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ISSN: 2365-9793

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ABSTRACT

Political Economy of Industrialization and Industrial Parks in Ethiopia[1]

This study investigates the political economy of industrialization in Ethiopia. It discusses the economic and political institutions during three political regimes and assesses the industrial sector's performance across these different regimes. Further, it evaluates the different industrial strategies and organizational structures for implementing the industrial policies together with the current industrial park strategy and its contemporary impact on employment creation, export promotion, foreign exchange revenues, the value chain, and spillover effects. Both qualitative and quantitative approaches are used for exploring the role of political economy in Ethiopian industrialization. Different political strategies were followed by the political regimes to support the industrial sector. The paper distinguishes between two extreme political strategies of protectionist import substitution industrialization and the outward strategy of export-oriented industrialization. The study confirms that political institutions negatively impacted industry for several decades. The results support focusing on institutions to successfully implement industry policies for inducing the industrialization process in the country. Policies must be implemented considering existing opportunities and resources in the country along with their respective economic outcomes instead of excessive priority being given to the political interests of the regime in power.

JEL Classification: J24, O14, O25, O47, P48

Keywords: industrialization, industrial parks, political economy, industrial strategy, industry growth, Ethiopia

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[1] A previous draft of this paper was presented at the KTH Royal Institute of Technology in Stockholm and at the Jonkoping International Business School, Jonkoping, Sweden. We thank Hans Lööf and other participants of both the seminars for their comments and suggestions.

1. Introduction

Industrialization traditionally includes manufacturing, mining, construction, and utilities such as water, electricity, and gas but recently it has expanded to include the process of development that is balanced and sustainable as far as the sociopolitical and economic realms of a society are concerned (Nzau, 2010; Oyenga, 1968). It is also a generic term for a set of economic and social processes related to the discovery of more efficient ways of creating value (Simandan, 2009). Industrialization provides several advantages such as reducing unemployment, technology transfers, economic diversification, and welfare enhancement (Beji, and Belhadj, 2014; Mayer, 2004). It also contributes significantly to the accumulation of human, physical, and infrastructural capital and provides substantial backward and forward linkages with the other sectors of the economy. (Signe, 2018). Industrialization plays a key role in the process of a nation's economic development and inclusive growth by enhancing an efficient use of resources, generating employment and incomes, and facilitating international trade (Martorano et al., 2017; UNIDO, 2018a).

Deindustrialization on the other hand occurs when employment in the manufacturing sector shrinks through time or it represents a decline in the share of manufacturing value added to the total GDP of an economy (Peneder and Streicher, 2018; Rowthorn and Ramaswamy, 1997). A steady share of manufacturing value added to GDP in an economy or the process by which the manufacturing sector is skipped in the process of development can also be termed as deindustrialization (Cáceres, 2017; Grabowski, 2015). De-industrialization is also considered as the fall in the share of industrial employment in total employment and industrial output in GDP (Schweinberger and Suedekum, 2015). Deindustrialization can be excessive or premature indicating the failing competitiveness of manufacturing (Peneder and Streicher, 2018; Rodrick, 2016). In fact, premature deindustrialization is related with poor industrial performance perhaps rooted in political economy and other features (Alderson, 1999).

The empirical experience of early industrializers such as the UK, US, France, and Germany and new industrializers, more prominently East Asian and Latin American countries provides practical evidence of how industrialization in its different forms enables a structural transformation of their economy (Beji and Belhadj, 2014; Shafaeddin, 1998). Early industrializers managed to industrialize by protecting their infant industries through government interventions in terms of protection and subsidies. There are many explanations for the successful industrialization of late industrializers particularly the East Asian countries including their political economy, cultural, institutional, and international approaches complementing each other (Lajciak, 2017; Shafaeddin, 1998).

Recently, deindustrialization in most western countries has shown a declining level of employment in manufacturing which is attributed to huge per capita incomes and prosperity inclined more towards the service sector instead of the primary or secondary sectors of agriculture and industry respectively (Caceres, 2017; Grabowski, 2015; Rowthorn and Ramaswamy, 1997). In contrast, deindustrialization in most developing countries including sub-Saharan Africa, shows low per capita income, low employment levels, and value added in the manufacturing sector which is attributed to several factors and has implications of a poverty trap (Acemoglu, 2007; Acemoglu and Robinson, 2012; Caceres, 2017; Grabowski, 2015; Rowthorn and Ramaswamy, 1997).

Modern history of Ethiopia is classified into three periods: the pre-1974 or the Imperial period ruled by a king, the Derg regime from 1975 to 1990, and the post-1991 period which is referred to as the Ethiopian People's Revolutionary Democratic Front (EPRDF) regime (Suleiman, 2000). Before 1974, Ethiopia was an empire with a feudal system of government headed by Emperor Haile Selassie from 1930 onwards (Briggs, 2012: Gebreeyesus, 2010; Suleiman,

2000). Following the 1974 revolution, a military regime known as the Derg was followed by the post-1991 EPRDF regime (Briggs, 2012). The EPRDF regime aimed at leaving the history of feudalism, came up with pre-conditions for a market oriented and socially inclusive industrial transformation. The government showed pragmatism and flexibility in choosing and adapting industrial policies (Altenburg, 2010). During this regime, Agricultural Development Led Industrialization (ADLI) development strategy is introduced. Yet, Ethiopia adopted a new federal constitution in 1994 decentralizing many aspects of the economy (Briggs, 2012).

Despite the different policies and regime changes manufacturing as a share of GDP remained to be less than 5% for decades (Gebreeyesus, 2010; Geda and and Berhanu, 1960). All this meant that the country pursued different political ideologies, economic institutions, and industrial strategies and their organizational structures in the process of industrialization though it missed achieving the intended impact of building a strong economy and a dominant industrial sector. Hence, this study investigates the different institutions that came up during the different regimes and their respective outcomes along with evaluating why the efforts made were not able to meet their targets. This paper addresses the research question: what effect does political economy has on industrialization in Ethiopia?

This paper investigates the economic and political institutions during three political regimes and provides detailed information on the economic systems, political strategies, prioritized industries, and the contributions of the industrial sector to GDP. During the Imperial regime, the economic system was market oriented with a centralized administration. The economic policy followed then for encouraging the industrial sector was import substitution. During the Derg regime, the economic system was organized in a different manner. It was a centralized command system that promoted import substitution under central planning by the government. In the latest political regime, a decentralized market-oriented system was followed promoting exporting industries. There were differences in policy directions, yet the performance was poor and did not lead to significant changes in industrialization. Instead there was more of deindustrialization implying an indigenous policy solution with inclusive institution which can smoothly bridge the gap between the contextual industrial policies and their effective implementation.

The rest of this paper is organized as follows. Section 2 reviews theoretical and empirical literature related different industrial policies and their implementing structures. Section 3 gives the data and methods used, and Section 4 has descriptive analysis and discussion of the empirical results. Section 5 gives the conclusion and discusses the policy implications of the findings.

2. Review of Related Literature

In this section theoretical and empirical literature is reviewed on institutions and growth, industrialization versus deindustrialization and industrial policy strategies as well as their organizational structures. The empirical experience of different countries is discussed which is followed by a critical review of literature and the gaps that exist in the context of developing countries.

2.1 Overview of the literature on institutions and growth

The issue of why some countries are rich and others are not is a core question in development economics literature and different theories have tried to address it in different angles. Starting from classical theories of growth, structural models, neoclassical models, contemporary

theories of development like endogenous growth theories, coordination failure approach, and more recently the institutional economics approach have given several explanations about the growth differences across countries as well as the reasons behind them (Dang and Sui-Pheng, 2015; Acemoglu and Robinson, 2012; Chenery et al., 1986; Mankiw et al., 1992). However, our focus is to see how a political economy or political institutions affect economic performance through their role in industrialization taking Ethiopia as a case study for developing countries.

In social science, the most important subject is identifying the causes of the differences in economic growth and development across countries. Several aspects have been discussed for explaining the differences in economic performance across nations. The differences in performance are mostly attributed to factors such as accumulation of factors of production like human and physical capital, and technological innovations, geography, culture and others (Acemoglu et al., 2005; Acemoglu and Robinson, 2008). But, above all, institutions either extractive or inclusive, have gained weight in explaining the disparities in incomes across nations. Inclusive institutions include formal property rights and liberal forms of democracy that shape the economic and political progress of a society (Acemoglu and Robinson, 2012). Extractive institutions on the other hand are a boon for politicians or public officials as they allow unaccountable use of resources for political and private purposes (EFB, 2016).

Broadly speaking, institutions are viewed as a fundamental factor in the differences that exist across countries (Acemoglu and Robinson, 2008). Specifically, economic institutions are recognized as being critical for making a society economically successful by providing incentives and opportunities to shape investments and innovations that correlate with their economic performance (Acemoglu et al., 2001; Acemoglu and Robinson, 2012, 2016; North, 1990). Economic institutions differ widely across societies and political institutions are major factors behind these differences (Acemoglu and Robinson, 2016). Different political choices, institutional structures, and the form of government influence the economic choices made by a government and their economic outcomes (Adam and Dercon, 2009). The role of the state in relation to the private sector can play an impeding role in economic development and industrialization due to the distrust and discrimination against the private sector because of political ideologies (Vu-Thanh, 2014).

Institutions are different across societies either because of their economic institutions or their formal methods of collective decision making like democracy versus dictatorship (Acemoglu and Robinson, 2008, 2012). One way of classifying institutions is as political and economic institutions and the way in which they have an impact on incentives for different decision-making units and economic outcomes (Acemoglu and Robinson, 2008). Economic institutions can be characterized by the enforcement of property rights, entry barriers, corruption, trade openness, and risk of expropriation that are directly related to the cost of doing business and investors' decision-making processes (Becker et al., 2009; North, 1981). On the other hand, political institutions are attached to the level of democracy, competitiveness in elections, electoral systems, and forms of government (Bonnal and Yaya, 2015; North, 1981).

Literature shows that differences in institutions play a major role in economic development across countries. The incentives for and the constraints on economic actors are determined and shaped by institutions (Acemoglu et al., 2005). Institutions are core factors that determine agents' economic performance and decision making as well as their incentives. Basically, political power is a mediator between the institutions and the outcomes (Acemoglu et al., 2001, 2005). Political power affects economic institutions and the economy (Acemoglu et al., 2005; Acemoglu and Robinson, 2008). Acemoglu et al. (2005) developed a framework for analyzing how these institutions are correlated and can affect societies' economic performance.

2.2 Concepts of industrialization and deindustrialization

Industrialization can be expressed as a set of social and economic processes related to the discovery of more efficient ways of value creation under the label of industry or the secondary sector where the primary sectors refer to agriculture, resource extraction, hunting and fishing while the service sector is referred to as the tertiary sector (Simandan, 2009). Industrialization provides certain spillovers which complement other activities through enhancement of skills, dispersion of technologies, and managerial training (Kindeye, 2014; Simandan, 2009). Industrialization is an engine for creating employment opportunities, increasing production and productivity, and altering countries' economic structures (Kindeye, 2014). Along with promoting the manufacturing industry, exports are desirable for many reasons such as limited market size and operational capacity. Industries are forced to attain and maintain high standards of product quality and efficiency by competing in the world markets (Hikschman, 1968).

Deindustrialization on the other hand, represents a decline in the manufacturing sector's value added as a share of gross domestic product (GDP) or it can also indicate a decrease in the share of the industry sector in total employment levels (Cáceres, 2017). Deindustrialization also represents a fall in employment in manufacturing as a share of total employment and/or a declining or steady share of manufacturing value added in a country's GDP (Cáceres, 2017; Grabowski, 2015). Literature shows that there are several factors which lead to industrialization or deindustrialization in countries on path to structural transformation among which institutions are crucial factors (Acemoglu and Robinson, 2008; Acemoglu et al., 2005; North, 1981).

2.3 Industrial policy strategies and implementing structures

Industrial policy can be defined as a guide for government interventions in the economy or as a government's deliberate attempts at promoting industry (Naude, 2010; Robinson, 2009). It is also an intervention or government policy for improving the business environment or changing the structure of economic activities to offer better prospects of economic growth and societal welfare (UNIDO, 2018b; Warwick, 2013). There are two major industrialization policy strategies: the protectionist imports substitution industrialization and the outward strategy export-oriented industrialization (Gall, 1997). Import-substitution industrialization was used as a strategy in most developed countries (Hikschman, 1968). Export oriented industrialization was used as a strategy by most late industrializers including East Asian countries (Kim and Heshmati, 2014). Recently, special economic zones (SEZ) or industrial parks (IPs) have become a common strategy for sustaining development and industrialization (Wang, 2014; Saleman and Jordan, 2014).

Special economic zones can be different, but it aims at inducing industrialization and economic development (Pakdeenurit et al., 2014). Despite their many variations, a special economic zone can be defined as an area with special fiscal and business laws which are different from those for other areas (Munyoro et al., 2017; OECD, 2013). Special economic zones can also be expressed as geographic areas demarcated within a country's national boundaries which follow different business rules that is different from what prevails elsewhere (Farole and Akinci, 2011). Special zones can be classified as free trade zones, export processing zones, single factory industrial parks, enterprise zones, free ports, and specialized zones (Munyoro et al., 2017; Wang, 2014). We are most concerned with two specific forms of economic zones: industrial parks and export processing zones as they are adopted as the new industrialization strategy in Ethiopia.

The idea of industrial parks (IP) can be traced back to the 18th century industrial revolution when they were formed to facilitate industrialization in countries. IPs can be classified as domestic resource parks, external resource parks, and mixed resource parks (Alebel et al., 2017). Export processing zones (EPZ) are export oriented zones that create value chains through the production of high value goods that meet the standards of the export market (Morley and Hugh, 2010; Munyoro et al., 2017). In EPZs zones trade transaction costs are reduced by allowing duty free imports of raw materials, intermediate and capital goods. There is also fiscal incentives of corporate tax holidays and training to reduce startup cost of the firms (Engman and Farole, 2012). The objective is to boost exports and foreign exchange earnings, induce diversification and industrialization (Engman and Farole, 2012). Likewise, industrial parks have a rationale to provide spillover effects in terms of knowledge and technology spillover, the development of markets and specialization (Saleman and Jordan, 2014).

Successful implementation of IPs and EPZs depends on governance system, administrative pattern, policy preference, linkage to the rest of the economy and investment promotion (Alebel et al., 2017; Saleman and Jordan, 2014). Yet, IPs and EPZs requires strategic resources and special policies (Alebel et al., 2017; UNIDO, 2018b). Successful zones have linkages to the domestic market, so that their investors buy production factors from domestic sources (Moberg, 2015; Farole and Akinci, 2011). To complement successful implementation of IPs different support instruments available include administrative support, organization of infrastructure and tax reliefs (Jasiniak and Koziński, 2017). The structural orientation of industrial policies is equally important as the strategies for smoothening the industrial development process (Tesegaye, 2015). There are two organizational structures of industrial policies: centralization and decentralization. Decentralization is transfer of power from the central to local governments (Vu-Thanh, 2014).

Industrial policy has great potential for promoting industrialization and economic development, but this can only be realized if the political environment is optimal. Variations in the adoption and success of different industrial policies and strategies is explained by the differences in the ideologies of different policymakers and the ideas of their economists (Robinson, 2009; Vu-Thanh, 2014). Industry policies only promotes economic growth and development in the right institutional context and robust political economy while it can cause misallocation of resources and rent seeking if implemented with the wrong institutional context (Moberg, 2015; Farole and Akinci, 2011). Institutions is a bridge in the successful implementation of industrial policies to bring about effective industrialization. The coordination of the industrial policies with industry's performance depends on the quality of institutions.

2.4 Empirical literature review

This section provides the background for the empirical experiences of different countries on their industrialization paths with more focus on industrial policies and institutions.

Shafaeddin (1998) empirically shows how early industrialized countries like the UK, US, Germany, and France managed to boost their industrial performance by protecting their infant industries and government interventions in the early stages of their development. In these countries, capital accumulation, institutional development, and infrastructure played a significant role. Adelman (1999) confirmed that during the 19th century, the government supported industrialization in Europe, the UK, and the US and it played an important role in promoting the industrial revolution. For late industrializers, Hikschman (1968) assessed the characteristics of the import substitution industrialization strategy in Latin American countries and identified sociopolitical factors as impeding in the implementation process. Vedovato

(1986) studied the industrialization process in the Dominican Republic where industrialization got a momentum by being given an impetus at the end of the 1960s.

In the second half of the 20th century, an economic transformation in Northeast Asian countries like Japan, North Korea, and lately Taiwan in the form of an industrialization process and rapid economic development occurred which gradually spread to other parts of the continent (The World Bank, 1993). Lajciak (2017) attributes the success story to political economy and institutional, cultural, and international approaches. The secret of their success is not only policies and instead is competent execution of appropriate policies. Robinson (2009) showed that the success of industrialization depended on industrial policies complemented by an optimal political environment. For instance, East Asian countries like South Korea and Taiwan were engaged in export promotion and Brazil promoted import substitution but they ultimately managed successful industrialization which is attributed to their optimal yet distinct industrial polices. After reforms and opening up, within three decades China transformed from a traditional agricultural economy to a modern industrialized one with its own unique features (Xiaoyon, 2014). Rasiah and Nazeer (2016) studied the industrialization process in Pakistan comparing it with East Asian economies to understand how it missed technological upgrading.

In sub-Saharan Africa, economic development has been characterized by deindustrialization due to a bad environment for business decision making, failures in governance, lack of investments in infrastructure, education, and foreign investments, and lack of openness to trade (Grabowski, 2015). Mendes et al. (2014) show that in sub-Saharan African countries there are two phases of the industrialization process of which the first started in the 1920s and the second started in the late-1950s but they failed due to internal and external constraints. Likewise, in most African countries the industrial policy was a total failure attributed to an inconvenient political economy existing in the economies (Robinson, 2009). Beji and Belhadj (2014) explored the relationship between industrialization and its different determinants for 35 African countries and concluded that financial development, governance, and labor market regulations had an augmenting effect on industry's performance. Ethiopia has achieved little in terms of industrialization and structural transformation despite its remarkable economic growth over the last decade (Weldesilassie et al., 2017; Alebel et al., 2017).

Empirical evidence on the role of institutions and their effect on economic performance argues that institutional failure is a core factor that impedes economic performance and industrial development (Acemoglu and Robinson, 2000). Europeans adopted two extremely different strategies of colonization in which countries such as the United States, New Zealand, and Australia set up institutions that encouraged investments and enforced the rule of law whereas on the other extreme countries like Congo set up extractive institutions which enabled them to transform resources even if the institutions were detrimental to the economic performance of the colonies (Acemoglu et al., 2001). Acemoglu and Robinson, (2008) shows that the economies of South and North Korea diverged because of the differences in their economic institutions and policies. It should be noted that the gap between the two economies can to a large extent be attributed to decades of US sanctions against the North. Lee and Lim (2010) did a case study in Korea and empirically showed that the good governance and transparent policymaking generated successful policy outcomes in an era of democratization.

Yildirim and Gokalp (2016) explored the association between institutional structure and macroeconomic performance empirically where institutions were proxied by indicators such as integrity of the legal system, regulations on trade barriers, restrictions in foreign investments, judiciary's independence, and political stability for 38 developing countries. Their results confirmed that regulations on trade barriers and restrictions on foreign investments had a positive effect while judiciary's independence and political stability had a negative impact on

the macroeconomic performance of the countries. Bates and Block (2018) empirically examined the change in political regime from authoritarian to a democratic system in many African countries. Their results showed that democratic reforms led to economic growth.

Chole and Manyazewal (1992) examined the macroeconomic performance of the Ethiopian economy during the Derg regime when there was a very low contribution of industry as a share of GDP. They attributed this to different factors including war and the policy environment. Geda and Berhanu (1960) investigated the political economy of growth in Ethiopia and found that the absence of structural transformation for four decades is attributed to initial conditions and structural problems. Their study also confirmed that productivity growth had a negative role which they attributed to an economy operating in a hostile policy environment and external shocks. Berhanu and Poulton (2014) examined the political economy of the agricultural extension policy in Ethiopia. They find that there was conflicting interest between the objective of stimulating agricultural growth and winning elections which reduced returns to investments for the agricultural extension strategy.

To conclude, review of the literature revealed that industrialization was a major pillar for structural transformation in many countries and institutions were major determining factors in the success of industrialization. Several studies confirm that industry policies can change the structure of the economy. However, this largely depends on the type of institutional environment which can be a tool that facilitates optimal industrialization or leads to deindustrialization. If inclusive, it could lead to industrialization but could also be an impeding factor for industrialization if it is extractive. The role of political economy in industrialization of sub-Saharan countries had contrasting effects where for some it brought a momentum to their industrialization processes whereas for most countries it had a negative impact. Hence, this study investigates the role of political institution on industry performance over time along with the assessment of different industrial policy strategies and their organizational structures relating it with the performance of the Ethiopian industry and the economic structure.

3. Data and Methodology

3.1 The empirical model

There has been a growing interest in exploring the role of institutions in promoting growth in developing and emerging economies to determine the extent to which institutions affect growth (Aron, 2000; Stiglitz, 1998; WB, 1993, 1997). The empirical model for specification of institution and growth relationship is formulated (Barro, 1991,1996; Mankiw et al., 1992; Zakaria and Fida, 2009). In our study, an extension is made to sectoral growth taking Ethiopia as a case study.

$$(1) \quad Y = Af(L, K)$$

In equation (1), Y represents production and the right-hand side variables represent inputs that explain the variations in production; A represents technological progress, L stands for labor while K is capital. To include institutional differences in the model, the literature maintains that institutional quality affects technological progress implying that technological progress is not constant across countries and instead it depends on the differences in their respective institutions (Aron, 2000). Equation (2) gives the functional relationship of production growth with institutional variables and other covariates as control variables:

$$(2) \quad LogY_t = \alpha + \sum_{i=1}^{K} \beta_i I_{it} + \sum_{j=1}^{n} \gamma_j X_{jt} \beta + \varepsilon_t$$

where Y is representing manufacturing industrial production, α is a constant parameter to be estimated and I represent institutional variables. The polity2 index represents political institutions while the percentage of exports and imports to GDP is used as a proxy for openness. X represents a vector of the inputs or control variables, labor and capital, with α, β, and γ parameters to be estimated, ε represents the random error term and t is a subscript for time.

The role of political institution in the manufacturing industry's growth is empirically modeled in a time series autoregressive distributed lag model (ARDL) framework. Apart from investigating the existence of an empirical relationship between institutions and growth, this study explicitly estimates the long-run and short-run effects. OLS with robust standard errors is estimated for a comparison while the ARDL is used as the main estimation approach because of mixed order of integration which can only be estimated by ARDL. Before the estimation, the bound test for the existence of a long-run relationship between the variables is checked. Then equation (3) is estimated to get the long-run parameter estimates as:

$$(3)\quad LogMVA_t = \alpha_0 + \sum_{i=0}^{p} \alpha_1\, logMVA_{t-1-i} + \sum_{i=0}^{q} \alpha_2 logI_{t-i} + \sum_{i=0}^{q} \alpha_3 logL_{t-i} + \sum_{i=0}^{q} \alpha_4 logK_{t-i} + \varepsilon_t$$

$$(3a)\quad LogMVA_t = \beta_0 + \sum_{i=0}^{p} \beta_1\, logMVA_{t-1-i} + \sum_{i=0}^{q} \beta_2 logPolity2_{t-i} + \sum_{i=0}^{q} \beta_3\, logOpnness_{t-i} + \sum_{i=0}^{q} \beta_4 logL_{t-i} + \sum_{i=0}^{q} \beta_5 logK_{t-i} + \varepsilon_t$$

Equation (4 and 4a) presents the short-run specification of the ARDL model where d indicate change. In dependent variable is logarithm of manufacturing value added (MVA) while institutions are proxied with the polity2 index which is a proxy for regime change (political institutions) and trade openness as economic institutions. Error correction term (ECM) is included to show to what extent the model adjusts to the long-run equilibrium annually:

$$(4)\quad dlogMVA_t = \alpha_0 + \sum_{i=0}^{p} \alpha_1\, dlogMVA_{t-1-i} + \sum_{i=0}^{q} \alpha_2 dlogI_{t-i} + \sum_{i=0}^{q} \alpha_3 dlogL_{t-i} + \sum_{i=0}^{q} \alpha_4 dlogK_{t-i} + \lambda_1 logMVA_{t-1} + \lambda_2 logI_{t-1} + \lambda_3 logL_{t-1} + \lambda_4 logK_{t-1} + \gamma ECM_{t-1} + \varepsilon_t$$

$$(4a)\quad dlogMVA_t = \beta_0 + \sum_{i=0}^{p} \beta_1\, dlogMVA_{t-1-i} + \sum_{i=0}^{q} \beta_2 dlogPolity2_{t-i} + \sum_{i=0}^{q} \beta_3 dlogOpnnes_{t-i} + \sum_{i=0}^{q} \beta_4 dlogL_{t-i} + \sum_{i=0}^{q} \beta_5 dlogK_{t-i} + \lambda_1 logMVA_{t-1} + \lambda_2 logPolity2_{t-1} + \lambda_3 logOpnness_{t-1} \lambda_4 logL_{t-1} + \lambda_5 logK_{t-1} + \gamma ECM_{t-1} + \varepsilon_t$$

3.2 The data

This study uses primary and secondary data taken from the Ministry of Finance and Development Corporation (MoFEC), the National Bank of Ethiopia (NBE, 2016, 2019), Ethiopian Economic Association (EEA), the Ethiopian Central Statistical Authority (CSA, 1995/96, 2011. 2016), the Industry Park Development Corporation (IPDC, 2019) in Ethiopia[2],

[2] The primary data is collected to supplement the analysis of industry parks based on secondary data. The data is collected from Bole Lemi I. During the study period, Hawassa and Bole Lemi I were the only operational parks.

and United Nations Conference on Trade and development (UNCTAD). For the primary data, on industrial policy strategies informal interviews, focus group discussions, and personal observations were used along with an extensive document review of different policies, plans, and reports on the industry and the economy for the study period. Secondary data on polity2 was taken from the Polity IV project dataset. Polity2 score is an index ranging from -10 to +10 representing full autocracy and complete democracy respectively while the range between -5 to 5 represents anocracy (Zakaria and Fida, 2009; Marshall et al., 2002). It is used to represent the level of democracy or to represent a political regime change. The data for openness and capital are accessed from UNCTAD while data for labor and manufacturing value added data was taken from MoFEC.

A multivariate regression analysis is done to empirically complement the qualitative analysis of the political economy of industrialization in Ethiopia taking the manufacturing value added as the dependent variable and polity2 as the proxy for political institutions which is a major variable of interest. The expected sign for polity2 is negative indicating that a political regime change has a negative impact on manufacturing growth. The expected sign for openness is positive with the implications of a positive trade impact on manufacturing growth. In the estimation, labor and capital are considered as control variables with expected positive signs.

A time series ARDL framework is used for estimating the parameters of the model. The ARDL approach is robust and efficient for estimating a small sample sizes. Unlike many other models it allows to include variables with a mixed order of integration less than I(2) and it enables an estimation of long-run and short-run coefficients for a specified model (Pesaran et al., 2001). The ARDL approach also provides unbiased coefficient estimates even when the explanatory variables are endogenous (Harris and Sollis, 2003; Pesaran et al., 2001; Pesaran and Shin,1999). The first estimation procedure is testing for the existence of a long-run relationship among the variables using the bound test. The null hypothesis for the bound test is no cointegration. If the F-statistic's value is higher than the upper critical value, we reject the null and confirm the existence of a long-run relationship. The opposite holds true that if the F-statistic at a given significance level is less than the upper critical value (Pesaran et al., 2001) we fail to reject the null and long-run cointegration is denied. The next procedure is estimating the long-run and short-run coefficients of the specified model.

4. Discussion of the Results

4.1 Descriptive analysis

This section discusses the performance of the manufacturing and industry sectors across the regimes. Economic and political institutions, industrial policies, and organizational structures are also discussed followed by the different development and industrial strategic plans. Ultimately, the industrial parks in Ethiopia is evaluated to find out their contribution to employment generation, export promotion, foreign exchange generation, and value chain along with indications of their limitations for future policy use.

4.2 Industry and economic performance in Ethiopia across regimes

Table 1 gives the contribution of different sectors to the overall economy across the three regimes. During the Imperial regime, agriculture dominated the economy with a 66% share of GDP followed by service and industry sectors with 25% and 8% share respectively. During the Derg regime, the contribution of agriculture declined by 8% though it was still the leading sector in the economy whereas the contribution of the service sector increased to 31% and the

industry sector also had a 2% increase. In the current regime, on average, agriculture is contributing 50% to GDP, the service sector 39%, and the industry sector 10%. The low manufacturing sector share imply that for more than eight decades its contribution to the economy did not exceed 5% due to many factors some of which are explained later.

Table 1: Sectoral share of GDP and their respective growth across regimes in %.

Regimes	Imperial (1930-1974)		Derg (1974-1991)		EPRDF (1991 onwards)	
	Share	Growth	Share	Growth	Share	Growth
Agriculture	66	2	53	2.0	50	6
Industry	8	7	10	1.8	10	10
Manufacturing	3	8	5	1.6	4	9
Service	25	7	31	1.6	39	12

Source: Authors' compilation based on EEA and MoFEC data.

A comparison of the share of exports and imports determine the trade balance. During the Imperial regime, the proportion of exports and imports seemed to be balanced with imports having a slight dominance. In the Derg regime, imports dominated and even in the recent regime the dominance of imports is indicating a negative trade balance or trade deficit which requires foreign exchange from other sectors to balance import expenditure. In sum, the data shows that Ethiopia has been experiencing trade deficit for decades which can be attributed to the low performance of the manufacturing and industry sectors. Manufacturing contributed less than 5% to the GDP for several decades which impeded the export sector and made the export to rely on primary commodities trade in the international market.

In Figure 1, the trade balance or the difference between exports and imports for the three regimes is given. Relatively, the dominance of imports is significantly large in the current regime indicating a high trade deficit which weakens the sector and will be transmitted to the overall economy. The challenges of a large deficit will have an impact on the structural transformation that should take place in the country. Large trade deficit implies an accumulated government debt and the limited foreign exchange reserve is spent to pay for the imports.

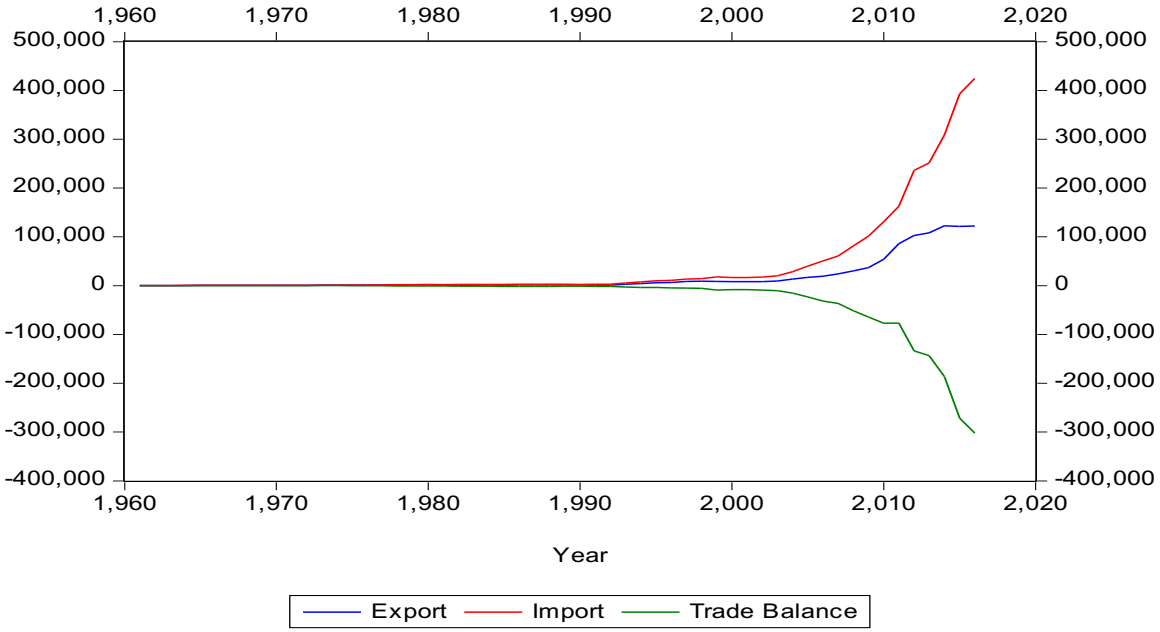

Figure 1: Trade performance across the regimes
Source: Authors' computation.

Table 2 provides the major export and import items during the three regimes. The table also classifies the current regime into the first decade where agricultural development led

industrialization (ADLI)[3] was implemented and the later one which is after the introduction of the industrial development strategy (IDS)[4]. Coffee had the lion's share as a major export item across the three regimes. In the Imperial regime, apart from coffee, skin and hide, primary commodities were dominant export items. In the same regime, cotton was a major import item with a 41% share of the total import value followed by petroleum, metal products, and salt having another 20% share in total imports. During the Derg regime, leather products were the second major exported item followed by oilseeds, pulses and chat. Machinery and aircraft were the major imported items along with petroleum, road motor vehicles, food, and live animals.

Table 2: Major export and import items across regimes

Regimes	Major Export Items	Share, %	Major Import Items	Share, %
Imperial	Coffee	46	Cotton products	41
	Skin and Hide	18	Petroleum products	7
	Flour and Vegetable oils	17	Metal and metal products	5
	Cereals and Pulses	15	Salt and/or sugar	4
Derg	Coffee	64	Machinery and aircraft	16
	Leather and Leather products	16	Petroleum crude	13
	Oilseeds and Pulses	4	Road motor vehicles	12
	Chat	3	Food and live animals	11
EPRDF	Coffee	60	Petroleum production	14
(ADLI)	Leather and Leather products	13	Road motor vehicles	13
	Chat	9	Machinery and aircraft	12
	Oilseeds and Pulses	6	Others	17
EPDRF	Coffee	31	Petroleum production	14
(IDS)	Oilseeds and Pulses	22	Machinery and aircraft	14
	Chat	10	Metal & metal manufacturing	11
	Leather and Leather products	6	Others	22

Source: Authors' calculations using MCI (1955).
Notes: ADLI = agricultural development led industrialization, IDS = industrial development strategy.

Figure 2 shows that Asia is a major source of Ethiopia's imports and destination for exports (36% and 62% out of the total respectively). The second destination of exports and source of imports is Europe (32% and 18%) Africa is the third destination of exports at 21% but only 6% of the imports. 10% of the exports go to the US and 13% of the total imports come from the US. This shows that the main source of imports and destination of exports is dominated by Asian countries mostly China. Technology and knowledge spillover effects of trade are limited and more inclined in Asia's favor. Asian companies are penetrating the country in the construction industry as well as the industrial park project because of the advantage of cheap labor and tax holiday. The managing positions of the projects are run by the Asian partners leaving no room for local experts. This should ring alarm bells for Ethiopia to work on its international relations to get real transfer of knowledge, technology, and value chains for the local industries.

[3] Ethiopia adopted the agricultural Development Led Industrialization (ADLI) strategy in 1993 aiming at enhancing industrial development, reducing poverty and ensuring a dynamic and sustainable growth in the Economy (Dube et al., 2019).
[4] The overall aim of industrial development strategy (IDS) in Ethiopia adopted in 2003 is to bring about sustainable structural change through industrial development (FDRE Ministry of Industry, 2013).

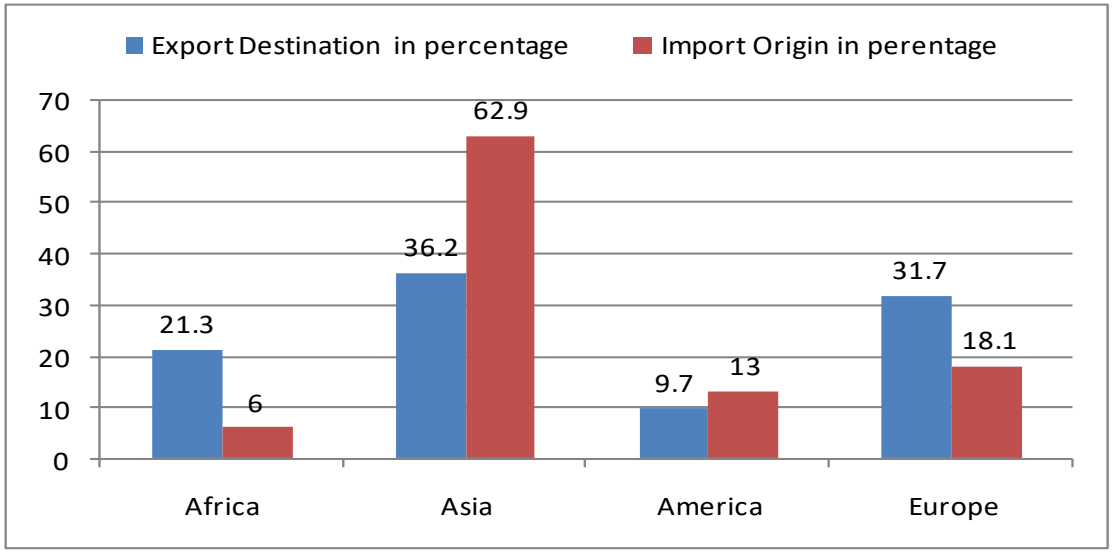

Figure 2: Ethiopia's current export destinations and import origins in %.
Source: Authors' computation.

In the early period of the contemporary regime, coffee was an exported item followed by leather products, chat, oilseeds, and pulses. Later, oilseeds became a dominant exported item with a declining share of leather products. Regarding import items, petroleum, road motor vehicles, and metal products became dominant. However, the import of food, live animals, and consumer goods is still significantly huge implying the weak engagement of the domestic industries in working on their comparative advantages like cereal production, textiles, food, live animals, and leather products. In general, the trade sector shows that for decades the country was engaged in exporting a limited number of primary commodities and importing capital goods which shows an unexploited export sector that negatively impeded the trade balance due to a failure in diversifying the sector and neglecting to empower the domestic infant industry.

Table 3 gives the industry and manufacturing value added as a share of GDP and industry exports as a share of total merchandise exports and GDP respectively during the Imperial, Derg and EPRDF periods. As the table shows, industry did not exceed 10% and manufacturing value added as a share of GDP was 4% for the two periods. Industrial exports as a share of total exported merchandise was 16% and not more than 1% of the total GDP during the same period. This shows that for almost five decades under these two political regimes the contribution of manufacturing industry and its exports share to GDP was close to zero.

Table 3: Industry and manufacturing's performance indicators during the Imperial, Derg and EPRDF Regimes

Regimes	Industry Value added/GDP	Manufacturing Value added/GDP	Industry Export/Total Merchandize Export	Industry Export /GDP
Imperial	8	4	1.8	-
Derg	9	4	15.6	0.5
EPRDF	11	4	8	4
ADLI	8	3	12	1
SDPRP	9	3	11	2
PASDEP	9	4	6	4
GTP I	12	4	4	9
GTP II	24	6	4	4

Source: Authors' compilation.

Table 3 shows the manufacturing and industry's value-added share of GDP during the first ADLI implementation period and after the implementation of IDS complemented by consecutive development plans such as SDPRP, PASDEP, GTP I, and GTP II. Besides, it also shows the contribution of industry to the export sector and industry exports as a share of GDP. During the first decade, industry value added was 8% and manufacturing value added was 3% while industry exports as a share of GDP was only 1%. These figures showed a slight improvement indicating the potential of the sectors to change from their steady stance for more than eight decades if supported by relevant industrial policies that go along with the competitive advantage of the country and its overall economic environment.

Table 4 gives the current percentage distribution of industries across different regions in Ethiopia. When Ethiopia adopted a new federal constitution in 1994, with the borders defined along ethno-linguistic lines, the country was divided into a set of eight regions and three city states (Briggs, 2012). Currently, we have two city states Addis Ababa and Dire Dawa while the regions include Amhara, Tigray, Afar, Oromiya, Somaliya, Benshangul, Southern Nations, Nationalities and Peoples' State (SNNP), Harari and Gambela (CSA, 2016). As the table confirms, on average during 2012-2016, of the existing different industries in the country 34.8% are located in Addis Ababa. Oromiya, Amhara, and Tigray regions have 28%, 11.2%, and 9% share of the industries respectively.

Table 4: Current percentage distribution of industries by regional states

Regions/Years	2012	2013	2014	2015	2016
Amhara	13	12	12	11	8
Afar	0.53	0.68	0.36	0.25	0.22
Tigray	8	8	8	7	14
Oromiya	26	27	30	32	28
Somalia	0.94	1.10	1.10	0.95	0.64
Benshangul Gumuz	0.20	0.34	0.36	0.19	0.17
Gambela	0.08	0.04	-	-	-
Harari	0.94	1.10	1.20	1.20	0.56
SNNP	12	11	12	10	9
Addis Ababa (City State)	37	33	33	35	36
Dire Dawa (City State)	2.50	2.90	3.30	2.90	2.90

Source: Central Statistical Agency of the FDRE (CSA, 2016).

4.3 Economic and political institutions across different regimes

Table 5 shows the political institutions in terms of forms of governance and government ideology and economic institutions across the three regimes. During the Imperial regime, there was a monarchical form of government in which political power was centralized in the hands of the King with an ideology of feudalism along with a parallel market-oriented economy. Whereas, during the Derg period there was dictatorship with a central planning ideology and a command economic system which gave a platform only to the public sector ignoring the private sector which is the seed for efficient production in any economy. The current regime has an anocracy[5] form of governance with a developmental government ideology giving space to the government and the public sector for organizing production and administrating institutions along with private sector participation. The economic system promotes public-private sector

[5] Anocracy is a form of governance which is neither pure democratic nor does a pure autocratic. It combines both features (Deacon, 2009).

partnerships as the main actors in the economy. Hence, in the three regimes the political economy, government ideology, and economic institutions were different. Table 5 shows that for the three political periods the value added contribution of manufacturing to GDP never exceeded 5% implying that even though the political institutions were different they were weak and impeding the economic outcomes giving priority to political rent seeking behavior rather than nation development.

Table 5: Political and economic institutions across regimes in Ethiopia

Regimes	Forms of Government (Political Institution)	Government Ideology	Economic Institutions	Value Added/ GDP in %
Imperial (1930-74)	Monarchy	Feudalism	Market Economy	3
Derg (1974-91)	Dictatorship	Socialism	Command Economy	4
EPRDF (1991-to date)	Anocracy	Developmentalism	Mixed Economy	4

Source: Compiled by the authors using different data sources.

4.4 Industrial strategies and organizational structures in Ethiopia

During, the Imperial period economic development in the country was mainly relied on subsistence farming and with an almost non-existent industrial sector (David and Thomas, 2013). However, national development policies were implemented for promoting industrial activities under a series of three five-year plans. The plans focused on industry and provided development incentives such as tax exemptions and low interest rate loans (Suleiman, 2000; TGE, 1993).

During the Derg regime the industrialization policies could not be separated from the country's agricultural policies. The war time economic policy focused on mobilization of resources to serve the war economy leading to serious damage to the economy (Deguefee, 2006; Oqubay, 2018; Tiruneh, 1990). The overall objective of the government for development was building a socialist society where the major route to economic transformation was central planning (Suleiman, 2000). In this regime, a significant number of manufacturing enterprises owned by foreigners were nationalized (David and Thomas, 2013). The socialist policy also promoted public ownership of natural resources (Suleiman, 2000). Among the key strategies in the Derg's industrial policy were import substitution, central planning, social ownership, and self-reliance (Oqubay, 2018).

During the EPRDF regime, several reforms were introduced on the basis of which the long-term economic development strategy, the Agricultural Development Led to Industrialization (ADLI) strategy was formulated. This new policy aimed at raising agriculture's productivity and promoting an export oriented agro-based industry sector. The target was achieving sustainable economic growth and development (Suleiman, 2000; TGE, 1993). The new policy had been employed in some form by many African countries. The policy lacks disaggregation of the existing situation in the country in terms of resources, institutions, infrastructure, and other related relevant issues (Briggs, 2012; Suleiman, 2000; TGE, 1993).

Table 6 gives the development plans and strategies that have been pursued by the country across different regime periods. During the Imperial regime, there were three consecutive five-year national plans: the first five-year plan (FFYP), the second five-year plan (SFYP), and the third five-year plan (TFYP) which all aimed to enhance the economic performance. During the first decade of the Derg regime there was no plan at the national level but for its second decade

the government came up with a 10-year prospective plan. During the current regime, different development plans have been introduced at the national level such as the sustainable development and poverty reduction program (SDPRP), a plan for accelerated and sustained development for ending poverty (PASDEP), growth and transformation plan I (GTP I) and the recent growth and transformation plan II (GTP II).

Table 6: Development plans and strategies across regimes

Regime	Development Plans	Development Strategy
Imperial	✓ First Five-Years Plan (FFYP) ✓ Second Five-years Plan (SFYP) ✓ Third Five-Years Plan (TFYP)	✓ Unstructured
Derg	✓ Ten-Year Prospective Plan (1984-1994)	✓ Unstructured
EPRDF	✓ Sustainable Development and Poverty Reduction Program (SDPRP) (2002/03) ✓ A Plan for Accelerated and Sustained Development to end Poverty (PASDEP) (2005/06) ✓ Growth and Transformation Plan I (GTP I) (2010/11) ✓ Growth and Transformation Plan II (GTP II) (2015/16)	✓ Agricultural Development led Industrialization (ADLI) (1994) ✓ Industrial Development Strategy (IDS) (2002)

Source: Authors' compilation.

In Table 6 different development ideologies are pursued giving the role of a follower and a leader to the industry for achieving structural transformation and poverty reduction goals. The first development plan was the ADLI which gave priority to the agriculture sector whereas the second was the IDS which prioritized development of the industry as a means of achieving structural transformation targets. The ADLI mainly focuses on agriculture sector by improving the productivity of peasant farmers to enable the sector to contribute to economic growth (MPED, 1993) The IDS mainly focus on labor intensive industries, export promotion industrial strategy, strong government leadership role, and private public partnership (PPP) (FDRE Ministry of Industry, 2013). This shows that the country has been through different types of development plans across the regimes and pursued distinct development strategies and yet all been ineffective in transforming the structure of the economy. The failed industrialization can be attributed to weak institutions and unfavorable political environment.

Table 7 gives different industrial strategies and organizational structures and prioritized industries during the three governance periods. In the Imperial regime, import substitution industrialization was a major industrialization strategy with a centralized industrial policy. In the central planning period, the industrial policy was the same as the former regime, but the major actor was the inefficient public sector. In the EPRDF period, the industrialization strategy was export oriented targeting labor-intensive manufacturing industries. This shows that two extreme industrial strategies with different organizational structures were implemented in Ethiopia across these periods focusing on labor intensive industries. All in all, the manufacturing industry has for several decades failed to respond to the different policies implemented. This can be attributed to the large gap between the policies and the way they were implemented which did not consider the initial conditions in the country. Instead of focusing on the real situation, the focus was on producing political reports. It seems policies were implemented with a priority focus of the political goals than the economic outcomes.

Table 7: Industrial and organizational strategies across regimes

Regimes	Strategies	Organizational Structures	Dominant Ownership	Prioritized Industries
Imperial (1930-74)	Import Substitution	Centralized	Foreign company	Labor intensive
Derg (1974-91)	Import Substitution	Centralized	Public sector	Labor intensive
EPRDF (1991-todate)	Export Promotion	Partially Centralized	Private sector	Labor intensive

Source: Authors' compilation.

4.5 Contribution of industrial parks and their limitations in Ethiopia

Table 8 gives the number, type, location, and operational status of industrial parks in Ethiopia along with the type of employment in the production processes. As of date there are 11 industrials parks in the country located in different areas. Most of the parks are focusing on textiles, apparel, and garments except Killinto and Adama which are pharmaceutical hub and machinery equipment hubs. This shows that the parks are not considering the country's competitive advantage which is agroindustry and leather production along with textiles. Among these parks, only Bole Lemi I and Hawasa industrial parks have been operational and are engaged in employment creation, production, and exports. Most of the employees are unskilled who are given short term training on how to run machines which limits the technology and knowledge transfer goals of the industrial park industrialization strategy.

Table 8: Characteristics of industrial parks in Ethiopia

Establishment/ Name of the IP	Types	Locations	Operational status	Employment
Bole Lemi I	Apparel & Textile	Addis Ababa	Operational	Unskilled labor
Bole Lemi II	Apparel & Textile	Addis Ababa	Not Operational	-
Kilinto	Pharmaceutical Hub	Addis Ababa	Not Operational	-
Hawassa phase _I	Textile and Garment	Hawassa	Operational	Unskilled labor
Hawassa phase _II	Textile and Garment	Hawassa	Operational	Unskilled labor
Adama	Machinery, Equipment, Apparel & Garment	Adama	Not operational	-
Dire Dawa	Garment, Apparel & Textile	Dire Dawa	Not operational	-
Mekele	Apparel & Textile	Mekele	Operational	Unskilled labor
Kombolcha	Apparel & Textile	Kombolcha	Operational	Unskilled labor
Jimma	Apparel & Textile	Jimma	Inaugurated	Unskilled labor
Bahir Dar	Apparel & Garment	Bahir Dar	Not operational	-
Debre Birhan	Apparel & Garment	Debre Birhan	Inaugurated	Unskilled labor

The industry parks are dispersed across the country. As can be seen the parks are distributed all over Ethiopia without taking the logistical and infrastructural conditions into consideration. They are located on the grounds of political motivation of allocating parks to all areas in order to avoid sociopolitical unrest. Instead, the implementation should have been strategic and targeted based on static and dynamic outcomes of the industrial policy's strategy by considering excessive investment cost saving. The optimal strategy should aim to augment the

strategic policy in a way that exploits the competitive advantages of the parks and strengthens the infant domestic private industries that can sustain industrialization in the country.

Table 9 presents the investment costs of the industrial parks in Ethiopia. The Hawasa industrial park was the first large project set up at a cost of 6.8 billion Ethiopian birr followed by Dire Dawa and Adama industrial parks with 3.0 billion and 2.9 billon birr as investment costs respectively. Mekele, Kombolcha, Jimma, and Bahir Dar industrial parks, on average, cost 1 billion birr each. This implies that launching an industrial park involves high fixed costs and if they are not implemented properly the opportunity costs are significant which contribute to the accumulated debt. Instead of launching industrial parks with high initial investment cost in every part of the country, choosing strategic locations would have saved capital that could be used to support local industries to become productive and improve the quality of their products.

Table 9: Project investment costs of industrial parks in Ethiopia

No.	Project name	Project investment cost in birr[6]
1	Bole Lemi I industrial park	525,620,301
2	Hawassa industrial park	6,830,726,519
3	Mekelle industrial park	1,837,235,013
4	Kombolcha industrial park	1,775,354,563
5	Adama industrial park	2,901,638,220
6	Diredawa industrial park	3,016,582,161
7	Dibrebirhan industrial park	952,798,094
8	Jimma industrial park	1,490,737,363
9	Bahirdar industrial park	1,125,626,510
10	Kilinto industrial park	8,590,523

4.6 Operational industrial parks and their contributions

Table 10 presents the major investors in the two operational industrial parks: Hawassa and Bole Lemi I along with their major sources of inputs for production in the parks. About 75% of the investor companies are from Asia whereas another 5% are from the US, 5% from Africa, 10% from Europe, and only 5% are domestic investors. This shows that most investors in the operational parks are from the rest of the world implying the limited participation of local infant industries which are supposed to sustain the industrialization and structural transformation of the country. All the industries located in the parks use imported inputs leaving little space for the industrial parks to contribute to the value chain.

Table 10: Hawassa and Bole Lemi-I industry parks' investors by origin in %

Investors Country by Origin in Hawassa	Ownership in %	Sources of inputs	Investors by Country in Bole Lemi-I	Ownership in %	Sources of inputs
USA	5	Imported	India	45	Imported
Europe	10	Imported	China	27	Imported
Asia	75	Imported	South Korea	27	Imported
Africa	5	Imported	Africa	-	-
Ethiopia	5	Imported	Ethiopia	-	-

Source: Authors' compilation.

Concerning employment, in Hawassa industry park of the 60,000 full capacity employment, 44% or 26,599 persons were employed by the companies located in the park. In Bole Lemi,

[6] The exchange rate for the local currency varies over time. The average exchange rate in 2016 was1USD=27 Ethiopian birr (NBE, 2016)

67% of full capacity of 25,000 or 16,763 persons were employed in the park as of to date. Regarding to exports, Hawassa exported approximately 63 million USD and 40 million USD was generated from the Bole Lemi industrial park. The parks create temporary employment opportunities for thousands of people but as it is indicated in Table 8 the employees are unskilled without the potential of taking advantage of technology and knowledge spillover effects. They are also unable to take over and sustain production in the absence of the foreign employees. Around 95% of employees in the parks are imported labor.

5. Regression Analysis of Polity and Manufacturing Industry's Growth

This section empirically discusses the role of polity2 in the manufacturing industry's growth in Ethiopia. Polity2 measures the level of democracy across different regimes with a value ranging from -10 to 10 indicating autocracy (-10) in an extreme case and the democracy (10) level of a country. The values ranging from -5 to 5 represent a case called anocracy with the features of a mixed democracy and autocracy (Deacon, 2009). This section provides the overall trend in polity2 in Ethiopia across regimes followed by the regression results of the impact of the political institution proxied by polity2 index on industry's growth controlling for openness, labor and capital in the model.

Figure 3 gives the overall trend of the polity2 index for the three political periods in Ethiopia. During the Imperial period, the polity2 was close to -9 indicating a level very close to autocracy with centralized powers with the government. During the Derg regime, except for a few periods in which the index indicated anocracy the entire regime was autocratic with an economy that had centralized planning and an ideology of socialism. During the EPRDF period, the index indicates that the anocracy level of democracy or governance altered at different levels. This shows that the level of democracy measured by the index over time was more autocratic in the two regimes and currently more of anocracy with some level of democracy.

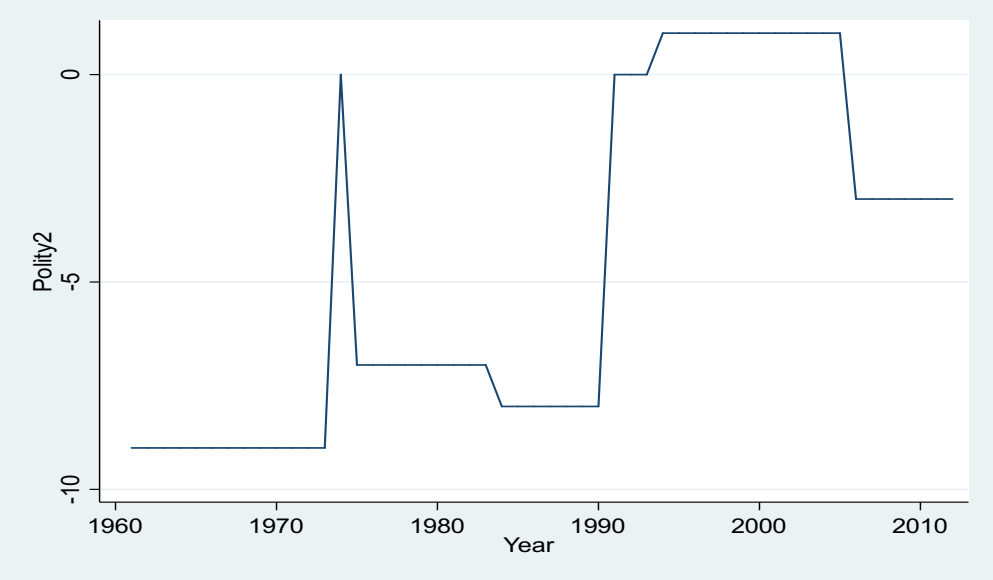

Figure 3: Development of Ethiopian polity2 index trend over time

The descriptive statistics for the variables in the regression model are presented in Table 11. The dependent variable is manufacturing industry's value added (MVA). There are four explanatory variables in total and a major explanatory variable of interest is polity2 index measuring the form of governance in the country. The index indicates political institution while labor, capital and openness are considered as control variables in the model. In the sample,

there are 44 time-series observations from 1970 to 2013. The study period is limited by data availability on the polity2 index. Table 11 gives the summary statistics of the data prior to log transformation.

Table 11: Descriptive statistics of the variables

	MVA	Labor	Capital	Polity2	Openness
Mean	8,853,038	54,600,855	17.2848	-3.7954	31.8954
Median	7,611,183	50,516,777	14.0524	-3.0000	30.0446
Maximum	24,798,230	95,385,785	37.0981	1.0000	51.0867
Minimum	4,449,098	28,415,077	7.5069	-9.0000	11.7899
Observations	44	44	44	44	44

The first step in any time-series regression analysis is testing for the stationarity of the series using different unit root tests. Table 12 provides the Augmented Dickey Fuller unit root test's results for the variables in the model. Manufacturing value added, capital, and the polity index are non-stationary at level but stationary at first difference indicating that these variables are integrated of order one while labor is trend stationary and is integrated of order zero. Hence, this calls for a method of estimation such as ARDL that accommodates the mixed order of integration.

Table 12: Augmented Dickey Fuller unit root test's results

Variables	At level		At First Difference		Order of Integration
	Intercept	Trend with intercept	Intercept	Trend with intercept	
MVA	0.9631	0.8331	0.0055	0.0164	I (1)
Labor	0.9999	0.0022	0.6591	0.9642	I (0)
Capital	0.8512	0.2075	0.0000	0.0000	I (1)
Polity2	0.2266	0.3676	0.0000	0.0000	I (1)
Openness	0.6815	0.7409	0.0000	0.0004	I (1)

Before the estimation, the optimal lag length is selected based on different selection criteria with two being opted for as an optimal lag length for the model. Based on a number of tests (LR, FPE, AIC, SC and HQ) [7] shows all the variables in the model have two as the optimal lag length.

The bound test for the existence of a long-run relationship confirms the existence of a long-run relationship between the form of government or political institutions and the manufacturing industry's growth in Ethiopia. The value for the F-statistic with 4 restrictions (7.29) is greater than the upper and lower bound at the 1% level of significance. This result confirms the existence of long-run relationship but does not provide the direction of the relationship and the magnitude of the relationship between the variables of interest. Hence, we proceed to the long-run and short-run estimation of the coefficients.

Table 13 gives the estimation results from OLS and ARDL estimation methods. In both the cases polity2 is found to be statistically significant and negatively impacting manufacturing growth in Ethiopia. Trade openness in both the models is statistically significant and positive. However, the OLS coefficients are not taken because some variables in the model are not stationary at level resulting in spurious results but corrected by the ARDL approach. Based on the ARDL estimation results, polity2 is significant with a negative effect. A one-unit change in polity2 or regime change from democracy to autocracy will reduce manufacturing growth in the long-run. This means when power is centralized it negatively impacts the performance of industry. Similarly, the form of government is statistically significant and negatively affects

[7] To conserve spaces, all results are not presented here. They are available from the authors upon request.

manufacturing growth in the short-run. Openness in the ARDL model's estimation is statistically significant and positive both in the long-run and short-run. The adjustment coefficient is statistically significant with a negative coefficient value indicating 26% adjustment to the long-run equilibrium annually.

Table 13: Regression results: manufacturing industry value-added is the dependent variable

	OLS		ARDL Long-run			ARDL Short-run	
Variables	Coef.	p value	Coef.	p-value	Variables	Coef.	p-value
Labor	1.1602	0.0000	1.3707	0.0005	D(Polity)	-0.0089	0.0000
Capital	0.0898	0.4475	0.1970	0.4114	D (openness)	0.2949	0.0000
Polity2	-0.0284	0.0000	-0.0492	0.0003	D(openness (-1)	0.2928	0.0001
Openness	0.2224	0.0323	0.5366	0.0482	CointEq(-1)	-0.2575	0.0000
Constant	-2.5837	0.0156	-4.8426	0.0831			
Adj R^2 = 0.8805, F-test probability = 0.0000, Number of Observations = 44							

To consider the implications of the estimated results one must check the model through diagnostic tests. In this study a post estimation test for normality, autocorrelation, heteroscedasticity, and model specification tests was done with the probability value of the tests statistics enabling us to reject the null hypothesis of the existence of the statistical problems. The diagnostic test results are in favor of the estimated model. The normality test of the residuals in the model and the Jarque-Bera probability is 0.88. Based on that, we fail to reject our null hypothesis that the residuals in our model are normally distributed. In testing the post-estimation coefficient stability of the model, the results showed that at the 5% significance level the estimated coefficients in the model are stable.

6. Conclusion and Policy Implications

This study investigated the political economy of industrialization in Ethiopia. The Ethiopian modern history covers three political regimes that pursued different industrial policies organized in the framework of different economic systems. The Imperial period was characterized by a centralized market economy with an import substitution industrial policy for labor intensive industries. The Derg regime, which had a centralized command system, pursued an import substitution policy. The current regime which is organized as a non-centralized market-oriented system promotes exports for labor-intensive industries.

In the three regimes, despite the different economic systems and policy strategies the contribution of the industry sector to GDP and employment was not significant. The share of manufacturing industry did not exceed 5% for more than eight decades and the share of manufacturing exports in total exported merchandise and GDP was very minimal. The trade sector across different regimes was also in deficit. The study showed that coffee was a major export item during this period. In general, exports were dominated by primary commodities and capital goods were the major imports with an insignificant share of industrial products in the export sector. Currently, Asia is the dominant continent for Ethiopia's international trade and Addis Ababa is a major city for industries (35% share) followed by Oromiya, Amhara, and Tigray with 28%, 11%, and 9% share respectively.

The political and economic institutions in the country too were different during the different regimes. For instance, the form of government during the Imperial regime was monarchical giving powers to the King with a feudal ideology. The economic system was centralized and market-oriented. In the Derg regime, the form of government was dictatorship with a socialist ideology and command economic institutions. In the recent regime, the form of government is

anocratic with a developmental ideology and a mixed economic system. In all the three regimes, political institutions influenced economic institutions adversely and the manufacturing industry failed to contribute more than 5% to GDP.

The study also showed that different development plans and industrial strategies were implemented in the country during the three political regimes. Specifically, there were an industrial strategy of import substitution industrialization and an export-oriented strategy, but analysis of the industry's performance shows that the policies failed to have an impact in both the cases. This result shows that something is missing between the policies and their optimal implementation which can be attributed to the government's focus on centralized political issues rather than on decentralized economic priorities.

Very recently, industrial parks (IPs) have become a strategy for industrialization and 11 industrial parks have been established across the country with a major focus on apparel and textiles. The good thing about the parks is that they are creating employment opportunities for the unemployed people but with short term effects. The industries are dominated by foreign companies attracted by cheap unskilled labor, tax incentives and infrastructure to access the national and African markets. From Ethiopia's perspective, the employment potential in the parks does not absorb the technology and knowledge spillovers to take over production in the long-run because of the dominance of an unskilled labor force. The parks focus more on apparel and textiles ignoring other agriculture-based industries with Ethiopian competitive advantage.

Again, the locations of the industries show that this selection is ad-hoc which violates the industrial parks' establishment objectives and capacity utilization. The requirements clearly show that the parks must be strategically located taking the required infrastructure and logistics into consideration that can make the zones to be more competitive in the international market. However, for political reasons the industrial parks are located as painkillers for social unrest. The companies in the parks import their raw materials from the rest of the world without using inputs produced domestically. Excessive imports of raw materials put the sustainability of industrialization at a risk with nil linkages or value chain effects required to sustain the sector.

The bound test for cointegration confirmed the existence of long-run relationship between political institution and manufacturing growth in Ethiopia. Besides, the estimation results indicated that political institution is a statistically significant factor that negatively affected industrial growth both in the long-run and short-run. Trade openness is statistically significant and a positive factor explaining the growth of manufacturing both in the long-run and short-run. This shows that political institutions have a significant role in explaining the manufacturing industry's slow growth in Ethiopia.

Based on these findings, we conclude that the different policy strategies used by different regimes in the past alternated between import substitution, export promotion and recently industry park establishment. The policies did not bring about the expected outcomes in the form of industrialization and economic growth. Hence, relevant province specific research on indigenous opportunities and challenges faced by the industry and the economy should be conducted. The focus should be shifted from giving priority to political issues to focusing on the fundamental and competitive advantages of the country. In addition, the country needs a development strategy that gives weight to the sectors based on their competitive advantage. The agricultural development led industrialization policy does not focus much on industry and other sectors are ignored in the industrial development strategy.

For several decades, the political institutions have been a major factor impacting economic institutions in the wrong direction and making the policies to have a retarding impact on different sectors including the industry sector. Policy strategy and instruments should be

managed in a way that they can bring real structural change by managing the political interests of a regime and its organization in favor of the national economic outcome. This ultimately call is for a benevolent governance system that gives priority to the welfare of the people and the economy rather than focusing on how to sustain political power for unlimited time periods.

An optimal and efficient strategy to induce industrialization could be a development strategy that gives priority to the development of the mining industry for supplying raw materials to the industry sector along with a focus in the competitively advantageous sectors in the economy. This will reduce Ethiopia's dependency on imported raw materials by enhancing its self-sufficiency. Investments in human capital combined with a regulation of foreign investments, especially mixed allocation of domestic and foreign low skill and high skill labor in production and management, will enhance local management and the technological capacity of the country. Ultimately, the progress gained in the development of mining and industry sectors and technological capabilities will spill over to agriculture, manufacturing, and ultimately to the service sectors as well as to governance and institutions. This ultimately will lead to economic development both in the sectors and regionally and efficient productivity-based resource allocations and inclusive and sustainable development with reduced ethnic unrest.

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