the difference-in-difference approach and the Warner and Sachs (1995) criteria to identify liberalization dates and episodes, [16] studied the effect of trade liberalization on the growth of

real GDP on a sample of seven SADC countries using a yearly data set from 1980 to 2008. Fixed-effect results revealed that the mean change in the growth rate of real GDP from the period prior to and after trade liberalization was 4.1% units. As conceptually predicted, the mean growth rates of exports, imports and FDI inflows had also increased. Thereby, the results suggest that, on average and in aggregate, trade liberalization appears to have had a positive and significant impact on the change in the growth rate of the SADC sample countries. On the contrary, country-specific analysis revealed differences among the sample countries regarding their growth, exports and imports performances. Similar pattern in the effect and dynamics of FDI inflows on growth were notable.

Similarly, Asiedu [17] examined the impact of trade liberalization policy adopted as part of the Structural Adjustment Program (SAP) on growth rate of real GDP of Ghana using the Autoregressive Distributed Lag approach to estimate the long run and short run parameters for the specified model. Using trade openness as a proxy for liberalization, the study found a positive and significant relationship between trade liberalization and real GDP growth in the long-run in Ghana.

In both the long-run and short run, capital stock and population were found to have positive impacts on real GDP growth while FDI was found to have a negative impact on real GDP growth. Inflation though showed a positive relationship with real GDP growth, it was insignificant.

Notwithstanding that, Hamad et al [18] analyzed the effect of trade liberalization on economic growth in Tanzania using a simple linear regression model where real GDP was the dependent variable while trade openness was the independent variable. Annual time series data was used covering the period 1970-2010. This overall period was then subdivided into a closed economy period (1970-1985) and an open economy period (1986-2010). Ordinary Least Square (OLS) technique was used to estimate the regression model twice, regarding the two sub-periods. The empirical findings indicated that trade openness had a positive and significant effect on economic growth in Tanzania. However, this effect was relatively greater during the closed economy compared to the open economy period suggesting that, some levels of protectionism may also influence economic growth in relative terms.

Using time series data Zakaria [19] further empirically analyzed the effects of trade liberalization on exports, imports and trade balance in Pakistan for the period 1981/82 to 2007/08 and concluded that trade liberalization stimulates both exports and imports with the effect being greater on imports than exports and henceforth worsening the trade balance. It was further found that, other variables such as real exchange rate, domestic and foreign incomes, terms of trade and foreign exchange market distortions affected exports, imports and trade balance as hypothetically envisaged. Inclusion of interaction terms further indicated that liberalization stimulated both price and income elasticities of exports, imports and trade balance.

A study by Beata and Li ([20]: page 348) on Romania's openness to trade with a panel of Romanian manufacturing firms shows that the expansion of global retail chains leads to a significant increase in the total factor productivity (TFP) in the supplying manufacturing

industries such that, a 10% increase in the number of foreign chains' outlets was associated with a 2.4% to 2.6% boost to the TFP in the supplying industries. These conclusions propose that the opening up of an economy to FDI can stimulate productivity by boosting the performance of upstream manufacturing industries and improving allocation efficiency which is critical for economic growth.

In the same vein, studies have shown that, China and India both experienced similar reductions in tariffs of around 40% over the long run. However, while subsequent industrial employment boomed in China, it showed only a modest increase in India (OECD, 2010:28). This means that, trade liberalization exert different impacts on developing countries depending on country specific factors (i.e. geography, macro/micro conditions). In other cases on the other hand, some studies using data from a large set of developing countries over the period 1980-2006, found that the correlation between trade liberalization and overall industrial employment is close to zero, meaning that it is insignificant.

However, other studies have shown that, due to trade liberalization, firms with international production networks are better able to reallocate jobs across international borders in response to changes in relative wages in different countries thus weakening the bargaining power of workers and subsequently loss of employment [3].

Case studies by the United States Agency for International Development (USAID) [21] on the impact of trade liberalization on poverty, found the following results; trade liberalization somewhat leads to economic growth which normally reduces income poverty in the long run. Further, the study found that, the effects were country specific in that, trade reform on different sectors and different income groups depend on who initially benefited from trade protection- an issue which vary from one country to another and requiring both macro- and micro-level analysis.

A study by Topalova ([22], page 293) on trade liberalization and poverty in selected Indian districts found that trade liberalization led to an increase in poverty rate and poverty gap in the rural districts where industries more exposed to liberalization were concentrated. By way of comparison, a district that experienced the mean level of tariff changes saw a 2% increase in poverty incidence and a 0.6% increase in poverty depth as opposed to a rural district that experienced no change in tariffs. This setback represented about 15 percent of India's progress in poverty reduction over the 1990s thus suggesting a cost associated with the adoption of the market-oriented reforms.

According to the OECD, ILO, World Bank, WTO [3] the record of developing countries that oriented their economies towards dynamic participation in world trade through trade liberalization, have dramatically improved living standards and subsequent reduction in poverty notably in Asia, ranging from the East-Asian Tigers (South Korea, Singapore and Hong Kong) to the emerging South-East Asian economy of Malaysia, Thailand and Indonesia. In 1975, six out of ten Asians lived in absolute poverty (defined as less than \$1 of income a day), a plight that afflicts less than two out of ten Asians today.

Unlike with GDP, there exists no direct link between trade liberalization and economic wellbeing (i.e. poverty

reduction) given that the former is measured at macro level and the latter at micro level hence the difficulty in bridging the gap. To bridge this gap, a study by Akapaiboon [6] was devised using a computable general equilibrium (CGE)-microsimulation analysis (a macro-micro framework).

The CGE model was used to analyze the general equilibrium effects of trade reform while household survey data were used for poverty analysis at the micro level. Results indicated that, trade liberalization has a positive effect on economic growth in Thailand. The manufacturing sectors output expanded after trade liberalization, while the output of the agricultural sector declined. Additionally, the study showed that there was a movement of labor out of agricultural sectors into the expanding manufacturing and service sectors after trade reform.

On the other hand, at the micro level, household income was found to increase this is mainly due to an increase in unskilled and skilled wages, which are the main source of income for the majority of Thai households. Further, trade liberalization was found to reduce poverty. However, this reduction was greater when the economy was more liberalized.

In a study by McCorrison et al [23] on the impact of agricultural trade liberalisation on food security in developing countries using an in-depth evaluation of 34 studies, there was no consistent outcome, as 13 studies suggested that the reform had led to an increase in food security, while 10 studies showed a decline and the remaining 11 studies reported an ambiguous outcome. These results could have been largely affected by, among others, how food security was measured, and the context in which agricultural trade liberalisation occurred and the diverse approaches used to assess its impact on food security.

The USAID [20] summarized a set of simulations to identify the impact of trade liberalization at the national and global level. Two trade reform scenarios were examined: a “Doha Scenario” involving modest liberalization, and a more ambitious “Full Liberalization Scenario.” The results confirmed that agricultural markets were the most distorted, and would be the most strongly affected by multilateral trade reform.

This finding is especially important for the poor, because they spend a large share of their income on food and because many work in the agricultural sector. Any disturbance in this sector can cause food insecurity and starvation if not taken care of.

Using nationally representative, economy-wide data, Ferreira et al ([24], page 26) shows us the effects of trade liberalization on wage inequality in Brazil during the 1988-1995 trade liberalization periods. The study found that, unlike in other Latin American countries, trade liberalization appeared to have made a significant contribution towards a reduction in wage inequality. More exports in an industry were associated with increased wage premium and employment. Greater import penetration was associated with falls in wage premium which are greater for more skilled workers (who work mostly in industries that suffered the largest increase in penetration).

Aguayo-Tellez [25] concludes from his cross-country studies on the impact of trade liberalization on gender inequality that developed and developing countries react in different ways to the policies; For developed regions,

country-specific evidence is very mixed, and the explanation of such mixed results seems to be related to whether they trade with developed or developing countries. For developing regions, country-specific evidence suggests that most Latin American and Asian women (except Chinese) have benefited from trade liberalization, while African and Chinese women have been hurt.

Poor, unskilled and old women have always been left behind. In addition, evidence suggests that as developing economies mature, the process of trade-related feminization of employment declines or even reverses as consequence of technical development.

To sum up this chapter, we focused on the review of literature (theory and empirical) in order to align and keep our study into focus. In the theory part, we have analysed the Gravity Model, the Ricardian Model, the Heckscher Model and the Standard Trade Model to explain why countries trade. In the empirical review, we have looked at several studies on trade liberalization and the subsequent impact thereof. Therefore, in the next chapter, we shall further give insights on the symbiotic relationship between trade liberalization, privatisation and globalization in developing countries.

3. Liberalization, Privatization and Globalization in Developing Countries: Symbiotic Relationship

The main essence of this chapter is to unveil the interconnectedness of various aspects of trade liberalization regime. We show that, trade liberalization (liberalization) has an impeccable symbiotic relationship with privatization and globalization and that the trio reinforce each other in developing countries although with varying felt consequences per individual country. The chapter stresses the fact that, to liberalise, we have to privatise and to privatise we have to globalise and vice versa. We shall begin by looking at the link between trade liberalization, privatization and globalization in the next subsection.

3.1. The Link between Liberalization, Privatization and Globalization

Trade Liberalization is the reduction or removal of trade barriers such as tariffs and non-tariff measures to ensure the free flow of trade⁶. Privatization on the other hand is the transfer of ownership of previously government owned enterprises to the private ownership in the economy⁷. Meanwhile, globalization entails the economic, social and political integration of countries and regions around the world resulting from increased flows of trade, capital, people and ideas (World Bank, 2002).

All these three terms are intertwined in that, during the adoption of liberalization policy as a growth model, the state loses ownership and control over economic activities and enterprises (through privatization) and assumes the

6 <http://www.investopedia.com/terms/t/trade-liberalization.asp?layout=infini&v=5D&orig=1&adtest=5D> ; accessed on 2023-04-9.

7 <http://www.investopedia.com/terms/p/privatization.asp?layout=infini&v=5D&orig=1&adtest=5D> ; accessed 2023-04-9.

responsibility of a regulator. So privatization is a medium to the actualization of a liberal regime. Meanwhile, globalization conjoins all countries into a single network in which they trade and share various social, cultural and economic benefits. Hence, these three concepts reinforce each other. The next subsection gives more insights about liberalization.

3.2. Liberalization

Liberalization is a concept usually associated with *laissez-faire*⁸. The aftermath of WWII witnessed a number of developing countries experiencing poor economic performance and chronic impoverishment due to perceived weak economic institutions. This lured them into acceptance of liberalization policies as a way of restructuring their economies for better economic performance. Consequently, some countries have succeeded while others have faced serious repercussions on their economies. In the later chapters, we shall know whether this policy framework is a curse or blessing for developing countries. Meanwhile, we delve into the indicators of trade liberalization and measurements in the subsection below.

3.2.1. Indicators of Trade Liberalization and Measurement

Trade Liberalization is complex and thus difficult to quantify because of its involvement of quantifiable and non-quantifiable variables. However, it can be measured using various approaches. Some of them include the following; Adjusted Trade Flow Measures, Price Based Measures, Tariff Measures, Non-Tariff Barriers (NTB) measures and Composite Indices Measures and Trade Ratios, [26].

Adjusted Trade Flow Measures- utilizes deviations of real trade flows from predicted free-trade flows (the counterfactual) to form measures of trade policy. These counterfactuals are assumed to represent what would have happened under different policy frameworks such as trade liberalization.

Price-Based measures; meanwhile, through comparison with international prices, Price-Based measures usually measure trade policy by seeking price distortions in either goods markets or with currencies, largely through the black market premium.

Proponents of price-based measures claim that they capture the effects of both tariff and non-tariff barriers and that economic interpretation is easier than with the flow based measures, as countries with high levels of prices for a prolonged period would be deemed to have a comparative high levels of protection on their economies.

Tariff Measures; these are the most crystal clear trade restrictions and can be viewed as the most direct indicators of restrictions. Some of the commonly used instruments of tariffs are trade-weighted tariff averages, simple averages, effective rate of protection (ERP) also known as Effective Tariff Rate (ETR) and the revenue from duties as a percentage of total trade.

NTBs; these are policies other than tariffs that alter, directly or indirectly, the prices and/or quantities of traded

goods and services. They are inclusive of but not necessarily restricted to import quotas, voluntary export restraints, government procurement and domestic content provisions, restrictions on services trade, trade-related investment measures and stringent administrative requirements⁹. Several other forms such as export subsidies rarely appear as barriers to trade instead to invigorate trade at domestic level especially if such a move is perceived to benefit the economy. China has been well cited for this kind of strategy.

Composite Indices; this category contains measures based on subjective evaluations of trade barriers, structural characteristics, and institutional arrangements. High barriers to trade are very frequently found in conjunction with poor macroeconomic policies, corruption, and unstable governments. In recognition of this a number of indices that combine various indicators (such as macroeconomic, exchange rate and educational indicators in addition to trade openness and policy indicators) into a single variable have been developed.

Trade Openness (Ratios); this is the ratio that measures the intensity of trade in terms of imports, exports as share of GDP, also known as trade to GDP ratio. It is a common measure of trade liberalization and regularly substituted for trade liberalization [5]. Therefore, given this consanguinity between them, trade liberalization in this study shall be determined by the ratio of total trade (Imports + Exports) to GDP as expressed in the following formula;

$$O_i = \frac{\{X_i + M_i\}}{Y_i}$$

Where X_i, M_i and Y_i represent country i 's exports, imports and output (GDP) respectively. Given the scale of 0 to 1 (0%-100%), the higher the ratio or intensity of openness ' O_i ' the more open an economy is to trade relative to others. However, suffice to mention that, a low ratio does not necessary mean high obstacles to trade (tariffs/non-tariff barriers) but may be due to a number of factors such as geography (distance) with a country's potential trading partners as well as the size and population of the economies, [[27]: page 5]. The graph below compares the level of integration of Nigeria, Singapore, Zambia and China using trade ratios.

Openness to trade shows the intensity of trade liberalization of an economy [5]. Thus trade liberalization determines the level of integration and participation of an economy in the global system [28]. From the graphs above, it is evident that, Nigeria is the most open economy among the four countries followed by Singapore. It is also interesting to note that, Zambia, following Singapore, is more open to trade than China. However, Singapore despite being more open than China emerged as one of the Asian Tigers with high rapid economic growth with income/capita nearing that of developed countries. Why was it not the case for Nigeria too? Equally, Zambia is more open than China, what are the performance effects of this? We shall endeavor to address these questions in the later chapters. The next subsection gives some highlights on the global trends of trade liberalization.

⁸ a principle that, markets work efficiently if industries are not regulated and markets are free.

⁹ http://tradebarriers.org/ntb/non_tariff_barriers; accessed on 2023-04-9.

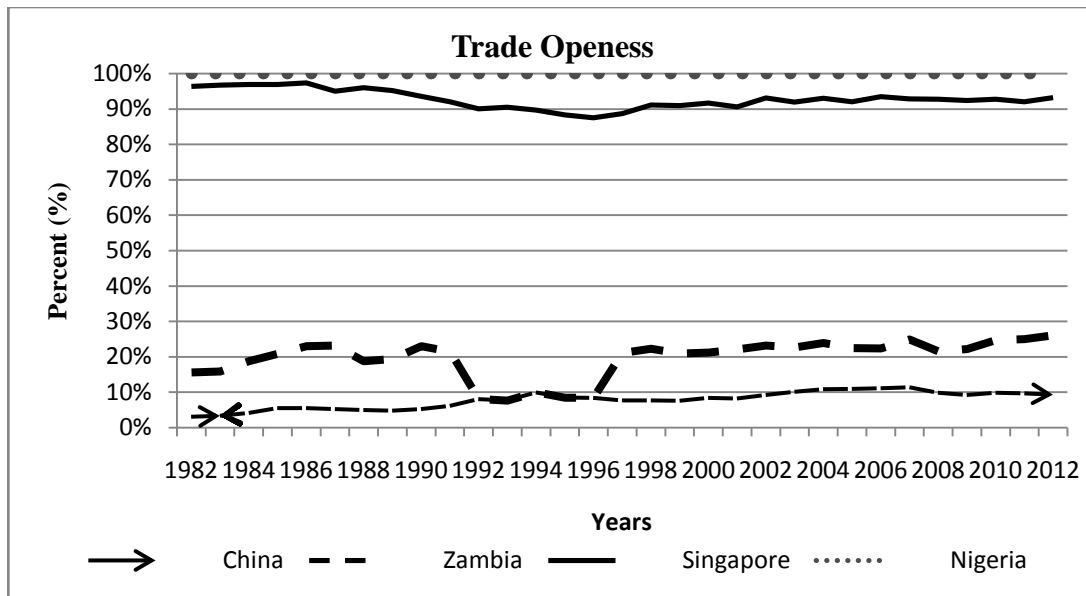


Figure 3.1. Trade Openness: Nigeria, Singapore, Zambia and China (Source: Author using UNCTAD (2016) trade data)

3.2.2 Global Trend of Trade Liberalization

Multilateral and bilateral liberalization since early 1950s has led to significantly lower trade barriers in advanced economies (with average tariff decline from 15%-4% between 1952 and 2005) followed more recently by developing countries [28]. Thus, the decades of rapid growth of world economy has been largely driven by faster rise in international trade. The growth in international trade in turn is the result of both technological developments and concerted efforts to reduce trade barriers which are a function of global production network [28] and [29].

To this effect, integration of countries into the world economy has proven a powerful means for countries to promote economic growth, development and poverty reduction. The resultant integration of the world economy has raised living standards around the world [3]. Most developing countries have shared in this prosperity; in some, income levels have risen dramatically and most notably the Asian Tigers (Hong Kong, Singapore, South Korea and Taiwan), China and India, countries that were once poor prior to their adoption of market-oriented reforms in the 1970s and subsequent integration into the global economy, (International Monetary Fund 2001).

According to the World Trade Organization ([30], page 14), world exports of commercial services in 1995 were US\$ 1,179 billion and swelled significantly to US\$ 2,516 billion in 2005 and US\$ 4,872 billion in 2014. Meanwhile, the same was also true for world merchandise exports which were only US\$ 5,168 billion in 1995 and skyrocketed to US\$ 10,509 billion in 2005 and US\$ 19,002 billion in 2014. The average share of exports and imports of goods and commercial services in world GDP increased significantly from 20 per cent in 1995 to 30 per cent in 2014 (in value terms).

However, the UNCTAD Statistics (2015) shows that, the share of world merchandise exports of developed countries declined from 65% in 1948 to 51% in 2014. While that of developing economies rose from 30% in 1948 to 45% in 2014 nearing that of developed countries. This suggests the massive integration of developing

countries and Emerging Market Economies (EMEs) into the global economic system largely due to the removal of trade barriers [28]. Today's GDP is highly influenced by international trade basically as a result of trade liberalization and globalization of developing countries. It is also important to note that, this global growth in output is associated with a rise in global employment and income to justify the output.

In a measure of GDP accumulated growth, the IMF [31] reported that, China took the lead in the two episodes, 1990-1998 and 1990-2006 by 130% and 330% of GDP accumulated growth respectively suggesting its huge impact on the global scale after trade liberalization barely 12 years later. This was followed by several other countries but notably Ireland, Singapore, India and Hong Kong respectively in the period 1990-2006.

Suffice to say, not all countries are equally represented by this global employment and output. Several case studies by the USAID [22] highlighted the fact that, trade liberalization creates losers as well as winners, and in many cases the losers include substantial numbers of the poor, a large number of which live in developing economies. Developing countries, that are part of the Global Value Chain (GVC) through vertical specialization, are usually at the disadvantage because their contribution is largely that of raw goods. Primary products (especially agricultural) have a low income elasticity of demand, that is, their demand increases disproportionate to the demand for finished products as postulated in the Prebisch-Singer Hypothesis [32].

More so, primary products have a low price elasticity of demand. Changes (decline) in prices upset producers of primary products more than they affect producers of finished products. The fact that most developing countries in Africa, Asia and Latin America export raw materials, such unforeseeable economic factors usually dictate their fate for removing trade barriers (tariffs and non-tariffs which constitute 10-30% of their gross revenue) and subsequent integration in the global economy. In the following subsection, we are going to contextualize the process of trade liberalization in China and Zambia respectively.

3.2.3. Context of Trade Liberalization in China and Zambia

3.2.3.1. China

China is a socialist one-party state in East Asia with the world's largest population of about 1.35 billion with land area of 9,388,211 km² (UNCTAD, 2016). Prior to the adoption of market reforms in 1978, China had been a closed and inward-looking (autarky) economy. Under the influence of an extensive self-reliance principle, China's foreign trade was very limited to the extent that imports only made up for shortages in domestic production, such as essential raw materials and capital goods, while exports were only a means to provide foreign exchange for imports. Consequently, China failed to make full use of foreign trade to accelerate economic development. One of the indicators of such a failure was China's decreasing share in total value of world trade from 1.4% in 1950s to 1.1% in 1960s and 0.8% in 1970s (Li, n.d) [33].

However, in 1978, China unilaterally adopted market-oriented reforms and opened the door to the world. Import tariffs were cut more especially during China's accession to the WTO in 2001. However, firms importing under the ordinary trade regime paid tariffs whereas firms importing under the processing trade regime were exempted from paying tariffs over a period of 30 years (Bas and Strauss-Kahn [34]) as this was expected to initiate industrialization through intensive value addition.

The tariffs and non-tariff reductions were essentially done episodically by liberalization based on the introduction of export incentives which reduced bias against exports, though import restrictions remained the same or even increased on some goods and in the latter period, there was reduction in the level of intervention both in terms of instrument and design. However, the central government still retained some control and ownership in some sectors which were deemed to be sensitive and fundamental to the economy notably the education, transport and the financial sectors among others. In the subsequent chapters, we shall analyse the performance impact of this strategic trade liberalization move. Meanwhile, how did Zambia liberalize?

3.2.3.2. Zambia

Zambia is a lower middle-income country in the southern part of Africa with a population of about 15.721 million and land area of 743,390 kilometres¹⁰. It gained independence from Britain in 1964. Prior to 1968, both government and private sector participated in the economy. However, in 1968, the then first Republican President announced the Mulungushi reforms which began to nationalise all economic activities. This marked the era when its economic model was that of a socialist economy with government stake in most of the key sectors of the economy. In the sixties and seventies, the economy of Zambia grew rapidly as stimulated by government expenditure on infrastructure and services along with investments in import substitution industrialization. It had a remarkable GDP growth rate of 11.4% between 1966 and 1970 [35].

However, in 1991, it multilaterally endorsed market-oriented reforms called Structural Adjustment Policies (SAPs) under the auspices of the World Bank and IMF in response to its falling copper prices on the global market and subsequent economic malaise. These structural reforms included the decontrol of agricultural prices and the liberalization of maize marketing, the decontrol of interest rates, the removal of exchange controls and the floating of the kwacha; the liberalization of the banking sector and the removal of quantitative restrictions on imports and exports, as well as the reduction of the level and dispersion of customs tariffs [2].

It has been reported that, during the process of liberalization, a cumulative number of companies privatized between 1991 and 1998 rose from about 10 to nearly 250 [2] and the Zambian government basically was relieved of much of the ownership but was there as a regulator if not a spectator. While the process of trade liberalization creates both losers and winners depending on which sectors have been liberalized, it can be argued here that, the exercise of privatization was rapidly done without fear or care about which category of people would be hurt in the process and whether or not it constitutes the largest section of the population (USAID [21]; Aguayo-Tellez, [25]). In the latter chapters, we shall give a performance analysis of this growth model. The next subsection gives some insights about the mechanism of trade liberalization on growth.

3.2.4. Mechanism of Trade liberalization on Economic Growth

A study on the impact of trade liberalization on economic growth in Pakistan by Khan, et al [36], shows that, since independence in 1947, various trade policies pursued in Pakistan were marked by level of protection which did not yield stable results. However, later in the 1980s, attempts were made to reduce trade barriers and liberalize the economy through a sharp reduction in import tariffs, removal of most of the non-tariff barriers (NTB's) accompanied by a more stable and favourable macroeconomic policies and external environment with greater availability of credit.

The indicators, right away, did not increase the pace of expansion of trade. Nonetheless, it was found that, trade liberalization can have a positive and beneficial effect on economic growth if supported by appropriate sequencing of prudent macroeconomic policies including good management, integrated and strengthened efforts made by domestic institutions, focused and targeted flow of FDI towards export-oriented industries and services, and improved market access.

Notwithstanding that, in an attempt to investigate the theoretical relation between trade liberalization and growth (measured as growth in real GDP), Bajona [37] concludes that, standard models, including Ricardian models, Heckscher-Ohlin models, monopolistic competition models with homogeneous firms, and monopolistic competition models with heterogeneous firms, predict that opening to trade increases welfare, not necessarily real GDP.

However, in a dynamic model where trade changes the incentives to accumulate factors of production, trade liberalization may lower growth rates even as it increases

¹⁰ <http://unctadstat.unctad.org/CountryProfile/GeneralProfile/en-GB/894/index.html> ; accessed on 2023-04-9.

welfare. To the extent that trade liberalization leads to higher rates of growth in real GDP, it must do so primarily through mechanisms outside of those analysed in standard models. These findings point to the fact that, the mechanism of trade liberalization on economic growth does not follow a smooth path to yield positive results as many people think. It follows a judicious selection and experimental engineering of a number of macro and micro economic instruments to adjust short term effects while modifying long term effects “learning by doing”. In the following subsection, we are going to explore some of the effects of trade liberalization.

3.2.5. Effects of Liberalization

There are numerous effects of trade liberalization on home and foreign economies and these effects are usually country specific because different countries respond to foreign policies differently depending on a number of endogenous and exogenous factors. But for the purposes of this study, we shall dwell on the following;

3.2.5.1. Factor Mobility and Price Equalization

Trade liberalization promotes factor mobility between countries. Factor mobility is the movement of factors of production (i.e. labour and capital) from one region/country to another. Labour moves through emigration or immigration while capital flows through international borrowing and lending. For instance, a high saving country like China helps developing countries in Africa to finance investments¹¹.

Due to free trade in goods and services, factor mobility can lead to factor price equalization in which prices of identical factors of production, such as labour (wage rate) and capital (interest rates), become homogeneous across countries¹². Assuming that technologies are also identical, prices of commodities will also be equalized and there will be less need for trade in commodities. However, absolute substitution of factor trade for commodity trade may be realistic theoretically but not practically. In the subsequent segment, we shall look at its effects on trade volumes and pattern.

3.2.5.2. Trade Volumes and Pattern

Trade liberalization has been accredited to the allocation of resources to the most productive sectors of the economy [38]. This increases production possibility functions of the concerned countries. Increased production also means that a country will trade more in terms of volumes with other countries and this determines the pattern of trade. Bigger economies tend to trade more amongst themselves due to the high level of demand for the differentiated goods and services from each other and much of this trade is intra-industry and is based on economies of scale. Conversely, trade between resource rich countries and developed countries tend to be inter-industry in nature because the former produces primary products while the latter produces finished products. So this trade pattern is based on comparative advantage [7].

In the next subsection, we shall look at effects on the productivity of labour.

3.2.5.3. Labour Productivity

Some studies have shown that, trade liberalization causes the mobility of labour from where it was less efficient to where it is more efficient. For example, a study in Thailand by Akapaiboon [6] discovered that, labour shifted from the agricultural sector into the expanding manufacturing sector after trade liberalization and thus responding to the dual sector model (Lewis model on labour transition from Agrarian to capitalist urban). This is also true for many other developing countries because free market attracts skilled labour force into the economy. What about consumer diversification and satisfaction?

3.2.5.4. Consumer Diversity and Satisfaction

Proponents of free markets have argued that, trade liberalization increases the choices of consumers because they are able to choose from a variety of products that are being traded as opposed to only those being locally produced. This leads to expanded consumer satisfaction and welfare attainment. The fact that no country can have absolute advantage in all goods makes it possible for countries to exchange various goods and services across international borders to better the welfare of people.

While some countries like China need Agro products from Australia, many other developing countries need cheap electronics and cloth from China. But China also cannot produce more of electronics without importing copper from Zambia to be used as conductors in electronics (capacitors, transistors and resistors). Eventually, this network of exchanges in goods and services gives a broader bundle for consumers to choose from. The following subsection gives some insights on productive efficiency.

3.2.5.5. Productive Efficiency

Productive efficiency is a situation where all firms in the economy produce using best practices of management and technology so that an economy can extend its production possibility frontier (PPF) to enhance output. Through trade liberalization, inefficient domestic firms are pruned to remain with those that can withstand external competition leading to a pro-competitive effect. Global firms such as MNCs are at the center of technological and managerial skills transfer from one region to another. These firms only operate in liberal markets. Therefore, trade liberalization is seen to promote the presence of MNCs who in turn revitalize efficiency in productivity and thus scaling up growth [39]. We shall also see the effects of trade liberalization on allocative efficiency in the next subheading.

3.2.5.6. Allocative (Pareto) Efficiency

Trade liberalization has been equally attributed to allocative efficiency where the goods and services produced are a true reflection of consumer preferences. This causes the marginal benefit of a good or service to consumers equal the marginal cost of producing it and this has been charged to prevent deadweight losses in the economy in which more is produced than the demanded

11 <http://www.bbc.com/news/world-africa-35005048>; accessed on 2023-04-9.

12 <http://www2.econ.iastate.edu/classes/econ355/choi/mob.htm>; accessed on 2023-04-9.

quantities from the consumers [40]. Therefore, since trade liberalization allocates resources efficiently, it follows that, allocative efficiency shall be attained as a result and a point of equilibrium where demand equals supply of goods and services shall be the ultimate goal of players in the economy. However, this requires sound management and a strong fiscal and monetary regulatory framework. What about on capital formation and accumulation?

3.2.5.7. Capital Formation and Accumulation

The fact that trade liberalization promotes factor mobility and productivity, it follows that, capital flows to where it is needed for investments through FDI or domestic investment. This leads to net additions to capital stock in such things as intermediate goods, equipment, buildings and financial assets which ultimately give birth to capital formation. A combination of capital stock with labour is essential for the production of goods and services and the realization of profits in the economy¹³. When profits are realized from the invested capital, there can be further reinvestments and savings until a point where capital accumulates thus justifying the Horrod-Domor model. Capital formation and accumulation can lead to high productivity, growth and a rise in national income. In the next section, we further look at an instrument of liberalization.

3.3. Privatization

Most developing countries that embarked on the development trajectory of trade liberalization undertook privatization either unilaterally as a country's own policy framework or multilaterally with auspices from world institutions such as IMF and World Bank [2]. Privatization is the process through which governments transfer control and ownership of most productive sectors of the economy to the private individuals and firms. Absolute privatization means full loss of ownership of most previously government owned enterprises.

While partial privatization means moderate loss of ownership of previously government owned companies with the government still exercising control and ownership of some key sectors of the economy [41]. The fact that this process is associated with stiff foreign competition on local firms, adverse effects of privatization in developing countries are usually acute when a government undertakes absolute privatization when the economy has weaker institutions to withstand the pressures from external competition. Below are some insights about the effects of privatization.

3.3.1. Effects of Privatization

Like liberalization, the effects of privatization on domestic economies are felt at varying intensities depending on a number of macro and micro dynamics within an economy. In this study, we shall look at the following:

3.3.1.1. Domestic Employment

Privatisation impacts domestic employment differently depending on local labour policies. In some cases,

privatization creates competitive jobs demanding highly trained labour force especially in the export manufacturing industry [24]. This makes the skilled workers well off and the unskilled workers worse off. However, with good labour policies, privatization helps to engage all the labour force (both skilled and unskilled) into production at various stages of production through forward and backward synergies thus leading to domestic employment. What about on wages and labour supply?

3.3.1.2. Wages and Labour Supply

Wages are affected by privatization in that; the workers lose bargaining power in the hands of capitalist firms especially in the labour abundant developing countries [3]. Needless to say, wages in the private sector are largely determined by the labour supply on the market. On the other hand, Akapaiboon [6] states that, labour supply shifted from agriculture to the manufacturing sector in Thailand and Ferreira [24] found a reduction in wage inequality in Brazil as a result. Often, if skilled labour is compromised by private firms in developing countries due to weak labour policies, chances of it shifting to high wage countries are high in a liberal economy hence the brain drain in developing countries. In the next subsection, we shall look at effects on relative prices.

3.3.1.3. Relative Prices

Privatisation impinges on prices through the effect of price transfers by foreign firms. Most MNCs take home prices of their goods and services in the foreign markets and these influences the relative prices of goods and services in the local markets either in form of factor price equalization or price distortions [10]. Moreover, relative prices will basically be determined by the cost of production but mainly goods and services tend to be sold above marginal production cost by profit seeking private firms. How does privatization influence FDI?

3.3.1.4. FDI

Many studies have shown that, privatization have positive effects on the flow and contribution of FDI to overall growth of the economy. For example Dava [17] showed that there was a mean increase in the flow of inward FDI in selected SADC countries to take up investment ventures. Many foreign firms have seized markets in the overseers and often partnered with local firms [20]. Privatization creates an atmosphere for the influx of foreign investors to look for opportunities more especially Multinational Corporations (MNCs). However, most of these foreign firms tend to exploit local labour force especially in countries with weak reinforcement of labour laws. The following segment gives an evaluation on the environment.

3.3.1.5. Environment

The environment is usually messed up with pollution and degradation due to privatization. Industrial fumes and poor waste management causes the environment to be compromised especially in countries with poor environmental protection laws.

Most developing countries in Africa especially Zambia have encountered serious repercussion on the environment

¹³ <http://www.investopedia.com/terms/c/capital-formation.asp?o=40186&l=dir&qsrc=999&qo=investopediaSiteSearch;> accessed on 2023-04-9.

due to privatization of state-owned firms because private firms seem to care less about mankind but their returns from investments. A study by Zafar et al [42] in Pakistan confirms that, as economies evolve in industrialization process, the environment is usually compromised and degraded. However, Damania et al [43] found that, free markets raise the stringency of environmental policy but that corruption reduces environmental policy stringency.

The issues of corruption are rampant in developing countries like Zambia and hence the compromise on environmental regulation and subsequent environmental degradation. We further examine the effects of globalization on a number of indicators in the economy as a consequence of liberalization.

3.4. Globalization and Its Effects

The effects of globalization in developing countries are quite intricate in as much as they are noticeable. For the purposes of this study, we shall focus on those that influence international trade as follows;

3.4.1. Value Chain and Trade Flows

Globalization has created a network of value chain in which different countries specialize in the production of goods in which they have a comparative advantage [29]. For instance, capital abundant countries like the European Union and the United States have essentially focused on the production of capital intensive hi tech goods such as machinery, automobiles and airbuses while resource abundant countries in Africa and Latin America have specialized in the production of raw materials. Consequently, this has influenced the flow of trade among countries. Markets have been expanded through the integration of resource rich developing economies into the global value chain system.

As a result, most previously inaccessible markets are now accessible. Goods and services are being traded faster and efficiently among integrated (liberalized) economies world over. The accessibility of some foreign markets has scaled up production by developed countries like Japan in which the domestic market has been saturated due to lack of internal demand for trade with emerging economies in Africa and Latin America in which the markets are less saturated.

Although this makes concerned economies well off, the fear is that, least developed countries may end up being in a continuous down-stream of this value chain system and end up being suppliers of raw material given the highly protected technology by developed countries in the Trade-Related Aspects of Intellectual Property Rights (TRIPS) of the WTO Uruguay round of GATT (1994) which places high immunity to developed countries for their technical know-how. We further look at technological transfer in the beneath segment.

3.4.2. Technological Transfer

There has been remarkable exchange of technology between developed and developing countries due to globalization. This technology has expanded production frontiers of most developing countries especially in Africa, Asia and Latin America through 'reverse engineering

effect'. Most notably to the countries whose economies have been liberalized for international trade.

For instance, the use of technical equipment in production has been crucial for the growth of developing countries. Hwang et al [44] shows that integration of countries into the global system as a result of trade liberalization have a positive effect on the foreign firm's Research and Development (R&D), resulting in a better technology to be transferred to the domestic firm and enhancing both the domestic and the world welfare. How about communication networks?

3.4.3. Communication Networks

Globalization has revamped communication networks across international borders through the use of telecommunication satellites. Computers, mobile phones and the internet are now used not only for communication but for international trade as well. This has speeded up transactions and reduced costs of goods and services from one point to another. The use of social media such as Facebook, twitter, etc. has increased the demand for goods and services across the globe because it has become easier to market, distribute and purchase goods from one point to another.

India's Information and Communication (ICT) sector is one of the most liberalized in India and so it is more competitive and globally sourced by foreign firms for managerial services and call centres in other countries. Where domestic communication systems have been incompetent, liberalization and globalization have paved way for foreign firms with new best practices [45]. For example, MTN from South Africa and Airtel from India came in to mitigate the inefficiencies of a Zambian owned Zamtel in the communication sector in Zambia. In the next subheading, we give some insights on transportation cost of goods and services.

3.4.4. Transportation Cost of Goods and Services

One of the notable effects of globalization on transport is the reduction of transportation cost of goods and services from producers to the consumers. The cost of transporting a good is one of the major determinants of prices in an economy. To this end, innovations to reduce distance across borders have not only remarkably reduced prices of goods and services in developing countries but also led to the scale effect ([29], page 240).

Due to reduced transportation cost, the role of international trade in economic development has become fundamental in the recent decades. For instance, the use of rails, aeroplanes, shipping etc. has linked places which were never accessible before due to geographical barriers. The fact that resources and goods are not always with the populations that desire them, and so global transportation services are needed and economically justified if consumer demand is great enough [46]. We further look at skills and labour migration in the next subsection.

3.4.5. Skills and Labour Migration

An account of globalization highlights that, labour is able to move freely from one point to another among countries that are open to each other in the world. For

example, we have European and Chinese people working in Africa because their skills are highly demanded there. Similarly, we have many African people in almost most parts of the world in employment. This is a sign that globalization has positive effects on skills and labour migration to a larger extent. However, only skilled labour tends to be mobile. The majority of the unskilled work force tends to be immobile and irresponsive to global demand of labour. Globalization also influences culture and consumer choices as shown in the next subheading.

3.4.6. Culture and Consumer Choices

Globalization has promoted the exchange of cultures among countries in the world. This familiarity of cultures has also increased the demand for various goods and services which were initially cultural specific before globalization. Many people in the world have preferred foreign clothes, foods and many others because the cultures are being shared through the internet and what people see and watch daily on the media makes them know much about the life styles of other people in the world. Now, let us also probe further into the weaknesses and strengths of trade liberalization within the context of developing countries in the next section.

3.5. Strengths and Weaknesses of Trade Liberalization

The competitiveness of a policy ought to be analysed in terms of its various strengths and weaknesses by virtue of its implementation. This is especially important in strategically planning to adjust and mitigate some of the weaknesses while taking advantage of its strengths to yield robust results. Like any other economic policy, trade liberalization regime has benefited many countries but at the same time cursing others. This means that, this regime is a double-barreled phenomenon which ought to be looked at carefully before implementation. Often times, countries that end up being cursed usually fail to assess potential risks against opportunities to help them strategically plan and manage the process of implementation. In the table below, we demonstrate some of the strengths and weaknesses associated with trade liberalization in developing countries;

To wrap up the chapter, we have analysed the symbiotic relationship that exists between trade liberalization, privatization and globalization. We have acknowledged the fact that, each one of them acts as a catalyst to the other and that one cannot exist in the absence of the other. To liberalize trade means to reduce or completely remove barriers to trade. When barriers are removed, the economy becomes integrated and private operations take effect and economic operations go beyond borders. In the next chapter, we shall present descriptive

statistics about the impact of trade liberalization in China and Zambia. In doing so, we shall begin to answer the questions as to whether trade liberalization is a curse or blessing for developing countries putting China and Zambia into perspective.

Table 3.1. Strengths and weaknesses of Trade Liberalization

Strengths	Weaknesses
1. Effective use of resources (raw materials)	1. Weak domestic firms die out due to stiff external competition
2. Chance for developing countries to finance further investments	2. Brain drain (loss of educated labour force to industrialized countries)
3. Economies of scale & comparative advantage	3. Environmental concerns and pollution
4. Capital and technological flow	4. Financial contagion (vulnerable to global economic conditions)
5. Lower prices & living costs arising from lower opportunity cost of production	5. Places developing countries on the down-stream supply chain of raw materials
6. Consumer diversity	6. Dependence syndrome
7. Economic interdependence	7. Highly sensitive, complex & difficult to apply
8. Strong international relations in development	8. Political regimes become compromised

Source: Author's compilation.

4. Curse or Blessing? Impact of Trade Liberalization on China and Zambia: Comparative Analysis

This section unfolds with a comparative analysis of how trade liberalization impacted China and Zambia after their respective market reforms using descriptive statistics. Although the two countries had liberalized their economies at separate times, performance and impact can be traced and compared. The chapter compares the following basic indicators; GDP, real GDP growth, GDP per capita, GDP per capita growth, GNI per capita, total merchandise trade and share, performance in technology, export structure to world trade, share of manufactures to merchandise exports, natural resource contribution to the economy, labour force participation and income (PPP \$1.25/day) respectively. Thereafter, we shall give a brief comparative analysis of the results towards the end of the chapter.

4.1. Impact on Economic Performance

4.1.1. GDP

GDP is the measure of a country's aggregate output in goods and services in a period of one year. It gives an indication of how effective a country uses its factors of production (land, labour and capital) [47]. The table below compares economic output of China and Zambia;

Table 4.1.1. GDP current PPP, \$US billion

	1980	1985	1990	1995	2000	2005	2010	2015	Total
Zambia	8.0	10.6	13.3	13.6	17.6	26.7	44.7	64.6	199.1
China	305.2	654.6	1,115.3	2,244.6	3,685.0	6,593.0	12,357.0	19,510.0	46,764.7

Source: Author using IMF World Economic Outlook (2015) Data set.

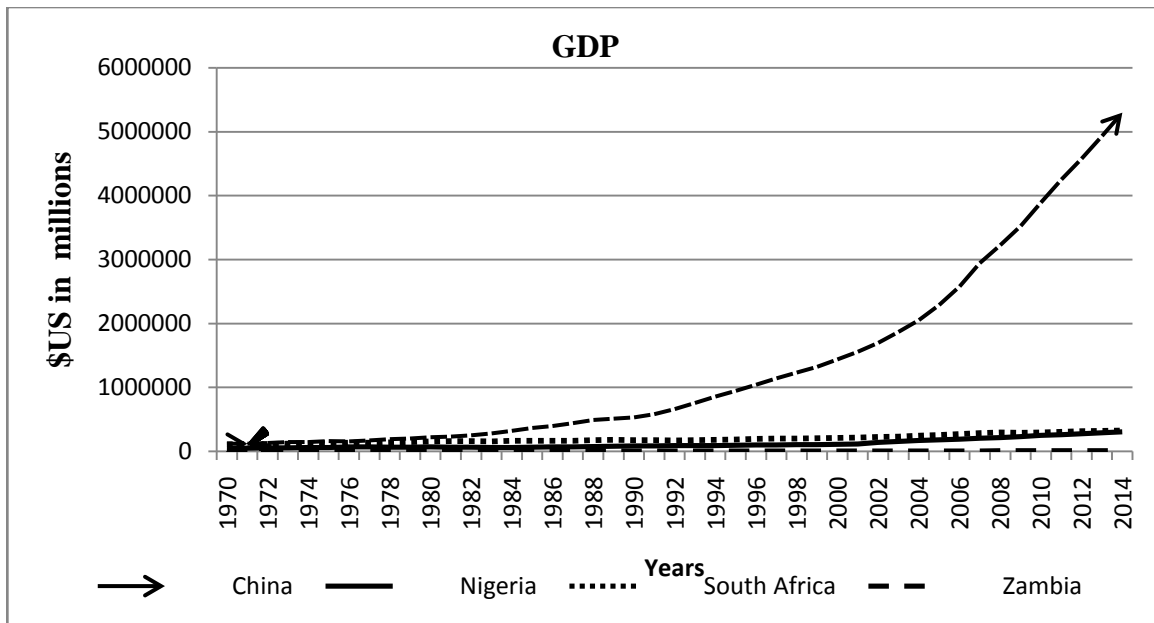


Figure 4.1.1. GDP at \$US constant prices (2005) and constant exchange rates (2005) in millions (Source: Author using UNCTAD (2016) statistics. <http://unctadstat.unctad.org>)

There are two things to note from the table above in terms of the performances of these two countries; for China, almost 10 years after trade liberalization (that is in 1990), the value of its GDP current was \$US, 115.3 billion, while for Zambia, nearly 10 years after its trade liberalization (that is 2000), it only had \$US 17.6 billion. Again, by 2015, China had recorded \$US 19,510.0 billion while Zambia had only \$US 64.6 billion showing that, Zambia under performed. These discrepancies in output are evident that, even if the two countries had liberalised their economies, performance is not the same.

From the extent of trade openness we found that, Zambia is more open than China. Can we then say that the more open an economy is the poorer it performs? The answer is 'no' because, evidence from the Asian tigers shows that, they are even more open to trade than Zambia using trade openness ratios with Singapore 359 and Hong Kong 433 compared to Zambia 94 as of 2014¹⁴, yet these countries have high value of GDP and experienced rapid economic growth. In the graph below, we further compare the trend in economic output among four developing countries namely; China, Zambia, Nigeria and South Africa from 1970 to 2014 and see the position of Zambia and China.

It is evident from the graph above that, after trade liberalization in 1991, the output of Zambia has been positive though not significant compared to that of China in the same timeframe. If we trace these two countries within an interval of 10 years from their respective launch of market reforms, we shall notice the following: for Zambia, the GDP rose from \$US 5,307.5 million in 1991 to \$US 5,952.4 million in 2001 recording an increment of only US\$ 644.9 million in a decade. However, in another 10 years after 2001, it doubled from \$US 5,952.4 million in 2001 to \$US 10,469.5 million in 2011. This literally means that, it took Zambia 20 years to double its initial economic output after trade liberalization (i.e. \$US

5,307.5 million in 1991 to \$US 10,469.5 million in 2011).

What about the case of China? At the time of market reforms in 1978, the economic size of China was \$US 188,955.55 million. A decade later, it doubled to \$US 492,609.86 million in 1988 and further sharply expanded to \$US 1,230,538.17 million in 1998. This means that, in two decades period after trade liberalization, China was able to grow its initial GDP by nearly 6 times (i.e. from \$US 188,955.55 million in 1978 to \$US 1,230,538.17 million in 1998). In 2013, China had \$US 4,930,686.9 million while Zambia had \$US 11,965.9 quite below South Africa and Nigeria.

What then could have hampered the economic output of Zambia and other African countries shown in the figure above relative to that of China? It is because China had liberalized its economy earlier than Zambia? Absolutely not because China is younger than the Asian tigers in trade liberalization regime yet became the second largest economy in the world overtaking Japan¹⁵. So, the period a country has taken in trade liberalization has no guarantee for higher economic output, instead, a balanced combination of various macroeconomic instruments determines how efficient the factors of production (land, labour and capital) will be. The next subsection compares trends in real GDP growth for China and Zambia.

4.1.2. Real GDP Growth

Real GDP growth is the annual rate of growth of all goods and services produced in an economy adjusted for inflation. World Bank (2016) statistics shows that, at the time of trade liberalization in 1991, the GDP real growth for Zambia was -0.04%. Ten years later (2001) it rose to 5.3% and in 2011 (two decades later), it slightly rose to 6.3% plummeted to 4.3% in 2015. Generally, based on these figures, Zambia's real GDP growth in the two decades of trade reforms (1991-2011) was 3.8% on average. The graph below shows this trend [48];

14 <http://unctadstat.unctad.org/CountryProfile/GeneralProfile/en-GB/702/index.html>; accessed on 2023-04-9.

15 <http://www.bbc.com/news/business-12427321>; accessed on 2023-04-9.

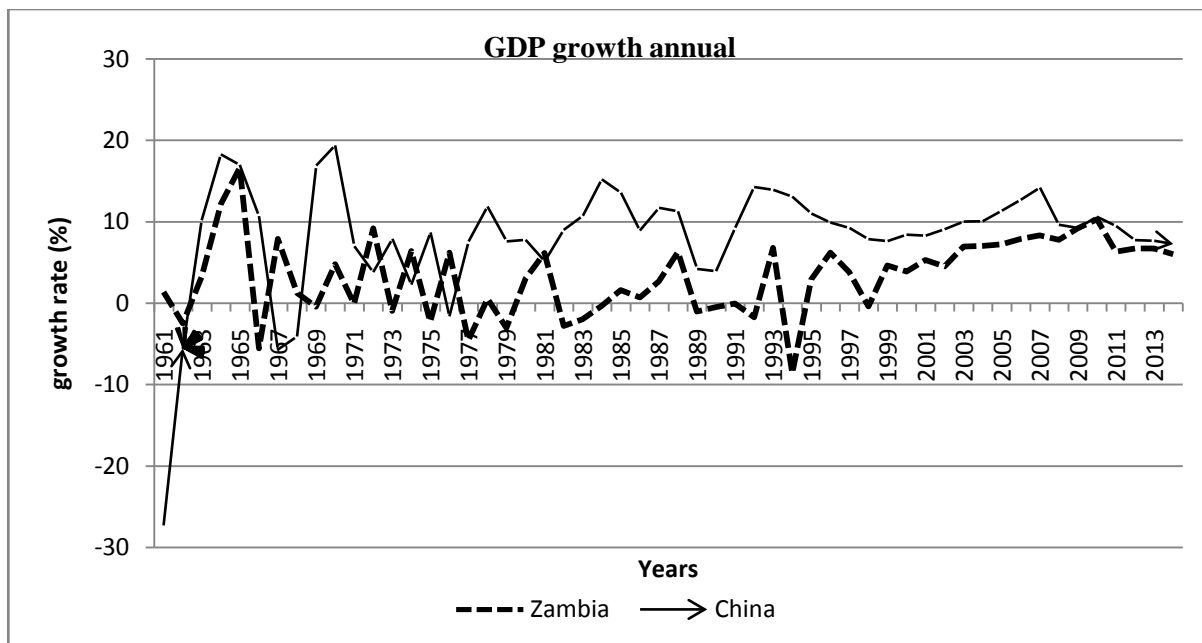


Figure 4.1.2. Real GDP Growth Annual % (1961-2013) (Source: Author using World Development Indicators (2016) data, <http://data.worldbank.org>)

By the same token, China's real GDP growth was 11.8% at the time of trade liberalization in 1978. A decade later (1988), it slightly reduced to 11.3% and further declined to 7.8% in 1998. As of 2014, it had 7.2%. However, in average terms, China's real GDP growth in two decades after trade liberalization (1978-1998) was 10.3%.

The question is why did Zambia grow at an average of 3.8% when China grew at 10.3% in the same time frame? The answer to this question is suggestive that, not all countries benefit from trade liberalization at the same level. In the next subsection, we further exhibit the trends in GDP/capita for China and Zambia.

4.1.3. GDP Per Capita

To capture the average economic entitlement of individuals in the economy, GDP per capita is invariably used. It is the total monetary value of all goods and services produced in an economy for one year divided by the population of the country for that year¹⁶. This study shows that, after market reforms, there was a considerable positive impact on GDP/capita for China with a rise from \$US 197 in 1978 to \$US 972 in 1998 (two decades later). As of 2014, China's per capita GDP was at \$US 3,799.4 which is a massive blessing. On the other hand, Zambia's GDP per capita had been declining from 1970 to 1991 and picked up soon after trade liberalization in which it grew from \$US 660 in 1991 to \$US 767 in 2011 (that is two decades after trade liberalization) suggesting a very minimal rise compared to China. As of 2014, Zambia's GDP/capita was at \$US 848.39. The figure below shows this trend;

A number of factors influence GDP/capita but notably productivity of the economy in terms of GDP output. China's output has been doubling in size over a period of three decades after market reforms and hence its

subsequent rise in per capita GDP while Zambia's GDP output has been fluctuating. Another factor deals with population growth. Zambia's population has been growing disproportionate to the growth of the economy and hence affecting the per capita GDP. Meanwhile, China's population has been growing at a pace slower than economic growth hence the faster growth in per capita GDP. The next subsection further compares trends in the GDP per capita growth for the countries in question.

4.1.4. GDP Per Capita Growth

Growth in GDP must also reflect in GDP/capita growth. GDP/capita growth is the annual percentage growth rate of GDP per capita based on constant 2005 U.S. dollars¹⁷. This would mean that, so many people are benefiting from the growth. According to the findings of this study, at the time of trade liberalization in 1978, China's GDP per capita growth was 10.4%. It reduced to 9.5% ten years later (1988) and further dropped to 6.8% in 1998 (two decades later). As of 2014, it was at 6.7%. In the two decades of market reforms (1978-1998), China's GDP/capita grew at 8.9% on average. The graph below shows this trend;

Contrariwise, at the time of market restructuring in 1991, Zambia's GDP per capita growth was at -2.6% and it rose to 2.6% in 2001 (that is ten years later). It further rose to 3.2% two decades later in 2011. As of 2014, it reduced to 2.8%. From the foregoing therefore, Zambia's GDP/capita grew at 1.1% on average in the two decades of trade liberalization (1991-2011). This suggests that, there was a positive impact on GDP/capita growth in both countries as a result of trade liberalization but more considerably for China. We further look at GNI per capita as another indicator of economic performance in the next subsection.

16 <http://data.worldbank.org/indicator/ny.gdp.pcap.cd>; accessed 2023-04-9.

17 <http://data.worldbank.org/indicator/ny.gdp.pcap.kd.zg>; accessed on 2023-04-9.

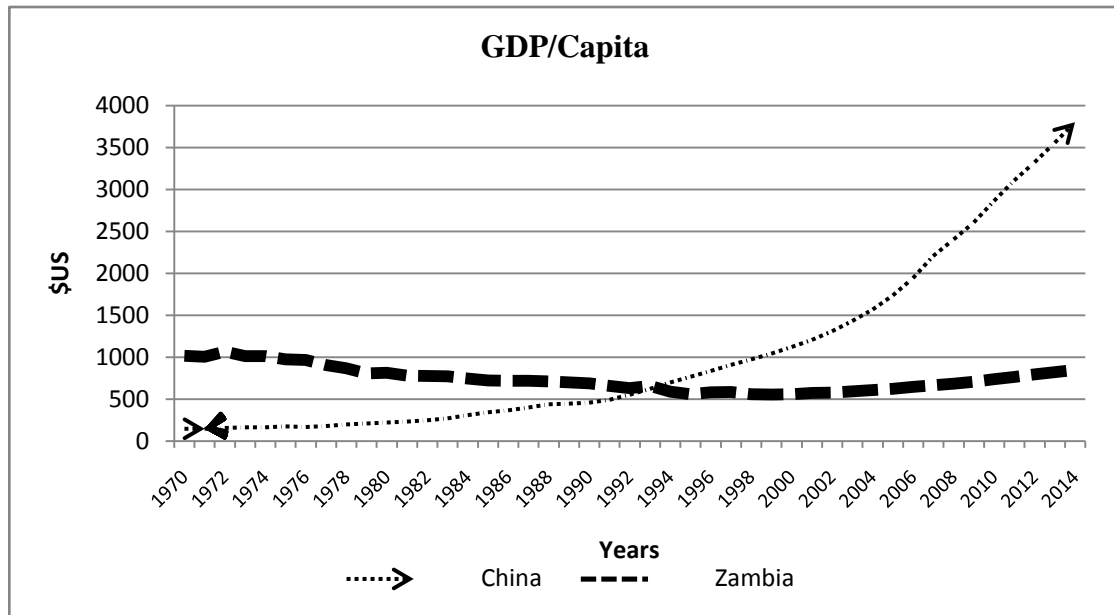


Figure 4.1.3. GDP per capita, \$US at constant prices (2005) and constant exchange rates (Source: Author using World Development Indicators (2016) data, <http://data.worldbank.org>)

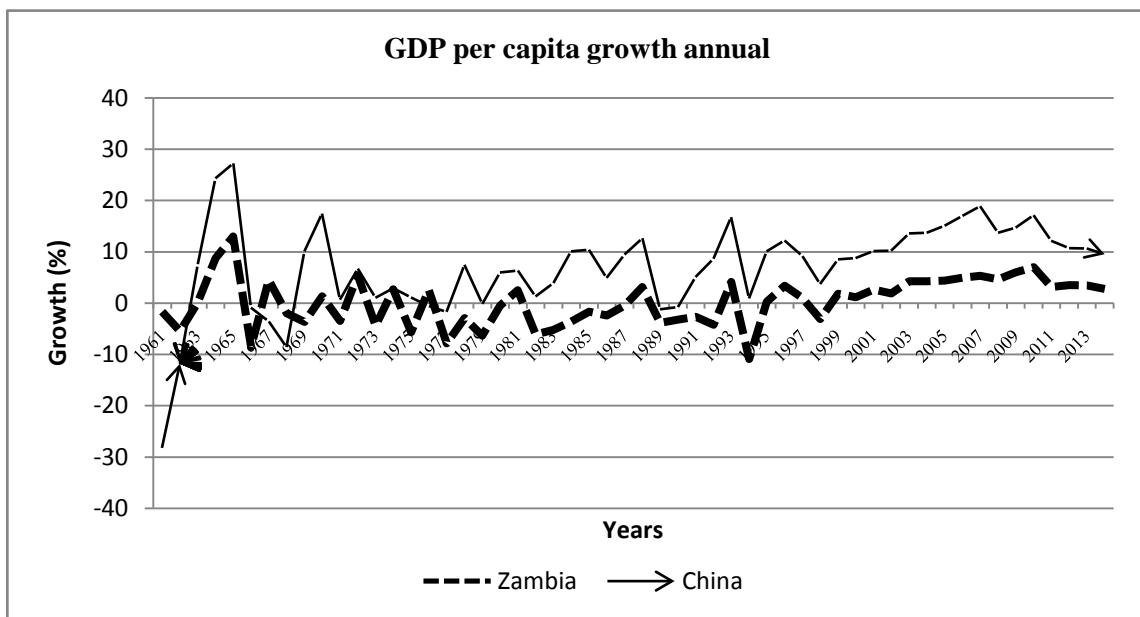


Figure 4.1.4. GDP/capita growth, annual % (Source: Author using World Development Indicators (2016) data, <http://data.worldbank.org>)

4.1.5. Gross National Income (GNI) per capita

GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income from abroad. Therefore, GNI per capita is GNI, converted to U.S. dollars using the World Bank Atlas method¹⁸, divided by the midyear population¹⁹. Unlike GDP and GDP/capita, GNI is a good measure of a country's capacity to produce because it discounts economic activities and factor incomes contributed by non-residents (foreigners) of a country.

Equally, GNI/capita has been proved to be a useful and easily available indicator that is closely correlated with other, nonmonetary measures of the quality of life, such as life expectancy at birth, mortality rates of children, and enrolment rates in school²⁰. To this effect, this indicator shall complement income PPP \$1.25/day (see table 4.1.4) in the determination of the welfare effect of trade liberalization in this paper. In the figure below, we compare the GNI per capita for Zambia, China and three other developing countries;

18 Atlas method is used by the World Bank in conversions to reduce the impact of exchange rate fluctuations in the cross-country comparison of national incomes
 19 <http://data.worldbank.org/indicator/ny.gnp.pcap.cd>; accessed on 2023-04-9.

20 <https://datahelpdesk.worldbank.org/knowledgebase/articles/378831-why-use-gni-per-capita-to-classify-economies-into> ; accessed on 2016-05-29 07:24 AM

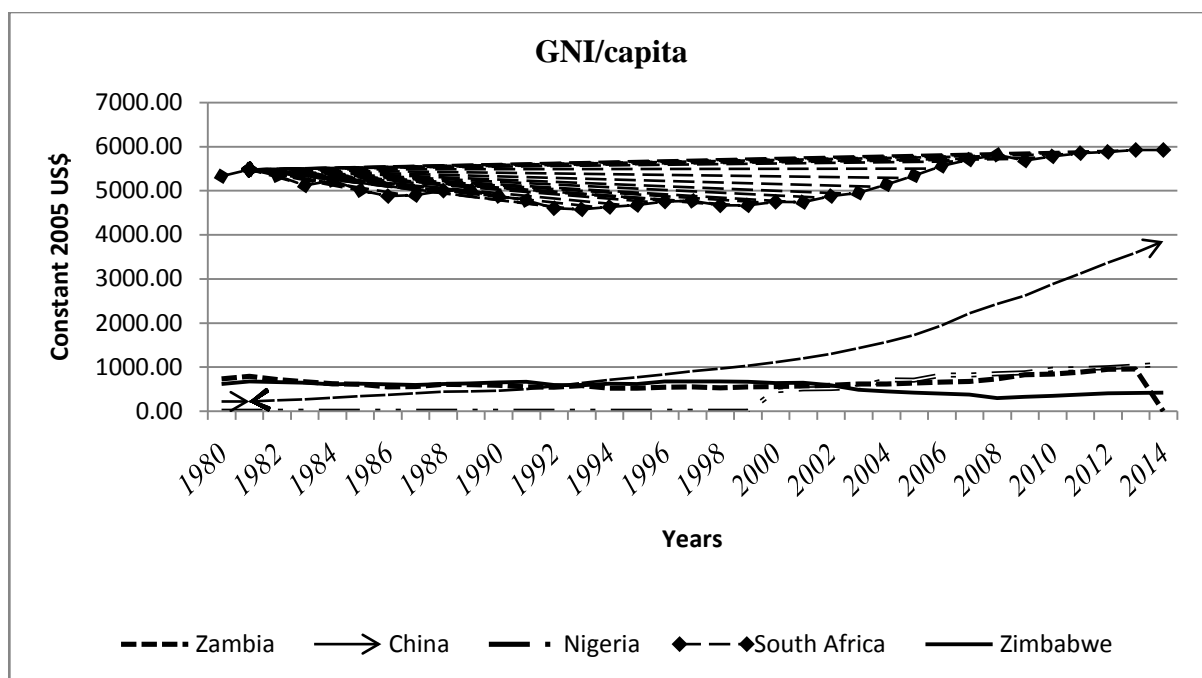


Figure 4.1.5. GNI per capita (constant 2005 \$USD) (Source: Author using World Development Indicators (2016) data, <http://data.worldbank.org/>)

Evidence from the figure above suggests that, the GNI/capita for Zambia and other developing countries like Nigeria and Zimbabwe is still quite lower than that of China. China's GNI/capita has been constantly rising from \$220 in 1980 to \$1,114 in 2000 in almost two decades after trade liberalization.

And as of 2014, it rose to \$ 3,852. Although Zambia's GNI/capita equally increased from \$554 in 1991 to \$970 in 2011 two decades after trade liberalization and reduced to \$956 in 2012, the benefits do not seem to be equivalent to that reaped by China. However, South Africa has a higher GNI/capita than all the countries compared with in the figure. It means that South Africa was blessed in this aspect. What about performance in total merchandise trade and share after trade liberalization?

4.1.6. Total Merchandise Trade and Share

Goods which add to or subtract from the stock of material resources of a country by entering (imports) or leaving (exports) its economic territory constitute merchandise trade²¹. The contribution of a country's merchandise trade to the world market reflects the productive capacity of the economy. To this effect, China's share to world exports rose from 0.8% in 1978 to 1.7% in 1988 (that is a decade after trade liberalization). Likewise, it further increased to 3.3% in 1998 (two decades into a free market regime). As of 2015, China scooped 13.8% share of world merchandise exports. This can be illustrated in the figure below as we draw a comparison with Zambia, South Africa and Nigeria;

Conversely, Zambia's share of merchandise exports to the world declined from 0.03% in 1991 to 0.02% in 2001 (a decade after trade liberalization). Two decades later, its share only amounted to 0.05% in 2011, suggesting a very minimal contribution in 20 years of free market operation. As of 2015, its share merely reduced to 0.04%, thus

showing lack of significant improvement in world export contribution after trade reforms. This was also true for other developing countries like South Africa and Nigeria which are far below China's share with South Africa experiencing constant deceleration from 1.9% in 1948 to 0.4% in 2015. The next subsection delves into technological performance.

4.1.7. Performance in Technology

Many studies have shown that, trade liberalization promote the transfer of technology which is key to the transformation of an economy from primitive modes of production to industrial techniques of production. This takes place through technological spill-over effect often times hyphenated by 'reverse engineering' where local firms imitate the technology that comes with imported products ([29], page 164). This enables developing countries to catch-up with developed countries by enabling them export more of manufactured products than primary products over time.

From the foregoing, what we see is an absolutely conflicting scenario between China and Zambia in the graph below. Two decades into market reforms (that is 1998), its high technology share to manufactured exports had risen to 15.3% notably from a 6% in 1992 and as of 2005, it reached a climax of 30% before it decreased to 26% in 2013 as shown in the graph below;

On the contrary, Zambia's high technology exports were 0.14% in 2001, a decade after market reforms. Characterised by unstable growth, it only increased once above China's, in 1997 recording a 25% share and sharply dropped to almost 1% average for at least 10 years (2000-2010) and rose once again to 24.89% coinciding with that of China in 2011 and decelerated down to 2.3% in 2013. This is the very fact why most developing countries in Africa have failed to industrialise. Their level of technology absorption is quite low as evident from the case of Zambia in the graph above. In the next subsection, we look at the type of exports they trade in.

²¹ <https://stats.oecd.org/glossary/detail.asp?ID=6174>; accessed on 2016-05-21 04:27:41 AM

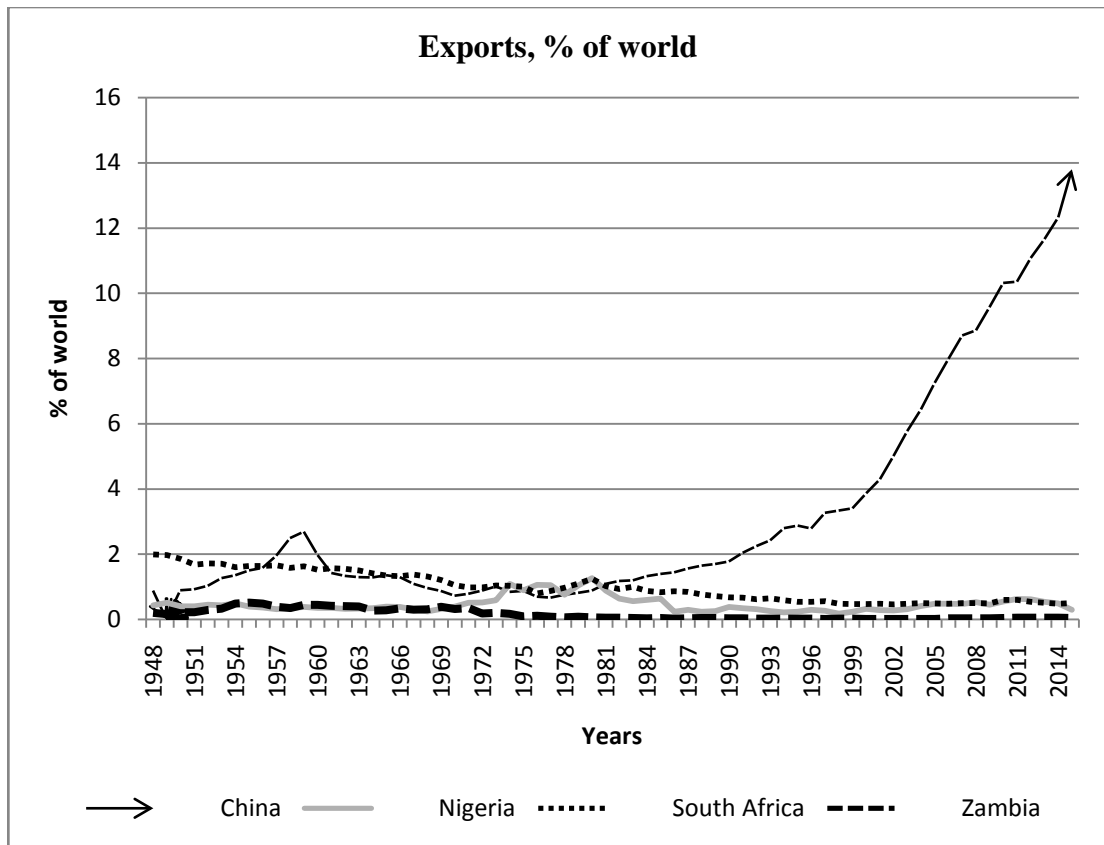


Figure 4.1.6. Exports, % of total world, annual, 1948-2015 (Source: Author using UNCTAD (2016) data, <http://unctadstat.unctad.org>)

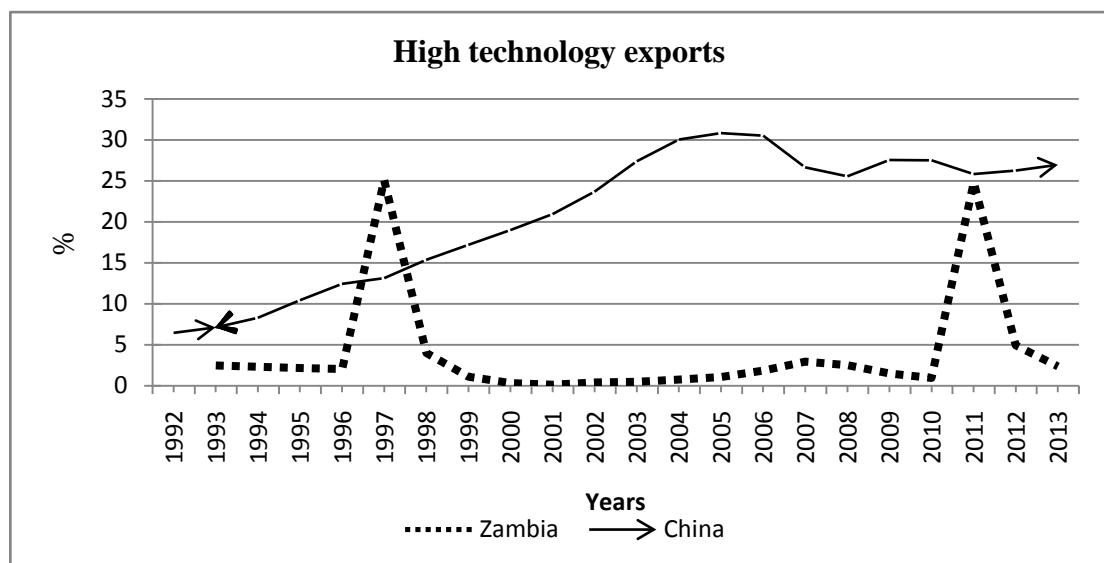


Figure 4.1.7. High technology²² exports (% of manufactured exports) (Source: Author using World Development Indicators (2016) data, <http://data.worldbank.org>)

4.1.8. Export structure to world trade

In the Heckscher-Ohlin model, a country will export goods in which it has relative abundance. Although this fact stands out to be true, the income elasticity of demand argument also points to the fact that, the type of products a country exports on the global market usually determines its gains from international trade due to its responsiveness to income changes. Unrefined agricultural products, for example, have a lower income elasticity of demand than refined agricultural products. Further, the former have a shorter longevity than the latter when subjected to the same environmental conditions²³. In the table below, we compare the nature of exports among a few developing countries from Africa, Asia and Latin America;

²² High technology refers to the most cutting-edge kind of techniques of production at the time, locally crafted or imported. high tech products include computers and intermediate goods such as machinery used in production

²³ Primary products, especially agricultural, are more perishable in nature than manufactured products

Table 4.1.2. Export structure, Concentration & Diversification Indices in 2014

Country	Product Group	% of total exports	Concentration Index (HHI) ²⁴	Diversification Index ²⁵	Top three trade partners (exports \$US millions) (descending order in value)
China	Manufactured goods	94	0.101	0.450	USA, Hong Kong and Japan
Singapore	Manufactured goods	76	0.250	0.500	China ^{26*} , Malaysia and Hong Kong
South Korea	Manufactured goods	87	0.148	0.458	China*, U.S and Japan
India	Manufactured goods	55	0.175	0.497	U.S, UAE and China*
South Africa	Manufactured goods	44	0.119	0.524	China*, U.S and Japan
Mexico	Manufactures	79	0.131	0.408	U.S., Canada and China*
Zambia	Ores and metals	67	0.612	0.859	China*, Switzerland, Congo D.R.
Nigeria	Fuels	94	0.758	0.812	India, Brazil and Spain
Angola	Fuels	98	0.958	0.835	China*, India and U.S
Algeria	Fuels	97	0.490	0.743	Spain, Italy and France
Malawi	All food items	75	0.482	0.809	Canada, Zimbabwe and South Africa
Chad	Fuels	94	0.905	0.816	U.S, Japan and China*
Libya	Fuels	95	0.765	0.782	Italy, France and Germany
Congo D.R.	Ores and metals	77	0.400	0.800	China*, Zambia and Italy
Ethiopia	All food items	68	0.313	0.762	Somalia, China and Saud Arabia
Equatorial Guinea	Fuels	94	0.698	0.737	China*, U.K and Singapore
Tanzania	All food items	47	0.180	0.794	India, China*, Congo
Zimbabwe	All food items	44	0.312	0.819	China*, South Africa, Congo D.R.
Chile	Ores and metals	56	0.334	0.741	China*, U.S and Japan
Peru	Ores and Metals	39	0.227	0.718	China*, U.S. and Netherlands
Russia	Fuels	71	0.370	0.620	Switzerland, U.K and China*
Madagascar	Ores & metals	32	0.253	0.792	France, U.S and Belgium
Kenya	All food items	41	0.194	0.642	Uganda, U.S and Netherlands
World	-	-	0.079	0.00	-

Source: Author's compilation using data from UNCTAD (2016), <http://unctadstat.unctad.org>

Note: HHI=: 0→1= exports highly concentrated on a single product. Diversification Index: 0 → 1= exports are less diversified. Therefore, Zambia's exports are highly concentrated on fewer products (ores and metals) and less diversified than China.

From the table above, it is evident that most developing countries still specialize in the production and export of primary commodities. Take for example countries like Angola with 98% and Nigeria with 94% of their top exports coming from fuels, what this means is that, when fuel prices drop on the world market, their economies also parks down tools (collapses).

This is equally the case for Zambia with 67% of top exports coming from ores and metals which is at variant with China's 94% of top exports coming from manufacturing industry. When copper prices plummeted in the last months of 2015, following China's slowdown in growth, the Zambian economy was badly hit by this development. This was due to the high concentration of exports on a single product (Copper) coupled with greater divergence of exports from world pattern (see 2014 HHI and diversification indices in table 4.1.2 above). One interesting element is that, although China ranked second in Copper world production in 2014 as we can see in the table below, it did not export ores and metals in their raw form as Zambia did. The table compares the share of raw materials (Copper) for Zambia, China and other countries;

Table 4.1.3. Top World Copper producers in 2014 (thousand tonnes)²⁷

Country	Chile	China	Peru	U.S.A	D.R.Congo	Australia	Russia	Zambia	Canada	Mexico	World
Share (%)	31.1	9.5	7.5	7.4	5.6	5.2	4.0	3.8	3.7	2.7	100
Rank	1	2	3	4	5	6	7	8	9	10	-
Capacity	5,750	1,760	1,380	1,360	1,030	970	742	708	696	515	18,500

Source: Author's compilation.

The table above is meant to provide a logic why despite having a second rank in Copper production globally, China's largest exports were not from metals and ores as Zambia and other developing countries such as Chile, Peru, and D.R. Congo. This predicts the fate of most developing countries in international trade. In the following subheading, we shall compare the share of manufactures to merchandise exports.

²⁴ Concentration index (HHI) or Product HHI, is a measure of the degree of product concentration. An index value closer to 1 indicates a country's exports or imports are highly concentrated on a few products. On the contrary, values closer to 0 reflect exports or imports are more homogeneously distributed among a series of products.

²⁵ The diversification index measures the absolute deviation of the trade structure of a country from world structure. It takes values between 0 and 1. A value closer to 1 indicates greater divergence from the world pattern. This index is a modified Finger-Kreinin measure of similarity in trade. see also <http://www.scrip.org/reference/ReferencesPapers.aspx?ReferenceID=1485594>; accessed on 2023-04-9..

²⁶ * denotes countries where China is among the top three export destinations, and most of which are African countries.

²⁷ <http://www.mineweb.com/news/base-metals-and-minerals/coppers-top-10-countries-and-companies/>; date accessed 2023-04-9.

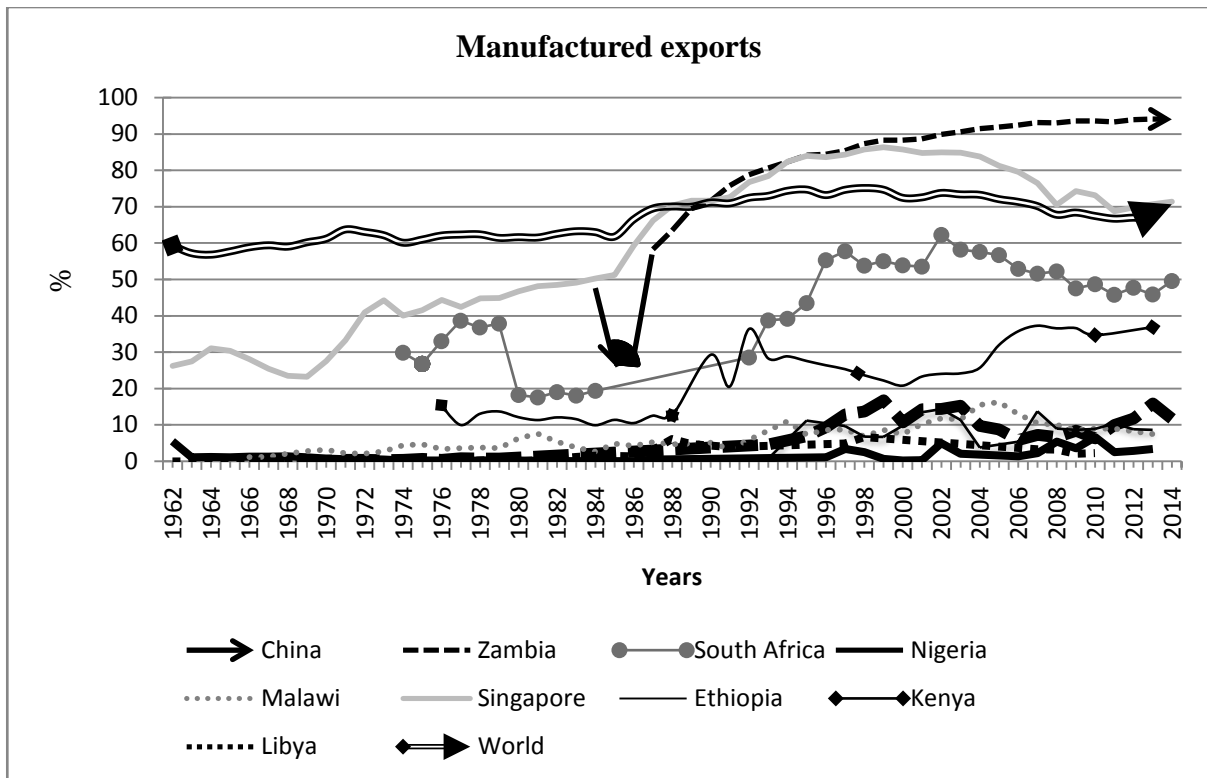


Figure 4.1.8. Manufactured exports (% of merchandise exports) (Source: Author using data from World Development Indicators (2016) <http://data.worldbank.org>)

4.1.9. Share of Manufactures to Merchandise Exports

It is usually expected that, after trade liberalization, a country will begin to adopt new technologies and add value to its commodities and export manufactured goods. While this belief may have been empirically tested elsewhere, it can never be generalized until we look at the figure below where we illustrate the proportion of manufactured exports to merchandise exports for China, Zambia and other developing countries in Africa from 1962 to 2014;

It is evident from the figure above that, from 1984 to 2004 nearly two decades after trade liberalization, China's share of manufactures to merchandise exports rose from 47% to 91% and reached a peak of 94% as of 2014. Meanwhile, Zambia's share of manufactures to merchandise exports only rose from 2% in 1991 to 10% in 2011 two decades after trade liberalization and as of 2014 it was at 11%. While China made significant strides in the share of manufactures to merchandise exports to an extent of going beyond the world average, the impact was positive but not significant for Zambia. Even Africa's largest economy (Nigeria) by GDP, the share of manufactures declined from 5% in 1962 to 3% in 2014 suggesting that most of its exports are primary products. This perfectly corresponds with table 4.1.2 in the previous section. Several other developing countries like Ethiopia, Kenya, Malawi and Libya are still far below the world average. We shall further examine the share of manufactures to GDP in the next subsection below.

4.1.10. Share of Manufactures to GDP

In addition to savings and investments in education, the success of High Performing Asian Economies (HPAEs)

namely, Hong Kong, Japan, Malaysia, South Korea, Singapore, Taiwan and Thailand, has also been largely attributed to extensive manufacturing through value addition which made exports more profitable through government established institutions notably in the periods 1965 to 1990²⁸. While, this was true for the HPAEs, in the graph below, we compare the share of manufactures to the economy of China, Zambia, Nigeria and South Africa.

It is quite interesting to note from the graph above that, prior to trade liberalization in 1991, the share of manufactures to GDP reached a peak of about 36.8%. Nonetheless, after trade liberalization, the contribution of manufactures to GDP sharply reduced to 10% in 2001 and declined further to 8% in 2011 nearly 20 years into a free market regime.

As of 2013, it still remained at 8%. This should be quite explicit given the fact that, after openness to trade, more manufactured imports entered the market and imposed stiff competition on domestic manufacturing industries, notably the textile industries due to an influx of cheap Chinese cloth.²⁹ Nigeria despite being the largest economy in Africa by GDP as of 2015 has the lowest share of manufactures to its economic output. This is true for several other developing countries in the world that are seemingly quite well integrated into the global system. Now, what more about natural resource contribution to the economic output in the period of trade liberalization? The next subsection looks at this performance indicator.

28 <http://documents.worldbank.org/curated/en/1993/09/698870/east-asian-miracle-economic-growth-public-policy-vol-1-2-main-report>; accessed on 2023-04-9.

29 http://www.nytimes.com/2007/08/21/world/africa/21zambia.html?pagewanted=all&_r=0; accessed on 2023-04-9.

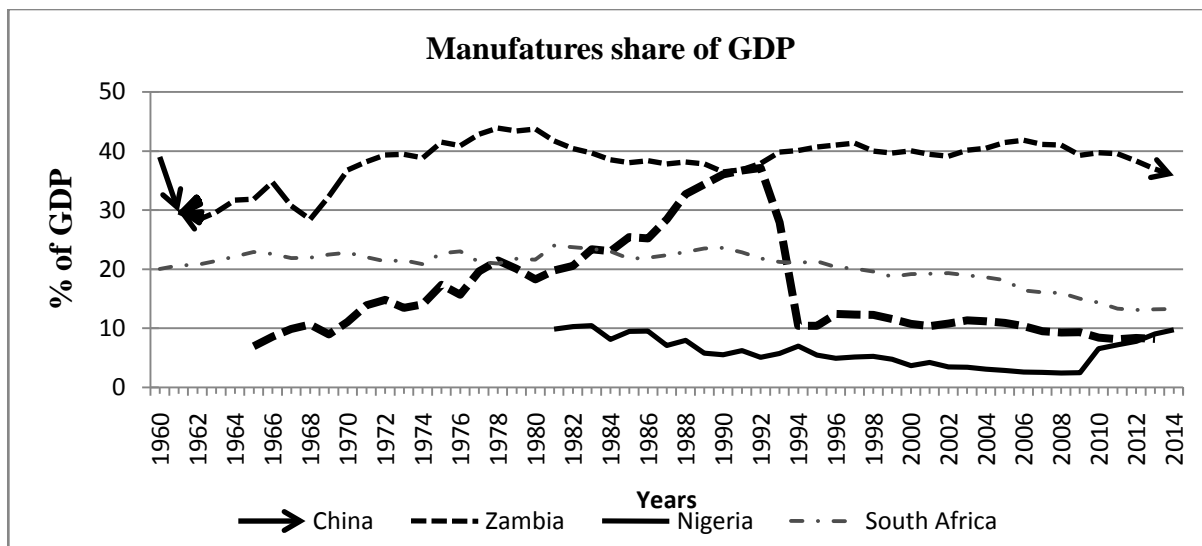


Figure 4.1.9. Manufacturing, value added (% of GDP) (Source: Author using data from World Development Indicators (2016) <http://data.worldbank.org>)

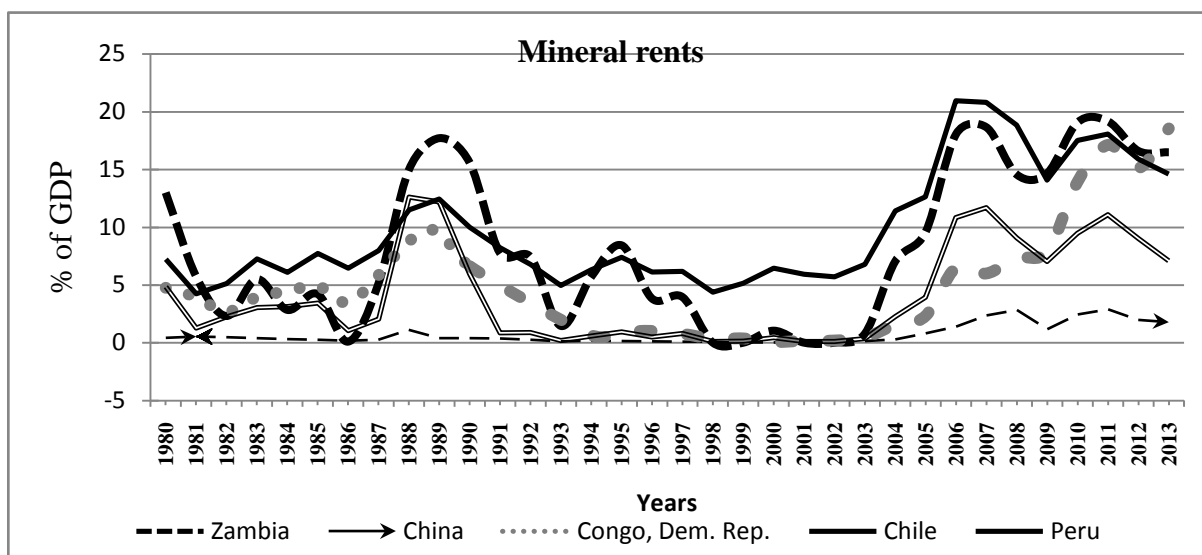


Figure 4.1.10. Mineral rents as a % of GDP (Source: Author using data from World Development Indicators (2016) <http://data.worldbank.org>)

4.1.11. Natural Resource Contribution to the Economy

It is common for developing countries to rely on the export of raw materials in the initial stages of their development as this is believed to finance further investments. Most developing countries are also well endowed with natural resources. But if more openness to trade meant well for developing countries, the contribution of their natural resources to total GDP ought to gradually reduce due to some levels of industrialization as a result of technological progress. Although this was true for the Asian tigers³⁰ and indeed China, the graph above shows quite opposite for Zambia;

The countries sampled in figure 4.1.11 below are also among the top ten largest Copper producers in the world as of 2014 (see table 4.1.3). But it is quite interesting to find consistent results with table 4.1.2 where we looked at largest export product groups of these developing countries. Here again, we find that, mineral rents as percentage of GDP for Zambia are higher than that of China despite China having large production capacity of

such minerals as Copper.

For China, mineral rents reduced from 0.42% in 1980 to 0.38% in 1990 and further reduced to 0.07% in 2000. As of 2013, mineral rents only accounted for 1.78% of GDP. Likewise, since 1991 after trade liberalization, Zambia's mineral rents as percentage of GDP were already high but reduced from 7.75% to 0% in 2001 and rose again to 19.2% in 2011 (20 years into a free market system) suggesting a high dependence ratio of natural resources on the economy. Many other developing countries like Chile, Peru and D.R. Congo still have a high proportion of mineral rents to their GDP so that when prices for minerals slows down, their economies enter into a state of economic lobotomization³¹. During economic shocks, consumers become reluctant to spend their disposable incomes on raw materials but would rather be willing to purchase consumer goods manufactured by industrialized countries. The next segment compares Labour Force Participation Rate (LFPR).

30 Taiwan, South Korea, Singapore and Hong Kong

31 term coined by author to imply an economic turbulence or economic retardation due to weakening global demand for commodities

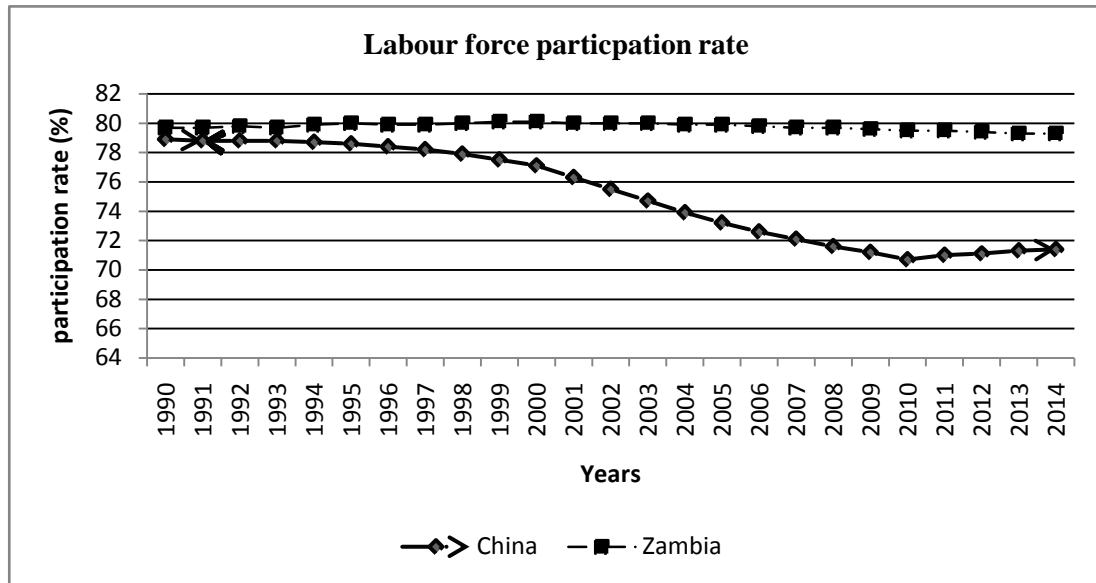


Figure 4.1.11. Labour force participation rate, total (% of total population ages 15+) (modelled ILO estimate) (Source: Author using data from World Development Indicators (2016) <http://data.worldbank.org>)

4.1.12. Labour Force Participation

Trade liberalization regimes are usually associated with increased economic activities because it is argued that, when an economy is liberal for private investment, resources and labour is allocated to the most productive sectors of the economy and this brings about efficiency. In the Ricardian model, we saw that, differences in labour productivity orchestrate trade among countries. Nonetheless, labour productivity does not precede labour force participation. To this end, the World Bank defines Labor force participation rate (LFPR) as the proportion of the population ages 15 and older that is economically active. It encompasses all people who supply labour for the production of goods and services during a specified period³². With this in mind, the results of this study shows that, labour participation rate for Zambia was higher than that for China from 1990-2014 and with a steady decline for China as shown in the graph above;

The results from this study are quite interesting in that, Zambia which maintained a LFPR of 80% from 1990 to 2014 (over two decades of free market operations) still recorded a lower GDP and GDP/capita than that of China. If the LFPR is high but output is low, it can be argued that, the labour force in participation is not effective or it is effective but not efficiently used. In the case of China, the effect of declining LFPR can be attributed to the effect of aging population³³ coupled with the one child policy which was only rescinded in 2015. We shall wind up this section with income indicator in the next subsection.

4.1.13. Income (PPP \$1.25 /day)

While GDP/capita and GNI/capita can be used to measure the welfare of people in the economy, this study uses per capita income based on the proportion of people who live below the World Bank poverty line of PPP

\$/1.25/day in the economy access how economic activities due to free trade policies impacted on income poverty.

In the Human Development Report (2010 [49]), the UNDP shows that, development should not only be measured from an econometric perspective such as the use of GDP/capita which may not account for the outlying gap between the rich and the poor using such aggregate averages. In the table below we compare China, Zambia, Nigeria and South Africa;

Table 4.1.4. Income (PPP \$1.25 /day)

% of population living below income poverty line		
	National poverty line, 2004-2014	PPP \$1.25 a day 2002-2012
Zambia	60.5	74.3
China	-	6.3
Nigeria	46.0	62.0
South Africa	53.8	9.4
Zimbabwe	72.3	-
Malawi	50.7	72.2
D.R. Congo	63.6	87.7
Madagascar	75.3	87.7

Source: Author using data from Human Development Report (2015) .

It is quite clear from the table above that, Zambia still has a substantial proportion of people (60.5%) with living below national poverty line from 2004 to 2014. For the purposes of international comparisons, 74.3% of Zambians were still living below \$1.25/day from 2002 to 2012 compared to 6.3% in China. Hasn't trade liberalization created more job opportunities for the masses or revamped the agricultural sector to benefit the poor?

This section presented descriptive statistics in which we have graphically shown the trends in performance between China and Zambia 20 years after trade liberalization. In the next section, we shall give an in-depth comparative analysis and interpretation of all the indicators presented here.

32 <http://data.worldbank.org/indicator/sl.tlf.cact.zs> ; accessed on 2023-04-9.

33 <http://www.bbc.com/news/world-asia-19630110>; accessed on 2023-04-9.

4.2. Comparative Analysis

The descriptive statistics presented above point to the fact that, trade liberalization had a remarkable positive impact on the GDP of China. Here we are referring to a steady rise in GDP from \$US 219,203 million in 1978 to \$US 1, 230, 538 million two decades later (1978-1998) while Zambia rose from \$5,307 million in 1991 to \$US 10,469 million constant (2005) prices two decades later (see figure 4.1.1). Although Zambia was able to double its economic output in two decades (1991-2011), China recorded significant strides and in doing so it benefited more from trade openness than Zambia. This huge difference determines who gains more from a trade liberalization regime.

In terms of Real GDP growth, Zambia only grew at 3.8% on average compared to 10.3% for China in two decades after their market reforms. This means that, not all countries are positively impacted by trade liberalization. Although, Zambia performed fairly well colliding with China in 2010, the challenge has always been the lack of capacity to sustain the growth due to a serious deficiency in diversification in the economy (see appendix 1).

While we appreciated a steep rise in GDP per capita for China after trade liberalization, much was not achieved for Zambia basically due to the following reasons: firstly, the growth of the economy is slower than the growth of the population and this is true for many other developing countries. Secondly, although population growth can be a *bonus* for growth (in the case of China), many times it has acted as an *onus* for growth in developing countries due to poor management of resources.

When we look at Zambia, a GDP per capita rise from \$US 660 to \$US 767 (\$107 improvement) in two decades (1991-2011) is not enough to brag about having benefited from trade liberalization when we compare it with China's trend from \$US 197 to \$US 972 (\$775 improvement) in two decades after trade liberalization (1978-1998) and as of 2014, China had \$US 3,799 while Zambia had \$US 848 (see figure 4.1.3) which is a huge gap to talk about. Though not representative, many studies have used GDP/capita to assess the economic performance and wellbeing of people in a country with a higher per capita GDP being construed as having a higher standard of living³⁴. If that is the case, then developing countries like China were more blessed from trade liberalization than countries like Zambia.

Linked to that, this study equally found that, GDP/capita growth rate for China averaged 8.9% in two decades (1978-1998) after trade liberalization far much contrary to Zambia's growth of 1.1% in the same interval (1991-2011) after liberalization (see figure 4.1.4). While growth was positive for both countries, China recorded a more significant growth than Zambia. This discrepancy explicitly suggests that, while trade liberalization can lead to growth in some countries, other countries do not experience the same growth given the same time frame.

Additionally, while there was a positive impact on GNI per capita for Zambia and China, Zambia together with Nigeria and Zimbabwe lag behind China and South

Africa's GNI/capita (see figure 4.1.5). Yet, GNI is another comprehensive and inclusive measure of a country's productive capacity (less foreign economic activities) and the quality of life enjoyed by an average resident. According to the World Bank ranking of countries by GNI per capita using the atlas method, in 2014, China ranked number 84 under the upper middle income group ahead of South Africa ranked 91 in the same group while Zambia ranked 148 under the lower middle income group below Nigeria on number 134. Zimbabwe ranked 171 under the low income group yet these countries are more open to trade than China as earlier indicated (see figure 3.1).

In terms of the share of exports as a percentage of world trade, many African developing countries used as a point of reference (South Africa and Nigeria) fall far much below China for quite a length period with a tendency of decline in their shares from 1981 (see figure 4.1.6). There is not any other best way to explain why countries like Zambia and Nigeria are more open to trade than China (see figure 3.1) but contribute less to the global exports. It means their top exports (Metals and Oil respectively) still make less impact compared to China's top exports from manufacturing sector (see table 4.1.2). The lack of diversification of exports is one major impediment for developing countries like Zambia to reap the benefits of trade liberalization (compare appendix 1 and 2).

Although it is too early to conclude, it looks like blessing from trade liberalization befit those countries that add value to their exports. But doesn't value addition come as a result of the adoption of new technologies from trade liberalization? Although the answer to this question is normally 'yes', what we see in figure 4.1.7 is totally opposite for Zambia. A steady rise in high technology exports was true for China, why? The answer lies in whether we rely wholly on imported technology or a combination of imported (foreign) and domestic technologies.

Although foreign technology played a crucial role in China's economy, China also invested much in education and was able to craft its own domestic technology making it among the world's top twelve (12) technologically competitive economies³⁵ in 2015. As a matter of fact, technology can never be imported (as many African countries do) but created through investments in education, R & D and most developing countries are lacking in this. China did not only rely on imported technology but had invested in education and created an enabling environment for hi-tech start-up enterprises in such things like computers and other electronic devices which flooded the world market. This is the reason for its continuous high technology exports which is at variant with Zambia.

The problem with depending on imported technology is that, it comes patented and requires hands-on technical training to be assimilated into the domestic economy and this may be costly. As a point of exemplification, the TRIPS³⁶ in the Uruguay round of 1994 of the WTO places so much immunity on developed countries' technologies and it is costly for developing countries to conduct 'reverse engineering' if they do not invent their own. Thus,

34 <http://www.investopedia.com/terms/p/per-capita-gdp.asp>; accessed 2023-04-9.

35 <http://www.richestlifestyle.com/most-technologically-advanced-countries/>; accessed on 2023-04-9.

36 https://www.wto.org/english/res_e/publications_e/trips_agree_e.htm; accessed on 2023-04-9.

sustainable technology must be locally crafted through investments in R&D³⁷ and the application of the principles of science which most developing countries like Zambia fail to do hence their fate in the global economy in which they have been integrated.

As a result, production is hampered for low-tech countries like Zambia which also predetermines their export structure in international trade. Most developing countries using low technologies in production tend to export raw materials. While it took less than a decade for China to change its export structure to manufacturing, most developing countries still export primary commodities yet they have spent over 20 years in trade liberalization regime. They also have a higher concentration of exports on single primary commodities due to low diversification as shown using their concentration and diversification indices. This limits their optimum gains (blessings) from free trade.

Evidence presented in Table 4.1.2 further shows that, trade between China and many other developing countries like Zambia, Angola, Chad, D.R. Congo, Ethiopia, Equatorial Guinea, Tanzania, Zimbabwe, Kenya and Peru is based on inter-industry as of 2014 given their contrasting export structures (manufactured goods versus primary commodities) and export destinations. These same developing countries also trade more with highly industrialized countries like Germany, France, United States and U.K. as in the case of Algeria and Libya in 2014.

Putting the above facts into perspective, while this kind of trade is triggered by comparative advantage, which in my view is the right thing, it provides holistic support for the assumptions of the North-South model by Ronald Findlay³⁸ which contends that, developing countries (South) depend on imported inputs (machinery) from developed countries (North) to enable them produce their primary commodities (copper in the case of Zambia) while the North (China and Switzerland, the first top two export destinations for Zambia in 2014) can produce manufactured goods without imports from the South (Zambia)³⁹. As a consequence, growth of the South is largely obstructed by the growth of the North (in the event where China or Switzerland declines making heavy duty copper bulldozers or even importing Zambia's copper as it were in 2015⁴⁰).

Linked to the foregoing, while China's export share was 0.8% at the time of trade liberalization in 1978, significant strides were made which amounted to 3.3% share two decades later and 13.8% in 2015. This is quite a variant with Zambia's trend, recording a rise from 0.03% to 0.05% from 1991 to 2011 (20 years after market reforms) and a slow down to 0.04% in 2015 (see figure 4.1.6). Several other resource-dependent

developing countries in Africa like Nigeria, Angola, Zimbabwe etc. have similar trends in world export shares like Zambia thus questioning much about the credibility of their high intensity of globalization.

Again, as a matter of fact, most developed countries in the world once relied much on natural resources to contribute to GDP at various levels of development. For example Japan's economy in the 1950s was dominated by textiles. China too was an agrarian economy⁴¹ prior to the market reforms in 1978. But at least two decades after trade liberalization, the share of mineral rents to China's GDP was on average less than 1%. This should have been necessitated by its strategic policy of tax exemption on firms that were heavy value-addition-intensive and export oriented⁴².

Contrariwise, mineral rents for Zambia rose from 7.75% in 1991 to 19.2% in 2011, 20 years after trade liberalization (see figure 4.1.11). A similar trend like that of Zambia is also true for other developing countries like D.R Congo. This renders them in a big menace in the event where a financial tsunami occurs [50]⁴³. Although mineral rents are particularly important for international trade gains and reflect the comparative advantage and international division of labour in developing countries, they ought not to have a prolonged larger contribution to overall GDP if stability is to be maintained in the economy.

In most of these economic activities, labour participation is cardinal. While China experienced a decline in LFPR from 79.6% in 1990 to 71.4% in 2014, Zambia's rate was higher by almost 80% in the entire 20 years of trade liberalization (refer to figure 4.1.12). Nonetheless, this did not positively influence growth in output to the level of China's economy. This may be due to the fact that, having a high LFPR does not mean it is effective in production. It all depends on how skillful the labour is [7] and whether or not the potential labour is put to good use.

In the case of Zambia, it means that, everyone seems to be actively engaged in economic activities but contributing less to overall growth, while China could be suffering from the effects of an aging population⁴⁴. On the contrary, a lower LFPR means nothing for a country with a higher capital-labour ratio because some human labour could be replaced by capital-intensive automated equipment⁴⁵.

One of the key objectives of trade liberalization is to have sustainable gains that can improve the income of the people through increased economic activity and job creation. Although this was true for China, Zambia still have over 74.3% of the population living below the standard poverty line compared to China with 6.3%. For arguments sake, if the population of Zambia was about 13

37 <http://www.bloomberg.com/graphics/2015-innovative-countries/>; accessed on 2023-04-9.

38 <http://www.encyclopedia.com/doc/1G2-3045301779.html>; accessed on 2023-04-9.

39 See Dinopoulos, E. Segerstrom, P. (2007): "North-South Trade and Economic Growth". on: <http://people.clas.ufl.edu/dinopoe/files/NorthSouthTrade.pdf>.; accessed 2023-04-9.

40 See also <http://www.dallasnews.com/business/headlines/20151115-from-australia-to-zambia-slowing-china-economy-causes-pain.ece>; accessed on 2023-04-9.

41 <http://www.oxfordbibliographies.com/view/document/obo-9780199920082/obo-9780199920082-0016.xml>; accessed on 2023-04-9.

42 Panagariya, A. available on: <http://www.columbia.edu/~ap2231/Policy%20Papers/F&D-China-India-june95.pdf>; accessed on 2023-04-9.

43 See also Glenn-Marie Lange (2003) on: http://mdgs.un.org/unsd/envaccounting/ceea/archive/Energy/GML_Namibia.PDF; accessed on 2023-04-9.

44 <http://www.cnn.com/id/49498720>; accessed on 2023-04-9.

45 <http://www.oxfordreference.com/view/10.1093/oi/authority.20110803095547686>; accessed on 2023-04-9.

million in 2012, then nearly 10 million were living below PPP\$ 1.25/day. If we use the updated PPP\$1.90/day of 2015, we may cover a higher proportion people. Then the question is, how has trade liberalization improved the welfare of people? Nigeria, Malawi, D.R. Congo and Madagascar- countries which are well integrated into the global system, still have high levels of income poverty (refer to table 4.1.4).

Faini (2004) states that, trade liberalization whether measured by an output or policy indicator is positively associated with substantial reduction in income poverty. China with a population of 1.3 billion and managed to bring down the share of its people living in poverty from 53% at the onset of economic reforms in 1981 to 8% twenty years later and indeed further reduced to 6.3% as reported by Human Development Report (2015 [51]). This would suggest that over 400 million people have risen out of abject poverty in China alone since it began to open to the outside world [3]. Therefore, trade liberalization in this case can be perceived to have created losers and winners.

In summation, this chapter focused much on impact assessment of trade liberalization in China and Zambia using descriptive statistics. We have come to an understanding that, although Zambia benefited from trade liberalization, in comparison with China, its economic performance still revolves around the features of an enclave economy shackled by lack of competitiveness. We have also shown that, in various aspects, Zambia and indeed other developing countries in Africa such as Nigeria and Angola seem to be well much integrated in the global economy but are just used as suppliers of raw materials. For this reason, their gains from trade are confined to their respective export commodities. In the following chapter, we shall present empirical results using C-D model based on linear regression techniques and see how openness to trade influences GDP. This will be especially imperative in drawing a policy framework (recommendations) for Zambia and other developing countries.

5. Empirical Analysis

The central aspect of this chapter is to present empirical findings from Cobb-Douglas Production Function Model (C-D Model) using linear regression methods. The model was preferred over others because of its ability to measure changes in output (Y) which in this case is GDP based on the changes in the inputs (i.e. labour, capital, openness etc.). The study used time series data for Zambia mainly obtained from UNCTAD and World Bank statistics for the period from 1990 to 2014. Time series data was preferred over cross sectional data because this kind of data befits the nature of this study in which we sought to establish whether trade liberalization blesses or curses developing countries.

To arrive at this conclusion, it was imperative to observe some indicators overtime to see the trends after the adoption of market reforms. Although China and Zambia was put into perspective, the model in this chapter was wholly based on data from Zambia as motivated by its relatively weaker economic performance as evident in chapter 4 when we compared it with China. The next subsection explains the model.

5.1. Model Specifications

The key independent variable used in this study was openness to trade which was used as a proxy for trade liberalization and was calculated in this formula; (imports + exports/GDP). This determination of trade liberalization was also used by WTO [5], Asiedu [17] in Ghana, Hamad et al [18] in Tanzania and Kora and Gjoni [14] in Albania. Other independent variables that were used as proxies for free market were openness to FDI which was calculated as (inwardfdi+outwardfdi)/GDP), exports, imports and inward FDI respectively.

On the other hand, our key dependent variable was GDP which was used as a proxy for economic performance as used in related studies by Berg and Krueger [12], Wacziarg and Horn-Welch [13], Asiedu [17], Hamad et al [18] and Kora and Gjoni [14], (see chapter 2). The table below summaries the variables that were used in this study;

Table 5.1. Summary Description of Variables

Variable	Description	Measurement	Units
opentrade	Openness to trade-a ratio of total trade to GDP	Independent	Index
openfdi	Openness to FDI-ratio of total FDI to GDP	Independent	Index
exp	exports of goods and services	Independent	Current \$US millions
imp	imports of goods and services	Independent	Current \$US millions
fdi	FDI inward	Independent	Current \$US millions
gdp	GDP	Dependent	(2005)\$US millions
labor	labour force, total	Control	Thousand persons
inv	Investment as % of GDP	Control	%
manuf	Ratio of manufacture	Control	Index
res	Total Reserves (% of total external debt)	Control	%
tcost	Taxes on goods & services, % of revenue	Control	%
inst	Institutions 'general government revenue (% of GDP)'	Control	%

Source: Author's compilation

The model

The C-D model used is expressed in the following equations;

$$Y = AL^{\alpha} * K^{\beta} \quad (1)$$

$$Y = AL^{\alpha} * K^{\beta} * Openness^{\gamma} * Z^{\delta} \quad (2)$$

$$LnY = Ln A + LnL + \beta LnLnK + LnLnOpenness + LnZ \quad (3)$$

Model 1 is the original version of Cobb-Douglas production function where Y = output, A = total factor productivity, L and K=Labour and Capital respectively while α & β are the two inputs (L and K)'s respective shares of output which also denote their output elasticities.

In model 2, we extended it and added the explanatory variable 'openness' to trade and a series of control variables denoted by Z. In model 3, we have demonstrated the actual computation of the variables in the model. Where

Y = observed change in dependent variable (GDP); $\ln A$ = constant; $\ln Openness$ = regression coefficient for independent variable; $\ln Z$ = a series of control variables.

Six attempts of linear regressions were made and each attempt had five regressions (reg 1 –reg5) collectively known as multiple regression⁴⁶, with different combinations of independent and control variables to observe their influence on GDP. Some variables were left out deliberately due to the effect of multicollinearity⁴⁷. In the subsection below, we present the results of this empirical testing.

5.2. Regression, Results and Explanation

In the first attempt, we regressed trade openness as a proxy for trade liberalization on GDP and found it to be positive and strong at 99.9% level of significance. This means that, openness to trade has a positive influence on the growth in GDP. Any unit increase in trade openness may raise GDP by 73.2% (see table 5.2). This is a remarkable influence.

We further added labour and found it to be positive and significant at 99.9%. This means that, labour has a strong influence on GDP and that, any unit increase in labour will also increase GDP output. Adding investment to the model, we found that it was positive but not significant. This means that, the direction of influence of investment on GDP in the Zambian economy is not apparent.

When we added manufacturing, we found it both negative and not significant to explain. This is somewhat contrary to our expectation that manufacturing could influence GDP positively and significantly.

Table 5.2. Multiple Regression Results for Openness to Trade

Variable	Reg1	Reg2	Reg3	Reg4	Reg5
opentrade	0.732*** (9.51)	0.339*** (9.42)	0.297*** (7.04)	0.282*** (6.15)	0.289*** (6.18)
labor		1.442*** (10.06)	1.264*** (7.37)	1.489*** (6.33)	1.376*** (5.11)
inv		-0.0112 (0.24)	0.011 (0.24)	0.0186 (0.41)	0.0227 (0.49)
manuf			-0.446 (1.73)	-0.506 (1.90)	-0.376 (1.23)
res				-0.0582 (0.39)	-0.0916 (0.59)
tcost				0.159 (-1.32)	0.106 (-0.78)
inst					-0.0862 (0.89)
_cons	23.11*** (458.32)	10.80*** (9.66)	11.16*** (10.24)	8.988*** (4.4)	10.61** (3.86)
r2	0.797	0.982	0.984	0.986	0.987
rss	0.749	0.0661	0.0575	0.0504	0.0482
ll	8.37	38.72	40.46	42.1	42.67

t-statistics in parentheses; *p< 0.05; **p<0.01; ***p<0.001

46 The term was first used by Pearson, 1908 with the purpose of learning more about the relationship between several independent or predictor variables and a dependent or criterion variable. see <http://www.statsoft.com/Textbook/Multiple-Regression#afitting>; accessed on 2016-05-29 08:07 AM

47 A situation where two or more predictor variables are correlated in a multiple regression which makes it easier for one to linearly predict the other accurately.

In the second attempt, however, we considered combining trade openness and investment and we found that, both were positive and statically significant at the 99.9% level of significance. This means that, an increase in trade openness and investment will strongly influence GDP. When we added manufacturing, it was negative but statistically significant at 99.9% level of significance. This means that manufacturing does not positively influence GDP basically because of the excessive imports of manufactured products such that an increase in openness to trade increases manufactured imports and decreases GDP in turn. When we added reserves, we found it to be negative and not significant to explain.

However, when we added taxes (tcost) and general government revenue (inst), they were both negative but statistically significant at 99% and 95% levels respectively. This means that, taxes and revenue institutions have a negative influence on GDP such that, their increase decreases the productive capacity of Zambia's economy and thus decreasing GDP output. The R-squared ranged from 0.797 for regression 1 to 0.967 for regression 5 suggesting a very strong coverage of the observations by nearly 100% (see Table 5.3).

Table 5.3. Multiple Regression Results for Openness to Trade/Investment

Variable	Reg 1	Reg 2	Reg 3	Reg 4	Reg 5
opentrade	0.732*** (9.51)	0.542*** (7.74)	0.303*** (3.82)	0.284** (3.55)	0.309*** (4.29)
inv		0.332*** (4.56)	0.260*** (4.47)	0.159* (2.29)	0.134* (2.14)
manuf			-1.592*** (4.10)	-0.916 (2.03)	-0.315 (0.67)
res				-0.234 (0.91)	-0.309 (1.34)
tcost				-0.371* (2.43)	-0.418** (3.05)
inst					-0.322* (2.44)
_cons	23.11*** (458.32)	22.00*** (89.64)	18.38*** (20.34)	20.95*** (15.34)	23.58*** (14.5)
r2	0.797	0.896	0.942	0.956	0.967
rss	0.749	0.385	0.214	0.163	0.122
ll	8.37	16.7	24.05	27.45	31.02

t-statistics in parentheses; *p< 0.05; **p<0.01; ***p<0.001.

In the third attempt, we used FDI as a proxy for trade liberalization and regressed it on GDP and we found it positive and statistically significant at 99.9% level of significance. We found the value of $\ln_{openness\ fdi}$ coefficient to be 0.348 (see table 5.4). Therefore, applying the model, we find that, any unit increase in openness to FDI increases GDP by 34.8%. When we added manufacturing, it was negative but statistically significant at 99.9% level of significance for the reasons reported in the previous attempts. After including reserves we found it negative and not significant. We also added taxes and we found it negative but significant at 95% level and finally, general government revenue was both negative and not significant.

Table 5.4. Multiple Regression Results for Openness to FDI

Variable	Reg 1	Reg 2	Reg 3	Reg 4	Reg 5
openfdi	0.348*** (6.21)	0.202* (2.28)	0.045 (0.82)	0.035 (0.69)	0.0486 (0.97)
inv		0.351 (2.05)	0.242* (2.48)	0.154 (1.42)	0.119 (1.1)
manuf			-2.562*** (6.96)	-1.564** (2.98)	-1.075 (1.77)
res				-0.577 (1.91)	-0.655* (2.20)
tcost				-0.408* (2.10)	-0.452* (2.37)
inst					-0.275 (1.49)
_cons	23.90*** (127)	22.35*** (28.7)	16.16*** (16.31)	19.89*** (11.33)	22.18*** (9.67)
r2	0.626	0.686	0.905	0.929	0.936
rss	1.381	1.16	0.351	0.264	0.235
ll	0.724	2.906	17.85	21.4	22.85

t-statistics in parentheses; *p<0.05; **P<0.01; ***p<0.001.

In the fourth attempt, we sought to measure the influence of exports as another proxy for trade liberalization, and we found that, it was positive and significant on GDP at 99.9% level of significance. This means that, exports have a positive influence on Zambia's economic output such that, a higher share of exports can encourage high economic performance in GDP. Given openness coefficient of 0.397, it follows that, GDP increases by 39.7% for every additional increase in exports. When we added investments, we found it positive and significant at 99% level. But when we added manufacturing, it was negative but statistically significant for the same reasons mentioned earlier. We also added total reserves and found it both negative and not statically significant. When we added taxes on goods and services as well as general government revenue, we found them to be both negative but statically significant at 95% level of significance (see table 5.5). This means that, increase in these two variables reduces Zambia's GDP by 29% and 27% respectively.

Table 5.5. Multiple Regression Results for Openness to Exports

Variable	Reg 1	Reg 2	Reg 3	Reg 4	Reg 5
exp	0.397*** (18.08)	0.341*** (12.48)	0.252*** (5.99)	0.231*** (5.27)	0.237*** (6.16)
inv		0.161** -2.85	0.165** -3.27	0.104 -1.75	0.0832 -1.59
manuf			-0.938* (2.62)	-0.56 (1.44)	-0.0726 (0.19)
res				-0.167 (0.80)	-0.25 (1.34)
tcost				-0.258 (2.01)	-0.298* (2.63)
inst					-0.277* (2.62)
_cons	19.71*** (115.41)	19.64*** (129.96)	18.12*** (30.51)	19.84*** (18.48)	22.00*** (17.61)
r2	0.934	0.952	0.964	0.97	0.978
rss	0.243	0.177	0.134	0.11	0.0797
ll	22.45	26.37	29.92	32.34	36.39

t-statistics in parentheses; *p<0.05; **P<0.01; ***p<0.001

In the fifth attempt, we used imports as a proxy for trade liberalization and found that, it was positive and statically significant at 99.9% level of significance with R-squared explaining 92% of the variation in GDP. This means that, any unit increase in openness to imports can positively influence change in GDP by 49.6%. However, since imports are discounted from GDP and if we import similar things as we domestically produce, production will decrease, it follows that, these imports should be capital intensive intermediary imports such as technical equipment and machinery which facilitate production. When we added investments, we found it to be positive and statistically significant at 99.9% level of significance.

This means that, an additional unit of investments can increase GDP by 20.9% in this regard (see table 5.6) as per obtained coefficient. However, when we added manufacturing, we found it negative but statistically significant at 99.9% meaning that, imported manufactured goods add pressure on GDP. When we added total reserves, we found it negative and not significant. However, adding taxes on goods and services showed negative but statistically significant at 99.9% level of significance for the reasons reported above. When we added general revenue, it was both negative and statically insignificant to be reported.

Table 5.6. Multiple Regression Results for Openness to Imports

Variable	Reg 1	Reg 2	Reg 3	Reg 4	Reg 5
imp	0.496*** (16.21)	0.410*** (12.53)	0.298*** (6.35)	0.292*** (6.05)	0.288*** (6.41)
inv		0.209*** (3.89)	0.197*** (4.25)	0.115* (2.14)	0.102 (2.04)
manuf			-0.990** (2.97)	-0.54 (1.52)	-0.21 (0.57)
res				-0.0435 (0.22)	-0.122 (0.65)
tcost				-0.286* (2.46)	-0.321** (2.93)
inst					-0.209 (2.03)
_cons	18.87*** (78.08)	18.90*** (99.31)	17.50*** (34.89)	19.22*** (19.54)	20.85*** (17.17)
r2	0.92	0.952	0.966	0.975	0.98
rss	0.298	0.176	0.124	0.0926	0.0754
ll	19.91	26.47	30.84	34.5	37.08

t-statistics in parentheses; *p<0.05; **P<0.01; ***p<0.001

In the final attempt, we used inward FDI as a proxy for trade liberalization and found it positive and significant at 99.9% level of significance with a coefficient of 0.287 suggesting that, any unit increase in FDI openness would increase GDP by 28.7%. However, when we added the share of investment, we found it both negative and not significant. When we further added manufacturing, we found it negative but statistically significant at 99.9% level of significance for the reasons reported in the previous attempts.

When we added total reserves, we found it to be both negative and not significant. Again, when we included taxes on goods and services, it was negative but statistically significant at 95% level of significance suggesting that, any unit increase in taxes reduces GDP by 42.2% (see Table 5.7). When we further added general

government revenue, it was both negative and not statistically significant.

Table 5.7. Multiple Regression Results for Openness to Inward FDI

Variable	Reg 1	Reg 2	Reg 3	Reg 4	Reg 5
fdi	0.287*** (9.66)	0.257*** (4.69)	0.0953 (2.01)	0.0762 (1.68)	0.084 (1.92)
inv		0.0944 (0.65)	0.155 (1.59)	0.0875 (0.83)	0.0576 (0.56)
manuf			-2.167*** (5.34)	-1.346* (2.61)	-0.851 (1.47)
res				-0.489 (1.68)	-0.569 (2.01)
tcost				-0.381 (2.07)	-0.422* (2.37)
inst					-0.278 (1.63)
_cons	21.13*** (122.04)	21.01*** (82.11)	16.67*** (20.06)	19.92*** (12.54)	22.13*** (10.86)
r2	0.802	0.806	0.918	0.936	0.944
rss	0.731	0.717	0.304	0.236	0.205
ll	8.685	8.922	19.65	22.82	24.55

t-statistics in parentheses; *p<0.05; **p<0.01; ***p<0.001.

In summation, this chapter essentially intended to demonstrate empirically the influence of openness on GDP. It is evident that, openness to trade, FDI (total), exports, imports and inward FDI have a positive and statistically significant influence on GDP at the specified levels of significance. But generally, the proportion of manufacture has a negative influence on GDP just like taxes on goods and services and general government revenue. Therefore, any sound trade policy must take into account a judicious combination of the trade liberalization proxies used in this study (opentrade, openfdi, exp, imp and inward fdi) with labour and investment due to their observed positive influence on GDP. In the next chapter, we shall apply logic to our overall results and see how much they converge or divert from our literature review through discussion after which we shall draw a conclusion and recommendations respectively.

6. Discussion, Conclusion and Recommendation

This section presents a succinct discussion in which we shall address the objectives of this research based on our descriptive and empirical findings in the previous chapters. Thereafter, provide overall recommendations and conclusions respectively.

6.1. Discussion

In our quest to find out whether trade liberalization is a curse or blessing for developing countries like Zambia; the study has informed us, based on GDP performance, that trade liberalization blesses some countries but also curses others. Notably developing countries like Zambia whose economies are more open to trade as shown in this study, yet their top exports are raw materials and have trade structures that divert from world patterns (see Appendix 1 and 2) get cursed from trade liberalization.

Apart from a few countries like South Africa, the largest exports of most African countries as of 2014 were still primary commodities with Zambia exporting 67% ores and metals over two decades after trade liberalization. Nigeria had 94% from fuels, Angola 98% from fuels, Congo D.R 77% from ores and metals and Ethiopia 68% from agricultural products. Yet most of these countries are well more integrated into the global system than industrialized countries whose top exports come from manufacturing sector as it were for China 94% and South Korea 87% (UNCTAD, 2016).

The foregoing facts keeps developing countries within the nomenclature of the 'resource curse' or 'paradox of plenty' [52], in which they are perpetually fixed on the downstream of the global value chain system as merely suppliers of raw materials whose prices are vulnerable to global financial contagions and have excessively low income and price elasticity of demand.

Our findings are also consistent with Buffie and Mano [53] in a study on trade, growth and poverty in Zambia using a dynamic general equilibrium model in which he found that, policy packages that combine an escalated structure of protection with an escalated structure of export promotion score best, not solely trade liberalization. His study further found that, there was no support for the view that free trade or a low uniform tariff is approximately optimal. This means that, there is no guarantee that trade liberalization will bless developing countries. Sun and Heshmati [39] demonstrated that increasing participation in the global trade helped China reap the static and dynamic benefits, stimulating rapid national economic growth; this seems to be contrary to the case of Zambia. However, this does not mean that open to trade is always a curse, instead, it must be done gradually and experimentally with a focus on import substitution industrialization, and this helped China to emerge as a success story in trade liberalization among other countries.

In terms of social welfare, the poor economic performance in GDP also translated into relatively low income per capita for Zambia. The study also found a reasonable section of the population of Zambia (74.3%) still living below the poverty line. Meaning that, trade liberalization had other benefits but did not address the social welfare of people. Our results were also consistent with Topalova [22] in his study on some selected Indian districts that were exposed to high levels of liberalization and were found to be poorer than before.

This study further enjoy a formidable backing from the World Bank [54] who concluded that, while openness to trade can be an important spur to growth, trade liberalization alone is insufficient for generating widely shared income gains citing the fact that, while developed countries have low trade protection, on average, the areas where they maintain protection are exactly the sectors where LDCs (Zambia in this case) are potentially competitive (i.e. agriculture and labour intensive manufactures). These sectors confront the greatest trade barriers putting the world's poor at a particular disadvantage.

The study further sought to establish the major constraints to gains from trade liberalization in developing countries. Our findings suggested that, in addition to several other impediments, high natural resource

contribution to GDP as well as export of primary (raw) commodities on the international markets causes developing countries like Zambia to lose out from trade liberalization in the event where commodity prices plunge down. These faults were also reported by the IMF [31,47] who cited unstable prices of raw materials as a major stabling block to economic performance in Zambia, Comoros, Madagascar, Nigeria and Ghana.

Notwithstanding that, our regression results point to the fact that, openness to trade, FDI, exports, imports and inward FDI have a positive and statistically significant influence on GDP when used as independent proxies for trade liberalization. Our findings were also consistent with Krueger (2003), Parikh and Stirbu [15], Dava [16], Beata and Li [20] and Kora and Gjoni [14] where trade openness positively contributed to economic output.

However, when we added a series of control variables such as manufacturing, total reserves, taxes on goods and services and general government revenue to each one of our variables, their influence on GDP were either negative and statistically significant or positive but not apparent (see chapter 5). In several attempts, it showed that, their unit increase would reduce GDP due to the pressures they may exert on total factor productivity (TFP) of domestic firms. For example, excessive imports of manufactured goods that are domestically produced may impinge on production possibility functions of local firms and since imports are usually discounted from GDP, the overall output reduces.

The same is also true for taxes on goods and services. However, here is the challenge: we found that Zambia is more open than China yet its economic output and general welfare is lower than China; and the model tells us that, openness to trade influences GDP in the positive direction, it follows that, further opening to trade as the model suggests would only further curse Zambia or slightly improve its economic performance.

Since Zambia is not very different from other developing countries that we have found to be more open than China yet export raw materials, we are tempted to assume that, several other developing countries have the similar experiences as Zambia with their growth being largely driven by exogenous means as opposed to endogenous model⁴⁸. Notwithstanding that, below is our conclusion.

6.2. Conclusion

In summation, this paper intended to find out whether trade liberalization is a curse or blessing for developing countries using China and Zambia as a case study. The paper concludes that, trade liberalization is a double-barreled phenomenon: while it has remarkably blessed several countries like the Asian Tigers (South Korea, Singapore, Taiwan, Hong Kong) and China who focused on substantial industrialization, it has also cursed some developing countries like Zambia who meet the following economic conditions;

Firstly, they have been over integrated into the global economic system for decades yet their top exports still

come from primary commodities. Secondly, unstable economic output with a higher proportion of natural resource contribution to overall GDP. Due to lack of diversification, their GDP performance only improves when prices for their raw materials are favourable on the global market. Thirdly, low technology absorption and contribution to manufactured exports due to lack of innovation and intensive investment in education. Fourthly, a considerable proportion of the population still live below PPP \$1.25 per day despite liberalizing their economies several decades ago.

However, it is imperative to note that, despite concluding that trade liberalization is a curse for resource-dependent developing countries, a free trade regime is very essential in financing further development and industrialization in developing countries if well managed by prudent and visionary leadership. More so, it improves the overall welfare of people in various capacities such as reduced prices, consumer choices and job creation. Even so, most of these privileges are quite intricate and may only be enjoyed more by a smaller section of the population at the expense of the marginal people who may have initially benefited from government protection and subsidized production. To this end, the next subsection gives the recommendations of this study.

6.3. Policy Recommendation

The paper makes the following policy recommendations for Zambia and other developing countries based on the findings of the study;

- Developing countries should moderate their integration into the global economy until they establish a concrete base for industrialization to compete with industrialized countries. To do so, they should liberalize sectors they have no comparative advantage in and protect the sectors they are comparatively competent in.
- Gains from trade must be channeled and invested in value addition projects to revamp the industrial system and change the composition of export products from primary to manufactured goods. Foreign firms who have invested in extracting raw materials must be encouraged to locally refine the extracts to create a platform for industrialization.
- Trade liberalization creates losers and winners depending on a number of country specific factors. Therefore, the adoption of trade liberalization regime must be accompanied by sound management and effective planning to maximize benefits while mitigating shortcomings.
- Running a country is as good as running a home. If the owner of the home cannot entrust all responsibilities of his home to a friend, then the government too must be involved in business through public-private partnership (PPP) and not only as a tax collector. This partnership will also bridge up the gap between government policy on paper and reality.
- Severe protectionism (through tariffs and import quotas) on domestic firms that are inefficient in an industry can lead to economic stagnation. To this effect, developing countries like Zambia should

48 <http://www.investopedia.com/terms/e/exogenous-growth.asp?layout=infini&v=5C&adtest=5C&ato=3000>; accessed on 2023-04-9.

consider augmenting the economic efficiency and international competitiveness of key industries (such as Mining and Agriculture) as an alternative to protectionist policies.

- Developing countries should strike a balance between exogenous (externally induced) and endogenous (internally induced) growth through locally crafted technology. This will curtail the dependence syndrome.
- To comply with W.W. Rostow's second stage of growth, preconditions (which in my view should precede trade liberalization) such as stable energy supply system, transportation/communication networks and other related infrastructures and institutions must be put in place to augment productivity.

Further Research

- Further research should consider scaling up the sample to more than two countries for conclusive results.
- Use other proxies of trade liberalization such as tariffs and NTBs.

Acronyms

BoP	Balance of Payments
C-D model	Cobb-Douglas (Production Function) Model
CGE	Computable General Equilibrium
D.R Congo	Democratic Republic of the Congo
EGT	Endogenous Gravity Theory
EME	Emerging Market Economies
ETR	Effective Tariff Rate
FDI	Foreign Direct Investment
GATT	General Agreement on Tariff and Trade
GDP	Gross Domestic Product
GNI	Gross National Income
GVC	Global Value Chain
HHI	Herfindahl -Hirschman Index
ICT	Information and Communication Technology
ILO	International Labour Organization
IMF	International Monetary Fund
LFPR	Labour Force Participation Rate
MNCs	Multinational Corporations
MTN	Mobile Telephone Network
NTB	Non-Tariff Barriers
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares
PPF	Production Possibility Frontier
PPP	Purchasing Power Parity
R&D	Research & Development
SADC	South African Development Community
SAPs	Structural Adjustment Policies
TFP	Total Factor Productivity
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UAE	United Arabs Emirates

UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
USAID	United States Agency for International Development
WTO	World Trade Organization
WWII	World War II

Statement of Competing Interests

I declare that the dissertation submitted is the research highlight I achieved with the help of my supervisor. As far as I know, there are neither research results published in journals nor the materials used for applying for the degree in SEU or other educational institution except for those marked in the paper. Any contribution made by my co-partners has been noted in the paper and express my gratitude here.

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Appendix

Appendix 1. Average Concentration and diversification indices of exports and imports (1995-2014)

Country	# of products	Concentration Index	Diversification Index
Zambia	144	0.60	0.86
China	249	0.36	0.46
Nigeria	185	0.84	0.85
S/Korea	243	0.15	0.43
S/Africa	251	0.13	0.54
World	260	0.07	0.00

Source: Compiled by author using UNCTAD (2016) merchandise trade matrix

Note: [Concentration index/Herfindahl -Hirschman Index (HHI): from 0-1: Index closer to 1= exports or imports highly concentrated on a few products. Values closer to 0 = exports or imports more homogeneously distributed]

[Diversification index: from 0-1; a value closer to 1=greater divergence from the world pattern. This index is a modified Finger-Kreinin measure of similarity in trade].

Appendix 2. Indicator of similarity in merchandise trade structures, 1995-2013

[From 0-1: values closer to 1 indicates similarity in trade structures between countries]

	1995	2000	2005	2010	2011	2012	2013
China	.52	.54	.54	.55	.54	.53	.54
Zambia	.12	.16	.13	.13	.14	.20	.18
Nigeria	.11	.12	.14	.19	.20	.21	.21
Japan	.62	.62	.58	.57	.60	.58	.59
S/Africa	.50	.45	.42	.43	.39	.41	.43
Singapore	.51	.54	.51	.52	.50	.50	.50
World	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: Compiled by author using UNCTAD (2016), merchandise trade indices; <http://unctadstat.unctad.org>.



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