



Applying the Growth Identification and Facilitation Framework: The Case of Zambia

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Abstract: Zambia's copper mining industry has been the country's mainstay since its independence in 1964. Mining has played a key role in the economic and social development of Zambia and it remains a pillar to its economy. The objective of this paper was to identify the sectors in which Zambia has a comparative advantage in. In doing so, the Growth Identification and Facilitation Framework (GIFF) was applied. The GIFF is a practical policy tool operationalizing key insights of New Structural Economics, to help policymakers in least developing countries (LDCs) to catching-up by developing feasible and sharply focused policies. In doing so, LDCs are able to identify and unlock their latent comparative advantages to achieve structural transformation. Through the comparison with Vietnam, Indonesia, Morocco and Ghana, Zambia's comparative advantage sectors include agriculture, mining, manufacturing and tourism. These sectors ought to be exploited in a bid to realize the development potential of the country, and thus transform the comparative advantages into international competitive advantages. Based on the analysis of the constraints on the development of Zambia's agriculture, mining, manufacturing and tourism sectors, the paper proposes some measures for the government to undertake so as to deal with these constraints, in order to promote the development of Zambia into a modern, high-income country.

Keywords: New Structural Economics, Economic Growth, Comparative Advantage, Growth Identification and Facilitation Framework, Zambia

1. Introduction

Zambia is landlocked and a resource-rich country with a population of about 17.9 million people in the center of Southern Africa. It shares its border with eight countries (Angola, Botswana, Democratic Republic of Congo, Malawi, Mozambique, Namibia, Tanzania, and Zimbabwe) that serve as an expanded market for its goods [49]. The copper mining industry has been the country's mainstay since its independence in 1964. Mining has played a key role in the economic and social development of Zambia and it remains a pillar to the Zambian economy [53].

From 1964x tow the earlyy1990s, the country followed a pervasive economic policy of state intervention in factor and product markets and large-scale state ownership of productive assets [47]. Over the 1980s, incomes fell rapidly

due to a fall in copper prices and government borrowing made the country became heavily indebted [6]. During the period between 1970 and 1990, the economic performance of the country collapsed [40].

In an effort to reverse the economic decline and put Zambia on a path of sustainable growth, the new government that took office in 1991d launched a program of economic stabilization and liberalization. Prices were decontrolled and subsidies eliminated; state enterprise monopolies were ended; market forces were allowed to determine the exchange rate and interest rate; quantitative restrictions on imports were eliminated; the tariff structure was compressed and simplified; inflation was brought down considerably; crop marketing was liberalized; and a far-reaching privatization program made good progress [6].

In 1999, the economy began to grow again and thereafter,

in each year, GDP real growth rate accelerated. However, the economic growth rate was not inclusive as they were no marked efforts by policy makers to use the growth to reduce poverty levels, diversify the export base and to diversify the economy [40].

1.1. Recent Economic Development

Zambia's Vision 2030 (2006-2030) is to transform Zambia into a prosperous middle-income nation by 2030 and to create a new Zambia which is a "strong and dynamic middle-income industrial nation that provides opportunities for improving the well-being of all, embodying values of socio-economic justice. Zambia's recent weakening economic fundamentals, however, have compromised its ability to make the desired progress towards achieving its Vision 2030 objectives and ultimately the SDGs [42].

One of Zambia's biggest structural problems is a heavy reliance on unsustainable debt [38]. In 2017, the International Monetary Fund indicated that Zambia was at high risk of debt distress [11]. From 2010 to 2018, Zambia's debt increased from a debt-to-GDP ratio of 20% to 78% of GDP [12]. Before the COVID-19 (coronavirus) crisis, the country was teetering on the brink and the signs of debt distress were already beginning to show with the burden of servicing debt payments exerting pressure on the currency [38].

Zambia's economic performance has stalled in recent years, after 15 years of significant socio-economic progress and achieving middle-income status in 2011. The country's annual real gross domestic product (GDP) growth rate averaged 6.8%, between 2000 and 2014. Between 2015 and 2019, the GDP growth rate slowed to 3.1% per annum, mainly attributed to declines in agricultural output, falling copper prices and hydro-electric power generation due to inadequate rains. In 2019, economic growth declined significantly, from 4.0% (2018) to 1.4% (Table 1). The services sector growing by 3.5% in 2019, remained the country's key driver of growth, whereas primary and secondary sectors decreased significantly.

Inflation increased to 9.2% in 2019 from 7.5% in 2018 (Table 1), owing to major exchange rate depreciations and an increase in food prices. Monetary policy continued to focus on bringing inflation back to the target range of 6-8% in the second half of 2019. The Bank of Zambia (Central Bank), raised the policy rate by 125 basis points to 11.5% in November as inflation was projected to remain above the target range of 6-8%. To moderate pressure on the exchange rate, the statutory reserve ratio was raised to 9.0% in December from 5.0% and the compliance shifted to daily from weekly [3].

Table 1. Macroeconomic Indicators.

Year	GDP Growth (annual %)	Inflation (CPI, Annual %)	Exchange Rate (ZMK/\$)	GDP per Capita (current US\$)	Total Reserves (% of total external debt)
2008	7.77	12.45	3.75	356.69	37.08
2009	9.22	13.40	5.05	771.60	51.89
2010	10.30	8.50	4.80	948.33	49.23
2011	5.56	6.43	4.88	1093.65	46.78
2012	7.60	6.58	5.14	1304.97	53.17
2013	5.06	6.98	5.39	1430.00	42.65
2014	4.70	7.81	6.15	1434.90	33.49
2015	2.92	10.11	8.64	1445.07	25.20
2016	3.78	17.87	10.31	1464.58	15.46
2017	3.50	6.58	9.53	1548.17	11.98
2018	4.03	7.49	10.45	1683.74	8.26
2019	1.44	9.15	12.91	1463.99	5.30

Source: World Development Indicators

<https://data.worldbank.org/indicator>

Exchange rate data came from the Zambia Statistical Agency

The COVID-19 pandemic exacerbated Zambia's macroeconomic vulnerabilities. The copper prices were pushed down by about 14% through May 2020, by depressed commodity markets. Since the beginning of 2020, the Kwacha (local currency) depreciated by 30% resulting in domestic inflationary pressures and increasing external debt servicing costs [49]. Further, the epidemic created a demand and supply shock. There was a decrease in employment levels on the supply side. The decrease in employment levels was induced by a decrease in the overall supply of commodities. Due to the tremendous financial uncertainty that households faced, consumers and suppliers held off expenditure in order to strengthen their financial position [7].

As a result, the economy was projected to contract by

about 4.5% in 2020. Mining and service sectors were impacted by the global commodities demand and price outlook. The current account deficit was expected to worsen to 3.4% of GDP, while lower copper export earnings and capital inflows put pressure on reserves and the Kwacha. Global demand is falling, and global financial conditions are tightening, posing external risks. Trade tensions between the United States and China, as well as the present COVID-19 situation, would cause a significant decline in copper demand and prices. Unfortunately, these risks stem from a long-standing reliance on copper mining as an economic and export base. To mitigate these risks, Zambia must accelerate diversification and the transition of the economy to a larger, private-sector-led model [49].

1.2. Industry Contribution to GDP

Zambia's agricultural GDP has over the years been sustained at above 6% (Table 2), in line with the Comprehensive Africa Agriculture Development Program (CAADP)'s explicit goal. CAADP's mission is to use agriculture to end hunger and alleviate poverty, by achieving 6% annual growth in agricultural productivity by 2015 [25]. As a result of numerous factors such as rising input prices, reduction in production due to poor rainfall, and depreciation of the local currency, Zambia's agricultural GDP dropped to below 5% in 2017, 2018 and 2019 (Table 2). Following poor rainfall in 2014/15, 2015/16 and the 2018/19 agricultural

seasons, the country recorded a decline in agricultural GDP growth.

The industrial sector contribution reached its peak in 2017 and accounted for 37.30% of GDP in that year (Table 2). The mining, construction, and manufacturing sub-sectors greatly contributed to this growth. The manufacturing sector recorded some positive growth, albeit fluctuations. The agro-processing of food and drinks, textiles, and leather sub-sectors accounted for the majority of growth. Zambia's economy is still dependant on Copper and Cobalt exports to generate most of its revenue in terms of foreign exchange. As a result, the country remains vulnerable to global commodity price swings.

Table 2. GDP and Value added (Percentage of GDP by sector).

Sector	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Agriculture, forestry, and fishing, value added (% of GDP)	9.42	9.65	9.32	8.23	6.78	4.98	6.23	4.02	3.34	2.86
Industry, value added (% of GDP)	32.24	34.44	32.01	32.56	32.94	33.66	34.88	37.30	34.49	34.94
Manufacturing, value added (% of GDP)	7.58	7.52	7.08	6.02	6.82	7.52	7.69	8.13	6.85	6.79
Exports of goods and services (% of GDP)	37.03	40.47	40.08	40.48	38.82	37.14	35.32	34.99	37.96	34.64

Source: World Development Indicators
<https://data.worldbank.org/indicator>

2. The Growth Identification and Facilitation Framework

The Growth Identification and Facilitation Framework (GIFF) is a practical policy tool operationalizing key insights of New Structural Economics (NSE), to assist developing-country policymakers to catching-up by developing feasible and sharply focused policies in a bid to identify and unlock their latent comparative advantages to achieve structural transformation [16]. New Structural Economics is a framework for rethinking development and was proposed by Professor Justin Yifu Lin – the former and the first Chief Economist from developing countries at the World Bank [50].

NSE seeks to examine the factors of economic structure and its evolution in the process of economic development using a neoclassical economic methodology. The beginning point of NSE analysis is the endowments and endowment structure of an economy, which are presented at any given time and are not static. According to NSE, the best approach for a country to achieve dynamic, inclusive, and long-term growth is for it to develop its sectors based on its comparative advantage defined by its endowments in a market economy with an enabling state. NSE, as part of the third wave of development thought, strives to advance theoretical innovations in economics by rigorously evaluating structural disparities between developed and developing countries [17].

The GIFF proposes a six-step approach to growth identification and facilitation [18]:

Step One: choosing the right target. The government in a developing country can identify the list of tradeable goods and services that have been produced for about 20 years in

dynamically growing countries with similar endowment structures and a per capita income that is about 100% to 300% higher than their own (or a similar per capital income about 20 years ago).

Step Two: removing binding constraints. The government may give priority to those in which some domestic private firms have already entered spontaneously, and try to identify constraints to quality upgrading or further firm entry. Take action to remove these constraints.

Step Three: attracting global investors. In industries where no domestic firms are currently present, or only a few domestic firms are doing exports, seek foreign direct investment (FDI) from countries examined in step 1, or organize new firm incubation programs.

Step Four: scaling-up self-discoveries. Due to the fact that every country may have some unique endowments, which may produce goods valuable for the market, and some new technologies/industries might not exist 20 years ago, in addition to the industries identified in step 1, the government should also pay attention to spontaneous self-discovery by private enterprises and give support to scale up successful private innovations in new industries.

Step Five: recognizing the power and magic of industrial parks. In countries with poor infrastructure and bad business environments, special economic zones or industrial parks may be used to overcome barriers to firm entry, attract FDI, and encourage industrial clusters.

Step Six: providing limited incentives to the right industries. The government may compensate pioneer firms identified above with: tax incentives for a limited period; direct credits for investments; and access to foreign exchange.

Justin Yifu Lin and Volker Treichel [17] first applied the GIFF to the case of Nigeria. The GIFF was later extended to

Kazakhstan [21], Small islands economies [20] and to Uganda [22]. Nonetheless, several LDCs have not been subjected to the GIFF. As a result, the study's purpose is to close this gap by applying the GIFF to Zambia.

2.1. Selecting Benchmarking Countries

This requires selecting countries with a per capita income of 100-300% above Zambia's. Table 3 below, shows a list of the countries that meets this criterion. And removing slowly-growing countries, the following countries were left, namely: Vietnam, Indonesia, Morocco, Ghana.

Table 3. GDP per capita PPP in 2018.

Country Name	GDP per capita 2018 (US \$)	Percentage to Zambia (%)
Zambia	1,540	100
Vietnam	2,564	166.49
Kosovo	4,281	277.99
Indonesia	3,894	252.86
Morocco	3,238	210.26
Bolivia	3,549	230.45
Ghana	2,202	142.99
Egypt	2,549	165.52

Source: Macrotrends -The Premier Research Platform for Long Term Investors, see <https://www.macrotrends.net/>

Vietnam, while not a resource-rich country, it excels in labour-intensive manufacturing and has witnessed rapid economic growth over the last two decades. Vietnam's high growth rate makes it an appropriate comparator, especially in view of its labour-intensive economy. Vietnam vigorously promotes national industrialization and modernization, and its processing and manufacturing industry has developed rapidly. In addition, agriculture is an important economic pillar of Vietnam. Agricultural production accounts for over 40% of the country's total land area. Further, agriculture employs 43% of Vietnam's 92 million people, making it the country's largest employment ahead of services and industry [9].

Indonesia is a natural resource-rich country, also known for specializing in labor-intensive manufacturing. It has developed industries that match to its latent comparative advantage by successfully utilizing both its natural resources and its large labor supply. Besides, Indonesia is rich in tourism resources, with rich natural landscapes such as oceans, lakes and rain forests, as well as diverse cultural landscapes. Tourism is one of the pillar industries of Indonesia's priority development. In recent years, tourism has boomed making it one of the most important sources of foreign exchange earnings [33]. In 2016, Indonesia attracted 1.2 billion international tourists, with an average annual growth rate of 4.4% since 2012 [45].

Morocco's economy ranks sixth in Africa. Its main economic pillars are tourism, remittances and phosphate exports. Morocco is rich in mineral resources, with 75% of the world's phosphate reserves, and the processing of phosphate into fertilizers and phosphoric acid for export are major economic activities [34]. Morocco also

produces minerals. Likewise, tourism and related services have become an increasingly important sector of the Morocco economy. Tourism accounts for 17% of Morocco's gross domestic product and creating more than 2 million direct jobs [34].

Ghana is relatively developed among West African countries. Agriculture dominates the country's economy, accounting for over 20% of GDP and employing more than half of the workforce [30]. Corn, rice, bananas, peanuts, timber and cassava are among the agricultural goods grown on Ghana's vast plains and plateaus. Other important industries include mining, light manufacturing, food processing and lumbering. Ghana is rich in natural resources such as gold, oil, diamonds, and aluminum. Ghana has been the second-largest gold producer in Africa since the 1990s. Gold, cocoa and oil exports and personal remittances are the main sources of foreign exchange [43].

2.2. Commodities These Countries Export

This section identifies industries in these comparator countries which have the strong manufacturing and processing ability and/or abundant natural resources and tourism resources.

Vietnam exports equipment for broadcasting (\$30.7B, 14%), telephones (\$14.9B, 6.8%), integrated circuits (\$14.6B, 6.6%), textile footwear (\$9.5B, 4.3%), leather footwear (\$6.06B, 2.8%) and knit sweaters (\$3.5B, 1.6%), revenue stand at about \$220B. The top export destinations of Vietnam are the United States (\$46.2B), China (\$39.9B), Japan (\$18.1B), South Korea (\$16.1B) and Germany (\$10.9B) [27].

Morocco exports cars (\$2.62B, 11%), mixed mineral or chemical fertilizers (\$1.7B, 6.8%), insulated wire (\$1.53B, 6.1%), non-knit women's suits (\$1.33B, 5.4%), export revenue stand at about \$24.9B. The top export destinations of Morocco are France (\$5.57B), Spain (\$5.46B), Germany (\$1.16B), Italy (\$1.13B) and the United States (\$1.09B) [28].

Indonesia exports coal briquettes (\$18.9B, 10%), palm oil (\$18.2B, 9.6%), petroleum gas (\$8.99B, 4.8%), rubber (\$5.68B, 3.0%) and crude petroleum (\$5.34B, 2.8%), export revenue stand at about \$188B. The top export destinations of Indonesia are China (\$25.8B), the United States (\$19.9B), Japan (\$19B), India (\$15B) and Singapore (\$14.4B) [29].

Ghana exports gold (\$8.35B, 49%), crude petroleum (\$2.97B, 17%), cocoa beans (\$1.77B, 10%), cocoa paste (\$538M, 3.1%) and coconuts, Brazil Nuts, and cashews (\$325M), export revenue stand at about \$17.1B. The top export destinations of Ghana are India (\$5.09B), China (\$1.9B), Switzerland (\$1.84B), South Africa (\$918M) and the Netherlands (\$911M) [30].

2.3. Zambia's Major Import Sources by Product 2017

The major source of imports in 2017 was South Africa, accounting for 31%. The main import product was Refined Petroleum, Non-Fillet Frozen Fish, Nitrogenous Fertilizers, Delivery Trucks, Liquid Pumps, Mixed Mineral or Chemical

Fertilizers accounting for 2.61B of the total import bill from that country.

The Democratic Republic of the Congo was second accounting for 21%. The major import products were Copper Ore, Cobalt Oxides and Hydroxides, Cobalt Ore accounting for 1.78B of the import bill from that country.

China was third, accounting for 14%. The major import products were Broadcasting Equipment, Stone Processing Machines, Metalworking Machine Parts, Planes, Helicopters, and/or Spacecraft, Aircraft Parts, Iron Structures, accounting

for 1.18B of the import bill from that country.

Other sources of Zambia's imports were Kuwait (Crude Petroleum, Refined Petroleum), United Arab Emirates (Refined Petroleum, Nitrogenous Fertilizers, Organo-Sulfur Compounds, Sulfonated, Nitrated or Nitrosated Hydrocarbons, Industrial Food Preparation Machinery) and India (Packaged Medicaments, Special Pharmaceuticals, Large Construction Vehicles, Raw Plastic Sheetting, Specialized Vehicles, Glass Bottles), and accounted for 11.7% of Zambia's imports (See Table 4).

Table 4. Zambia Main Import Partners in 2017.

Products	Import Countries	\$ Billion (USD)	Percent (%)
Refined Petroleum, Non-Fillet Frozen Fish, Nitrogenous Fertilizers, Delivery Trucks, Liquid Pumps, Mixed Mineral or Chemical Fertilizers	South Africa	2.61	31
Copper Ore, Cobalt Oxides and Hydroxides, Cobalt Ore	Democratic Republic of the Congo	1.78	21
Broadcasting Equipment, Stone Processing Machines, Metalworking Machine Parts, Planes, Helicopters, and/or Spacecraft, Aircraft Parts, Iron Structures	China	1.18	14
Crude Petroleum, Refined Petroleum	Kuwait	0.424	5
Refined Petroleum, Nitrogenous Fertilizers, Organo-Sulfur Compounds, Sulfonated, Nitrated or Nitrosated Hydrocarbons, Industrial Food Preparation Machinery	United Arab Emirates	0.313	3.7
Packaged Medicaments, Special Pharmaceuticals, Large Construction Vehicles, Raw Plastic Sheetting, Specialized Vehicles, Glass Bottles	India	0.251	3.0

Data Source: The Observatory of Economic Complexity
<https://oec.world/en/resources/about/>

2.4. Identifying the Sectors for Growth in Zambia

Based on the above analysis, Zambia has the development potential in agriculture, mineral, manufacturing and tourism sector. Agriculture can contribute more to Zambia's economic wellbeing and bring about tangible benefits such as job creation and poverty alleviation. The level of agricultural modernization and agricultural processing capacity needs further improvement.

Also, Zambia is rich in mineral resources and has developed mining industry, but its deep processing capacity is insufficient. Therefore, efforts should be made to promote technological upgrading of mines, accelerate the development rate of mineral products, and improve the deep processing capacity and level of mineral products.

Besides, its manufacturing industry is relatively backward, and its machinery equipment, chemical products and other manufactured products mainly rely on imports, so it needs to further improve its manufacturing and processing capacity.

Lastly, Zambia has some important tourist attractions such as the Victoria falls, with rich tourism resources and great potential for development. Therefore, Zambia should learn from the experience of Indonesia and Morocco, fully tap the economic efficiency of tourism, and promote the diversified development of tourism.

3. Value Chains Analysis of Selected Sectors

3.1. Agriculture

Zambia is endowed with a large arable land resource base

of 42x million hectares, ideal for fish, crops and livestock production. However, only 1.5 million hectares is cultivated every year. A lot of agricultural land remain unutilized [54]; [55]. Notwithstanding its importance for employment and livelihoods, its percentage of total GDP in Zambia is minor compared to that of other Sub-Saharan African countries, and it has been declining over time, as predicted by development theory [5, 48].

3.1.1. Constraints in the Agricultural Sector

- (i) *Macroeconomic*: Unpredictable changes in exchange rates, interest rates and inflation thus raising the price of agricultural inputs and implements [4, 10, 23].
- (ii) *Climate Change*: Droughts have been more frequent and severe in Zambia. The droughts of 1991/92, 1994/95, 1997/98, 2004/2005 and 2007/08 [13, 15]. Also, the recent droughts that occurred in the 2018/19 farming season, resulted in severely reduced crop yields and production thereby affecting and worsening the quality of life for vulnerable smallholder farmers.
- (iii) *Pests and Diseases*: The outbreaks of frog eye in soya beans, Larger Grain Borer in maize, and weevils in sweet potatoes thus affecting agricultural production and crop yields [10, 8, 4]. Also, the outbreaks of east coast fever (corridor disease), contagious bovine pleuropneumonia and trypanosomiasis in livestock [10].
- (iv) *Agricultural Finance*: Lack of agricultural credit, coupled with liquidity problems [10]. The undersupply of agricultural finance with only 0.24% of smallholder farmers access loans from commercial sources [36]. The majority of microfinance institutions (MFIs) (i.e., 75% of the 40) have been shown to prefer issuance of

salary-based loans, much to the exclusion of agriculture [26].

- (v) *Agricultural Infrastructure*: Poor agricultural infrastructure such as inaccessible road networks and/or poor roads. This increases transaction costs, reduces farmers level of productivity and revenue [10, 35].

3.1.2. Measures to Deal with the Constraints in the Agricultural Sector

The government should undertake the following measures;

- (i) *Climate Change Adaptation*: Recruited farmers into initiatives aimed at enhancing adaptation to climate change. These include, promoting irrigation, water harvesting, and construction of dams in rural areas to increase irrigation farming and reduce dependence on rain-fed agriculture. Adaptation strategies are very effective at mitigating the negative impacts of climate extremes on crop yields.
- (ii) *Taking Preventive Measures*: When planning cultivation methods, farmers should be encouraged to consider choosing preventive measures such as disease-free seed and selecting resilient varieties. Also, ensuring ease of access of agricultural inputs such as pesticides for both crops and livestock.
- (iii) *Support Mechanisms*: There is need to put in place and/or support mechanisms that foster the strengthening of the financial infrastructure as well as the development of a sustainable agricultural finance system, in a bid to scaling up agricultural finance access by farmers.
- (iv) *Infrastructure Development*: There is need to improve and develop rural infrastructure such as roads, in order to reduce production costs. Infrastructure is linked to agriculture and rural development. On the part of farmers, improved road infrastructure is a positive sign of closeness to economic resources and market access.

3.2. Mineral Processing

The secondary processing of minerals is gaining momentum within the manufacturing sector. Government incentives support new businesses that process copper rather than exporting the raw copper. There is scope for investment in the manufacture of copper wire and other copper products, such as copper plate and tubing, and also for increased copper rod and cables manufacturing activities which are already being undertaken in the country (and account for a significant proportion of Zambia's non-traditional exports). The cutting and polishing of gemstones for export also has great potential value, as does the manufacturing of jewelry [52].

3.2.1. Constraints in the Mineral Sector

- (i) *Power Supply*: The mining industry is the greatest electricity consumer, accounting for more than half of all electricity use [54]. Load shedding usually at peak times decreases the mining sector's total efficiency [56].

- (ii) *Infrastructure*: Zambia's railway network has low traffic densities, which are below the viability criterion of at least 2 million tons per kilometer, making it difficult to generate the necessary funds to sustain assets [57].

- (iii) *Investment*: Low investment especially by the small and medium firms has been a challenge, due to the less incentives for investment provided, to convince Zambians to invest in the mining sector even as small or medium entrepreneurs [14].

3.2.2. Measures to Deal with the Constraints in the Mineral Sector

The government should undertake the following measures;

- (i) *Investing in Renewable Energy*: The government should consider investing in solar and wind energy, which are renewable to fill the deficit power gap. Zambia has sunshine almost throughout the year as well as wind, these advantages could be used for power production.
- (ii) *Infrastructure Improvement*: Infrastructure (tangible and intangible) improvement is needed to adequately facilitate operations and transactions. The marginal rate of return on investment and transaction costs of the mineral sector are affected by infrastructure.
- (iii) *Strengthening the Business Environment*: The government need to strengthen the business enabling environment by promoting reforms to facilitate entry and operation of small and medium enterprises. Also, supporting SMEs and start-up acceleration, and early-stage financing.

3.3. Manufacturing

The value added of Zambia's manufacturing sector has consistently increased from around 7.6% of GDP in 2010 to 8.1% in 2018 [51]. Nonetheless, for export markets, the sector must produce a diverse range of high-quality value-added intermediate and final products. Currently, the main manufacturing activities in Zambia are the Food, Beverages and Tobacco sub-sector [55]. To ensure further industrialization and a strong manufacturing sector in Zambia, annual growth rates of around 7% will be required [51].

3.3.1. Constraints in the Manufacturing Sector

- (i) *Access to Finance*: According to the Enterprise Survey 2013, 38% of Zambian manufacturing firms report that access to finance is a key constraint. Limited availability long-term financing and high lending rates continue to be important growth inhibitors, especially for small and medium-sized businesses [24, 44].
- (ii) *Power Supply*: A reliable power supply is needed if the manufacturing sector is to grow and diversify [1]. Zambia relies very much on hydro power (approx. 85% of capacity) coming from the Kariba Dam. In 2019, electricity was seen as a very severe or major challenge by 65% of manufacturing firms [44].

- (iii) *Skills-Related Bottlenecks*: Despite relatively high levels of formal education, the factual lack of skills in manufacturing is still an issue, which is in line with the findings from the Enterprise Survey of 2013 and 2019 [44].
- (iv) *Tax Rates and Administration*: Zambian firms view tax rates and tax administration as a very severe or major obstacle that increased over time, from 9% of manufacturing firms in 2013 to 18% in 2019 [44].

3.3.2. Measures to Deal with the Constraints in Manufacturing Sector

The government should undertake the following measures;

- (i) *Long Term Financing*: There is need for government to encourage the establishment of long-term financing as well as the development of innovative financing methods such as public-private partnerships.
- (ii) *Investing in Renewable Energy*: The government should consider investing in solar and wind power, which are renewable, to fill the deficit power gap. Zambia has sunshine almost throughout the year as well as wind, these advantages could be used for power production.
- (iii) *Staff Training*: The firms in the relevant manufacturing should opt to train its staff in the relevant skills required, in a bid to develop them and enhance their performance.
- (iv) *Tax Holidays*: Offering tax breaks for first mover firms for a few years, in order to encourage economic activity and foster growth.

3.4. Tourism

The magnificent Victoria Falls, one of the world's seven wonders, is located in Zambia [37]. The vast potential in the tourism sector in Zambia, and the wealth of wildlife have yet to be fully exploited. The country has 20 national parks and 34 game management areas with a total of 65,000 km² set aside for wildlife conservation. Also, Zambia boasts of various traditional ceremonies that take place at different times of the year where the rich cultural heritage is displayed [54, 55].

3.4.1. Constraints in the Tourism Sector

- (i) *Administrative Bottlenecks*: The time-consuming procedure of getting a license, as well as the various licenses required to formally function in the sector. Some tourism enterprises need as many as 58 different permits to operate [39].
- (ii) *Decrease in Wild Life Population*: Major national parks and wildlife reserves in the country have lost a significant number of wildlife/wild animals in part due to illegal poaching and the encroachment of humans on animal habitats.
- (iii) *Lack of an Effective Marketing Strategy*: This poses a challenge in selling tourism products to the world due to a lack of a comprehensive marketing strategy to promote the products, even though the country has an

abundance of tourism products.

- (iv) *Underdeveloped Tourism Infrastructure*: Road infrastructure in most tourist attraction centres is poorly developed, including poor access roads and a lack of cable transportation in some tourist attraction centres. This therefore has contributed to slowing the sector's growth and development.
- (v) *Power Supply*: The country continues to experience interrupted electricity supply for both domestic and industrial use, including interrupted electricity supply available to tourist destinations.
- (vi) *Lack of Incentives for Investment*: There has not been incentives for investment by the small and medium-sized businesses in the tourism sector.

3.4.2. Measures to Deal with the Constraints in the Tourism Sector

The government should undertake the following measures;

- (i) *Wildlife Protection*: There is need to protect wildlife population against illegal poaching in the protected national parks and wildlife reserves. This can be done by discouraging people to poach as well as working with illegal wildlife poachers, and offering them alternative livelihood skills. Also, the need to increase wildlife population by restocking measures.
- (ii) *Marketing Strategy*: There is need to put in place a better tourism marketing strategy that will help in boosting the tourism business and increase the sector's bottom line. Doing so is crucial to standing out from the competition and for the tourism sector to establish itself as an important sector in the country. Some of the tourism marketing strategy include (but not limited to); having a modern looking website, creating a social media presence, utilizing online booking and payment, and taking advantage of search engine optimization.
- (iii) *Infrastructure Development*: In order to develop the tourism sector, infrastructure development remains one of the key areas to seriously look at. Infrastructure construction and upgrade should be undertaken such as targeted roads, hotels, lodges and provision of cable cars. There is need to speed up infrastructure development in order to achieve the massive potential that the tourism sector has.
- (iv) *Investing in Renewable Energy*: On average, Zambia receives a lot of sunshine in a year. It is incumbent upon policy makers to invest in renewable energy technologies such as solar which will complement electricity generation in the country. This investment can and will eventually eliminate power shortages, bring electricity and development opportunities to many sectors and spur industrial growth.
- (v) *Investment Incentives*: Incentives for investment by the small and medium firms should be put in place. Further, the need for more initiative and collaboration between these businesses and government at all levels, as well as all types of businesses that influence tourism and are part of the tourism product. This will help to

maximize the tourism market's potential, allowing the country to compete more effectively on the global stage.

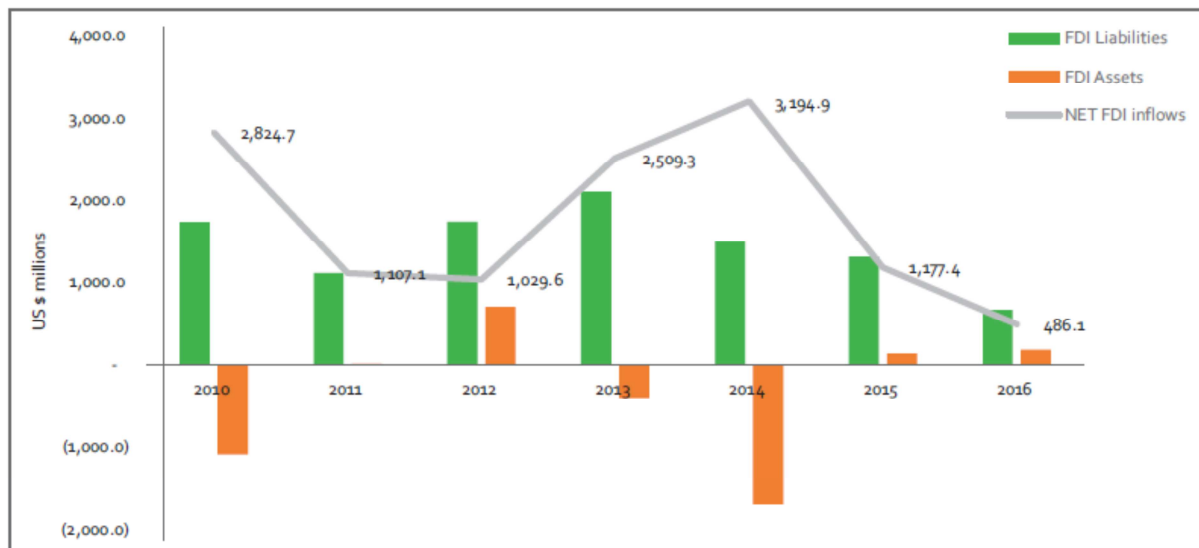
4. How to use Foreign Direct Investment (FDI) to Incubate New Sectors

The majority of developing countries, particularly those in Africa, whose economies are still emerging, they face a shortage of investible funds, and there is a strong preference for foreign investment to fill the gap [2]. Over the years, the potential benefits of foreign direct investment on developing countries, both directly and indirectly, have been extensively recognized by development economists [32]. Generally, FDI bring in transfer of expertise, technology transfer and innovation capacity to beneficiary countries [46]. In addition,

FDI flows are accountable for a country's long-term profitability and are the primary means of transforming a recipient country's economy into a productive one [31].

4.1. Zambia FDI Trends

Zambia's net foreign direct investment inflows sharply declined by 58.7% to US\$486.1 million in 2016 (Figure 1). This was mainly due to a reduction in FDI liabilities by 49.2% to US\$662.8 million. However, Net acquisition of FDI assets rose by 38.6% to US\$176.7 million [54, 55]. Based on the UNCTAD's World Investment Report of 2020, Zambia received USD 753 million in FDI in 2019, up from USD 408 million in 2018. The country is heavily reliant on FDI in the mining sector which continues to be dominated by large mining investments from Australia, Canada, China, United Kingdom, and the United States [41].



Source: Foreign Private Investment and Perceptions Survey, 2016 and 2017

Figure 1. Net FDI in Zambia, 2010 – 2016.

In the case of Zambia, there has not been significant FDI inflows in the other sectors such as tourism, agriculture and manufacturing in which the country has a comparative advantage. Thus there is need to attract FDI inflows in the aforementioned sectors to support value addition processes and export diversification thereby diversifying the economy and become less dependent towards mining. Zambia can identify major light manufacturing imports from China and implement measures to encourage Chinese enterprises to transfer production to Zambia to meet domestic demand and export to the global market.

4.2. Role of Industrial Parks in Industrial Upgrading

Zambia continues to struggle in diversifying its economy and in promoting private sector-led growth in order to alleviate poverty. Lack of appropriate infrastructure has contributed to the high cost of conducting business. Infrastructure is one of the key impediments to improving the investment climate in Zambia thereby impeding the country's

development. The gap between investment in infrastructure and actual needs is still large. One of the options that Zambia has at its disposal to overcome this resource gap, is the involvement of the private sector. However, this will require to have adequate tools to properly assess and manage the implications of this involvement. The alternative is for Zambia to understand the importance of industrial parks in accelerating structural change.

Zambia, introduced multi-facility economic zones (MFEZ) in 2005, to improve the country's competitiveness and industrialization. The zones were established to create a favorable business environment, encourage exports, and boost domestic trade. Currently, Zambia has three main MFEZs; (a) The Lusaka South Multi Economic Zone (LS-MFEZ), (b) Zambia-China Economic & Trade Cooperation Zone (ZCCZ) (also called The Lusaka East Multi Facility Economic Zone) (c) Chambishi Multi facility Economic Zone (CMFEZ) – a sub-zone of ZCCZ. However, investors complained about public sector's weak institutional capacity

and inefficient services, inadequate infrastructures and weak zones-to-local firms linkages [58].

Other than providing adequate infrastructure, there is need for the Government of Zambia to put in place targeted policies to proactively attract FDIs to sectors where Zambia has latent comparative advantages. For instance, Zambia can identify major light-manufacturing imports from China and adopt policies to encourage/subsidize firms in China to relocate of their production to Zambia for meeting the domestic demands and for exporting to global market [19]. As [22] points out, in order to solve the problem of the first-mover, there is need for the government to provide limited incentives, as no private sectors would want to enter into the new industry. As long as they succeed, their successes would quickly be imitated by other firms in a bid to share the gains by many firms. In the eventuality of failure, the first movers supply vital knowledge to the latecomers. Thus the government can compensate for the externalities generated by the first movers by playing a facilitating role, and in mitigating the coordination problem of resolving the bottlenecks in poor infrastructure and business environment. To enter into and scaling up new industries, policymakers may consider compensating pioneer firms in the industries identified earlier with time-limited tax incentives, co-financing for investments, or providing access to foreign exchange.

4.3. Directions for Future Research

Further work is needed on the average wage, including benefits by industry for skilled and unskilled labour in both Zambia and the comparator countries (Vietnam, Indonesia, Morocco and Ghana). This will highlight Zambia's wage competitiveness as well as the relative cost advantage in labour in the sectors identified in this study.

Secondly, there is need to understand Zambia's participation in global value chain (GVC) in the international trade. Since there is a growing trend of GVC, relevant information will be provided to identify subsectors where Zambia has cost competitiveness.

5. Conclusion

Zambia is an African country full of development potential. During 2000 to 2014, the country enjoyed an impressive economic growth with average GDP growth rate reaching 6.8% per year. According to the theoretical framework of New Structural Economics, we analysed the endowments of Zambia, selected Vietnam, Indonesia, Morocco and Ghana as the benchmarking countries, analysed the industries with comparative advantages in Zambia, and identified the constraints faced by relevant industries from the perspective of growth value chains. From our analysis, Zambia has comparative advantages in agriculture, mineral, manufacturing and tourism industries. To guarantee Zambia's sustained economic growth, the country should transform its comparative advantages into competitive advantages, then improve the competitiveness of its goods and services in both

domestic and international markets. From our research based on NSE, we identified key constraints to industrial upgrading in the relevant sectors and suggest that Zambia needs further improvement in infrastructure, manufacturing and processing capacity, economic diversity, energy supply, tax rates and administration, investment incentives, financing and business environment, and we also raise some specific measures towards the growth of relevant value chains. Lastly, we discussed how the Zambian government can put in place a more focused FDI policy to encourage international investors into the subsectors where Zambia has latent comparative advantages.

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