



Evolving Patterns of Structural Change in Sub-Saharan Africa

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The traditional structural change process, as it has evolved in East and parts of Southeast Asia, has involved a shift of labor out of agriculture and into labor-intensive manufacturing. It has relied on political coalitions based on farmers and new manufacturing entrepreneurs to implement policy. However, this does not seem relevant to the situation in Africa. This is because labor in this region is not relatively abundant, and industrial technology is becoming more capital-intensive. As a result, in Africa, the dynamic relationship between manufacturing and agriculture has been significantly reduced or weakened, and development coalitions based on expanding manufacturing are likely to fail. The recent experience of Ethiopia suggests that structural change there initially involved a shift of labor into traditional services. This was driven by investment in agriculture and infrastructure services (transportation, communications, and trade), with productivity growing in both sectors, agriculture and traditional services. Thus, political coalitions in Sub-Saharan Africa seeking to successfully promote economic development would seem to require the incorporation of service sector entrepreneurs. As services develop, manufacturing may in the longer run become more viable as the rising productivity in traditional services enhances productivity in manufacturing.

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INTRODUCTION

This paper argues that the process of structural change in much of East and Southeast Asia, on the one hand, and Sub-Saharan Africa, on the other, has been quite different. Both regions have experienced some political settlements involving the formation of coalitions seeking to promote economic development via productivity growth and structural change. The importance of political settlements in the process of economic development is best illustrated in the work of Khan (2010). However, the process of structural change in the two regions has been quite different. East and Southeast Asia have been characterized by a relative abundance of labor (relative scarcity of land). Initially, the bulk of the population in this region was involved in agriculture; thus, the existing comparative advantage was in agriculture, but the relative abundance of labor implied a potential comparative advantage in labor-intensive manufacturing. In this context, political and social entrepreneurs built political coalitions that sought to pursue policies aimed at coordinating the shift of labor out of agriculture and into labor-intensive manufacturing (Wade, 2003). Part of this process involved increasing agricultural productivity so as

to release labor from agriculture, and the use of industrial policy to coordinate the expansion of labor-intensive manufacturing. Agricultural productivity growth was dynamically interlinked with manufacturing development.

The strategy followed in East and Southeast Asia incorporated an approach to development which emphasized a technological upgrading of manufacturing, such that a developing comparative advantage in such production provided the basis for rapid overall growth. This generally involved forms of protection for specific industries combined with incentives (both positive and negative), to promote long-term productivity growth. This required a state that was capable of pursuing policies aimed at overall development involving rapid export growth (Wade, 2003).

Sub-Saharan Africa, for the most part, has lacked state structures capable of rapidly altering the structure of the economy. Colonialism in Africa involved the construction of political and social structures designed for what Acemoglu et al. (2001) would call the extraction of resources, not local economic development. With the end of colonialism, many of the states in the region embarked on a strategy of import substitution (Irwin, 2021), which initially raised economic growth rates. This strategy collapsed as the protected firms failed to export, and international indebtedness became too great. Many African state structures became increasingly parasitic or predatory in nature, with political regimes intent on allocating resources to promote the interests of the elite at the expense of society in general (Robinson, 1999). Difficulties also existed within agriculture in that systems of land tenure often failed to provide appropriate incentives for investment (Booth, 2020).

In addition to the above difficulties, large parts of this region were and are less labor-abundant, and labor is relatively more expensive in comparison with East and Southeast Asia (Wood, 2019). While possessing an initial comparative advantage in agricultural production, the potential for developing labor-intensive manufacturing seems significantly limited, especially in an environment of trade liberalization. In addition, in most manufacturing, even in those sectors characterized as labor-intensive, technology has become increasingly capital-intensive because the bulk of technological research in manufacturing occurs in capital-abundant developed countries. This is supported by the work of Diao (2025). They find that the manufacturing sectors of several African countries are characterized by a dualism in which small, labor-intensive firms employ the most workers at very low productivity, while a second group of manufacturers, in which the firms are much larger, employ fewer people, utilize significantly more capital per worker, and attain higher levels of productivity. As a result, the dynamic link between agriculture and manufacturing has been weakened (de Janvry & Sadoulet, 2020). This disconnect implies that political coalitions seeking to promote structural change similar to that in East and Southeast Asia are likely to face significant difficulties.

The growth in modern manufacturing would be limited as agricultural productivity increases and/or population growth in agriculture releases labor from this sector. As a result, the labor released has flowed into traditional services. It has been argued by Diao et al. (2017) that this shift has resulted in falling labor productivity in traditional services. Political coalitions seeking to establish a political settlement emphasizing agricultural productivity and a shift into manufacturing are likely to fail. Thus, investment in raising agricultural productivity will likely be limited, and the lack of investment in agriculture found to exist in Africa can be seen as logical from a political perspective. This is not to claim that this factor alone has limited investment in agriculture; there are likely other factors, for example, the notion of urban bias (Lipton, 1977) and the fact that the returns to investment in agricultural technology have a long gestation period, while political coalitions often are short-sighted and focused on immediate survival (Beintemo & Stads, 2017). The emphasis here is that the particular model that formed the basis of political coalitions in East and Southeast Asia does not seem to work in Africa, and thus, political coalitions are unlikely to provide the resources for investment in agriculture. Instead, industrial policies aimed at directly promoting the expansion of modern manufacturing exports are likely to be the focus of growth-oriented political coalitions (Aiginger & Rodrik, 2020). This will be extremely difficult to carry out, given the relative scarcity of capital (both

physical and human) in Africa.

This perspective paints a rather grim future for the structural change process in Sub-Saharan Africa. However, recent research indicates a different model of structural change may be evolving that may provide the basis for the ruling coalition's seeking to promote structural change leading to economic development. This model of structural change sees a dynamic relationship between agricultural productivity growth and labor productivity in traditional services. That is, productivity growth in agriculture stimulates productivity growth in traditional services. Ethiopia's experience provides support for the idea that political coalitions promoting agricultural productivity growth and investment in infrastructure services may find a successful mechanism for political success.

The rest of this paper unfolds in the following manner. Section two will discuss in some detail the dynamic interaction between agriculture and manufacturing in the process of structural change as it unfolded in East and Southeast Asia. Section three will focus on the process of structural change in Africa and its inherent limitations resulting from the disconnect between agriculture and manufacturing. In addition, an alternative process of structural change will be discussed based on the Ethiopian experience.

STRUCTURAL CHANGE IN EAST AND SOUTHEAST ASIA

Many countries in East and Southeast Asia have followed a similar path of structural change. In Figure One, changes in total factor productivity are broken down by regions with the countries designated to each region by the United States Department of Agriculture (Economic Research Services). One can see that both North East Asia (Japan, South Korea, and Taiwan) and Southeast Asia (Cambodia, Indonesia, Laos, Malaysia, and the Philippines) have experienced rapid increases in total factor productivity in agriculture, labeled TFPANEA and TFPASEA, in comparison with Africa (labeled TFPASSA). Thus, significant investments in raising agricultural productivity played an important role in East and Southeast Asia, compared to Africa.

The pattern of structural change has also differed between Africa and South and East Asia. The measure of structural change used here is the share of total employment in three sectors: agriculture, manufacturing, and services. Given the limited data available concerning employment in Africa, the countries included in the discussion here are Botswana, Ethiopia, Kenya, Malawi, Mauritius, Nigeria, Senegal, South Africa, Tanzania, and Zambia. Asia includes Indonesia, Japan, South Korea, Malaysia, the Philippines, Taiwan, Thailand, and China. The period covered is 1960 to 2010. This period is utilized to capture the takeoff period for Asian countries. After presenting these results, a more recent period for Africa was examined to determine whether the trends in the earlier period have

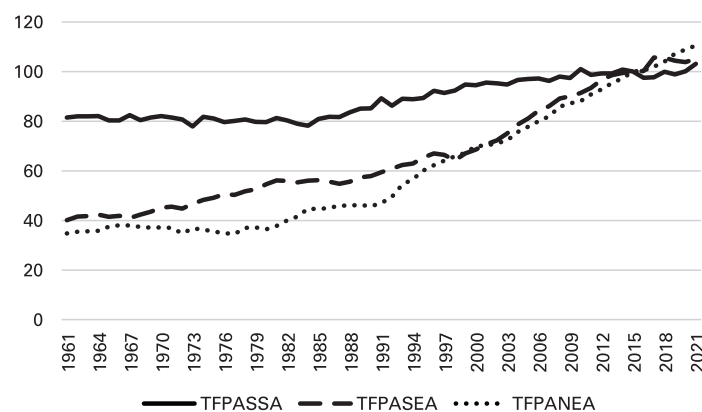


Fig. 1. Total Factor Productivity in Agriculture

Source: USDA Economic Research Service, International Productivity (Base Year 2015)

continued into more recent times.

In Asia, the employment share in agriculture was 48% in 1960 and fell continuously to 21% in 2010. In Sub-Saharan Africa, agriculture's share in employment fell from 73% in 1960 to 51% in 2010. Thus, both regions experienced a shift of labor out of agriculture, although the shift in Asia was stronger. In Asia, the share of employment in manufacturing rose to 19% in 1990 and then fell to 15% in 2010. For Sub-Saharan Africa, manufacturing's share rose to 9% in 1990 and then fell to 7% in 2010. Thus, manufacturing played a much smaller role in Africa relative to Asia. In terms of services, the employment share for Asia rose from 33% to 56%, while that for Africa rose from 18% to 37%. Thus, comparing the two regions, manufacturing played an important role only in Asia, while services played an important role in Sub-Saharan Africa (de Vries et al., 2015). More recent analysis (Mensah et al., 2023) indicates that the trends discussed above continue to hold for Sub-Saharan Africa. Thus, structural change in Africa remains highly dependent on a shift into services, not a significant shift into manufacturing.

Theoretical discussions of the structural change process shed some light on this process in East and Southeast Asia. The most famous model of structural change is found in the work of Lewis (1954). In his work, the economy is divided into the modern and traditional sectors. Since his work, the traditional sector has often been identified as being agriculture, and the modern sector as manufacturing. The model was meant to apply to countries that were labor-abundant; in fact, it was assumed that the marginal product of labor in the traditional sector was zero. The modern sector pays a wage premium to labor with the supply of labor coming from the traditional sector being unlimited. Capital accumulation in the modern sector drives the structural change process. Agriculture serves as a source of labor and a provider of key agricultural goods (food) to the modern sector.

Lewis realized that as surplus labor was exhausted, problems could arise if agricultural productivity did not rise, and this was made explicit in the work of Ranis and Fei (1961). Without surplus labor, food would become increasingly expensive relative to manufactured goods, and this would slow the expansion of manufacturing. Thus, technological change in agriculture would be necessary for continued structural change to occur. This analysis is carried out in a closed economy setting. In an open economy setting, one can assume that initially, a comparative advantage would occur in labor-intensive agricultural production. However, the relative labor abundance implies that there is a strong potential for comparative advantage in labor-intensive manufacturing. Continued capital accumulation in manufacturing implies that a shift to exporting labor-intensive manufacturing could occur. The perspective discussed above seems pretty consistent with the process of economic development in the relatively labor-abundant countries in East and Southeast Asia. Labor shifted from agriculture to labor-intensive manufacturing, with exports of the latter rising rapidly.

Other theoretical approaches shed light on structural change and allow for a third sector, services. A good example of this approach is provided in the work of Huneus and Rogerson (2020). Their work incorporates three sectors, and productivity growth is assumed to be higher in manufacturing relative to services. In their model, productivity growth in agriculture releases labor into the nonagricultural sector, and initially, this causes the employment share in manufacturing to rise rapidly, while services grow slowly. However, the slower growth in the service share of employment results in a rise in the price of services relative to the price of manufactured goods, which in turn causes the employment share of manufacturing to begin falling relative to services. Thus, the share of employment in agriculture falls, the share for manufacturing rises and then falls, and the share of employment in services rises.

The analysis discussed above (Huneus & Rogerson, 2020) has an important role for agriculture in the process of structural change. The faster the growth of agricultural productivity, the faster or sooner labor moves out of agriculture, and the higher the maximum share of manufacturing employment becomes (before declining relative to services). The slower agricultural growth, the slower labor leaves agriculture, and the lower the maximum share

of manufacturing attained. In an open economy setting where labor-abundant countries have initial comparative advantages in agriculture and a potential advantage in labor-intensive manufacturing, faster productivity growth in agriculture will hasten the development of labor-intensive manufactured exports. However, it should be pointed out that Wade (2003) and others have shown that the shift into labor-intensive manufacturing needed significant coordination by the state to make this shift.

The effectiveness of this development strategy requires a state whose goal is to promote economic development and a bureaucracy that can carry out a strategy promoting growth-enhancing structural change. Thus, politics, political coalitions, and political settlements become critically important. Within society, groups jockey for position, entering and leaving political coalitions with the purpose of gaining control over the political and economic institutions of society. Thus, there is an interplay between politics and economics in which political power influences the distribution of economic resources and the evolution of the latter in turn alters the distribution of political power and the evolution of political institutions (Acemoglu & Robinson, 2012).

The above perspective seems to imply that the existing distributions of political power and economic resources are likely to perpetuate political settlements supporting the status quo, limiting productivity-enhancing structural change. As Khan (2010) has argued, political settlements emerge when the distribution of benefits supported by its institutions is consistent with the distribution of power in society, and the economic and political structures of these institutions are sustainable over time.

However, this is to put a more deterministic cast to the analysis than is necessary. This ignores the impact of political and social entrepreneurs. The concept of these sorts of entrepreneurs comes from the work of North (1981), Di Maggio (1988), and Battilana et al. (2009). These are agents of political and institutional innovation. They are certainly constrained by the existing distribution of political power and resources. However, the existing political and economic elite's ability to maintain the status quo is limited in most developing countries. Geographically, their power is likely higher in urban areas in comparison with rural areas and is also likely to vary by department and organization within the state. Thus, gaps and openings allow for entrepreneurship to alter political and economic institutions.

In addition to the above, institutional and political rules, both written and unwritten, are often characterized by ambiguity and differences in interpretation. Thus enforcement of policies and rules leaves significant amounts of discretion to those parts of the state that influence the enforcement of policies and rules.

The political and economic power of the elites themselves face significant limitations related to information and knowledge. Thus, the outcome of particular policies carried out by political and social elites is subject to a great deal of uncertainty and is often characterized by unexpected consequences. These unexpected consequences often involve changes in the distribution of economic and political power (Grabowski & Self, 2021).

These considerations imply that political and social entrepreneurs have room for maneuvering in terms of formulating political coalitions aimed at raising productivity. These innovations will require structural changes that result in the decline of some economic sectors and the rise of new, more productive sets of activities and sectors. These can result in the rise of new groups of producers that political and social entrepreneurs can incorporate into new political settlements that provide the political foundations for reform. However, the success of innovative coalitions will depend on how successful the reforms are in terms of creating broad increases in productivity. If political and economic entrepreneurs pursue policies with a low probability of success, their political coalitions are likely to collapse. Those reforms and policies that have a higher probability of success are likely to provide political support for coalitions promoting such policies.

In the discussion above, agriculture plays a significant role in the development of manufacturing. A political coalition seeking to promote structural change that raises overall productivity by shifting labor out of agriculture and into manufacturing is not likely to succeed without investing in agricultural productivity. The experiences

of Japan, Taiwan, South Korea, and parts of Southeast Asia (Hayami et al., 1979) tend to support this idea. In these countries, agricultural productivity occurred in earlier periods and concurrently with the expansion of manufacturing. The states in these countries invested in raising agricultural productivity and coordinated the shift of labor into manufacturing. Agriculture and manufacturing were dynamically linked together. Those political coalitions seeking to bring about structural change, raising overall productivity, had a model upon which to base their strategies for creating coalitions aimed at overall development. Although the construction of such coalitions is always a gamble (Dercon, 2022), the dynamic link between agriculture and manufacturing increased the likelihood of success. However, conditions in Africa were quite different. Thus, the incentives facing political and social entrepreneurs were quite different.

STRUCTURAL CHANGE IN AFRICA

The conditions in terms of relative factor abundance have been quite different in Africa. Wood (2019) has shown that compared to Asia, Africa was and still is less labor-abundant and more land-abundant. Of course, this condition is less true for some, and thus, the extent of relative land abundance varies from country to country. As a result, one would expect labor costs for many countries in the region to be higher than those found in Asia. This is confirmed in the work of Gelb et al. (2020). Using a panel of firm-level data from the World Bank's Enterprise Survey, they examined labor costs in a range of low and middle-income nations in both Africa and Asia. They found that compared to countries in Asia at similar income levels, labor in Africa is significantly more costly. Other than the physical scarcity of labor itself, other factors may play a role as well. Specifically, the higher cost of living, in particular food, may increase the relative cost of labor. In addition, limited infrastructure may significantly reduce the mobility of labor and government regulation may also make it difficult to efficiently allocate labor. Thus, producing and exporting labor-intensive manufactured goods will be extremely difficult. The model discussed in the previous section, in which actual comparative advantage is initially in agriculture, with potential comparative advantage in labor-intensive manufacturing, becomes actualized via the transfer of resources and labor into manufacturing, seems less relevant for Africa.

A more relevant model was developed in the work of Matsuyama (1992). It is a two-sector model: agriculture and manufacturing. It is assumed that the income elasticity of demand for agricultural goods is less than one, and learning by doing occurs only in manufacturing. In a closed economy setting, agriculture and manufacturing are linked together. Increases in agricultural productivity are necessary if manufacturing is to expand and grow. In an open economy setting in which there is a comparative advantage in agriculture (land-intensive), expansion of the agricultural sector will draw resources away from manufacturing and thus lower economic growth. The implication is that trade liberalization in this context will reduce manufacturing capabilities. Investments aimed at increasing agricultural productivity will reduce manufacturing capability. There is no longer a dynamic positive link between the two sectors.

Of course, the assumption that the manufacturing sector is the only sector subject to learning by doing is not tenable. The work of Martin and Mitra (2001) finds that productivity growth in agriculture is generally greater than that for manufacturing, both on average and for different groups of countries and different stages of development.

However, the implication concerning the interaction between agriculture and manufacturing remains. Countries that are relatively land-abundant will find it much more difficult to shift labor into manufacturing as compared to labor-abundant countries. The income effects of productivity growth in agriculture will increase the demand for services and manufactured goods, with the latter mainly being imported. Thus, linkages between productivity growth in agriculture and manufacturing are much weaker, but in some areas, such as agroprocessing, still important.

In this context, social and political entrepreneurs seeking to form political coalitions to promote the expansion of manufacturing will view investment in agriculture as an ineffective way to promote industrialization and thus difficult to justify. Investment in agriculture will not create a strong political coalition that incorporates political elites from manufacturing. Thus, political support for investing in agriculture will be limited.

This explains a very interesting contradiction that has emerged in policy-making in Africa. Over the last decade, there has been an increased public discussion of the importance of agriculture for Africa, so much so that in 2003, African leaders adopted a framework known as the Comprehensive Africa Agricultural Development Program (CAADP), also known as the Maputo Declaration. One of the main policies was to set a goal of spending at least 10% of budgetary resources on agricultural development. This commitment was renewed in 2013 in the Malabo Declaration of Accelerated Agricultural Growth. The World Bank supported this perspective in a 2013 report called “Growing Africa”. In 2016, the African Development Bank sought to promote CAADP’s goals. Thus, there were significant public commitments made for agricultural development. By 2019, very few countries had made significant progress toward the goals focused on promoting agricultural productivity growth (Ndii, 2022). In addition, NEPAD (New Partnerships for African Development) and its member countries agreed to spend 1% of agricultural GDP on research and development for agriculture. This has actually declined over time, with 81% of the nations investing less than 1%.

Thus, despite public commitment to promoting agricultural productivity, there has been only slow progress towards this goal. Economic and political elites have not created political coalitions focused on raising agricultural productivity. However, this seems to follow from the fact that political and economic elites did not see raising agricultural productivity as an effective mechanism for a structural change process involving a shift of resources out of agriculture and into manufacturing. Indeed, since agriculture and modern manufacturing have been delinked, their perception was likely accurate. Thus, public commitments to agricultural investment in productivity were not met and agricultural productivity growth has been limited.

As a result, structural change in Africa has followed a different path. Instead of rapid increases in manufacturing employment, there have been rapid increases in employment in traditional services. The general view is that the movement into services has meant a movement into a sector where labor productivity is low, and productivity growth is slow or nonexistent. The work of de Vries et al. (2015), utilizing data on structural transformation in eleven countries, found that beginning in the late 1990s, workers mainly relocated to services where productivity was higher than in agriculture, but productivity growth was low. They characterized such structural change as resulting in static gains but dynamic losses. This process is driven by population growth and expenditures from agricultural households, part of which is on imported manufactured goods and part of which is spent on traditional services (which are generally not tradable).

This analysis of Africa seems to paint a gloomy prospect for generating a shift in employment into manufacturing via rapid agricultural growth. This also implies that political elites seeking to carry out industrial policy aimed at promoting manufacturing in Africa are likely to face a much more difficult task than that faced by development-oriented political coalitions in East and Southeast Asia. The latter were relatively more labor-abundant and thus possessed a potential comparative advantage in manufacturing. As a result, political entrepreneurs in Africa seeking to promote a shift into manufacturing are unlikely to try to dramatically increase investment in agriculture since the dynamic link between agriculture and manufacturing is very weak.

ETHIOPIAN EXPERIENCE

The recent experience of Ethiopia offers an alternative process of structural change. Ethiopia has experienced a rapid rate of growth since the early 2000s (although civil war has certainly slowed economic activity recently).

Table 1. Labor Productivity by Sector, Overall Labor Productivity, and Growth of Overall Labor Productivity

Year	AGRI	MAN	CON	TRSP	TRAN	BUS	FIN	REAL	GOV	OTSP	GVAP	GVAPG
1990	8.77139	32.46548	120.7165	167.3996	37.87912	87.33782	67.3647	488.4322	15907.2	14.16545	11.07192	11.44454
1991	8.581261	17.42208	31.99367	121.556	158.0445	37.59432	90.38784	75.94356	607.5313	20095.42	11.51154	11.13683
1992	8.125375	16.88164	31.52872	122.4215	149.2121	37.31167	93.54437	74.58051	596.1027	19073.62	11.96863	10.52288
1993	8.824268	16.35797	31.07053	123.283	140.8734	37.03113	96.81114	76.74363	584.889	20805.01	12.44386	11.68134
1994	8.270353	15.85054	30.61899	124.1506	133.0007	36.75271	100.192	78.56449	573.8863	22962.14	12.93796	11.33567
1995	8.314266	15.35885	30.17402	125.0242	125.5679	36.47638	103.6909	81.04608	563.0906	24863.83	13.45168	11.51446
1996	8.477726	14.88241	29.73551	125.9041	118.5506	36.20213	107.312	82.40751	552.498	26992.58	13.9858	11.84662
1997	8.556745	14.42076	29.30338	126.7901	111.9253	35.92994	111.0596	83.68803	542.1046	29291.63	14.54113	12.09443
1998	7.477352	13.97342	28.87753	127.6823	105.6704	35.6598	114.938	84.57511	525.0127	29843.84	15.11851	11.20836
1999	7.561802	13.53996	28.45786	128.5809	99.76499	35.39169	118.9519	88.48507	521.7875	32125.48	15.71881	11.41583
2000	7.605757	13.11995	28.0443	129.4857	94.18962	35.12559	123.1059	90.45711	520.2364	34808.02	16.34295	11.65945
2001	8.143274	12.71297	27.63674	130.3969	88.92582	34.82636	127.4051	91.20544	520.227	37960.9	16.99198	12.25881
2002	7.816755	12.31864	27.23809	131.3256	83.95744	34.54978	131.8524	98.70189	340.7438	46756.9	17.66705	12.04908
2003	6.900193	11.93599	26.84248	132.2255	79.26721	34.25765	136.4528	100.2196	337.0135	51321.72	18.3652	11.45271
2004	7.84834	11.5656	26.45091	133.1551	74.83141	33.98677	141.2226	100.204	370.7814	53621.3	19.09597	12.49221
2005	8.692047	11.20778	26.06966	134.1168	70.65389	33.75025	146.1607	99.10369	409.9418	57588.93	19.85612	13.57646
2006	9.493276	10.85957	25.69111	135.0506	66.70174	33.47239	151.2568	101.1762	441.6261	65949.77	20.64121	14.70832
2007	10.15574	10.52306	25.31107	135.9892	62.97566	33.09401	156.5459	103.4361	432.9482	75985.53	21.46473	15.71995
2008	10.67923	10.19625	27.36428	101.3405	64.79627	38.17551	145.1853	98.8769	457.5101	89120.57	18.28828	16.82308
2009	11.13315	9.882307	27.78869	76.66132	67.01161	42.81162	131.8631	93.10901	439.2611	103275	15.03093	17.74956
2010	11.81574	9.573151	35.61086	56.22022	67.97266	46.89353	125.0712	90.64303	357.7423	123892.2	12.5538	18.73885
2011	12.61522	9.753887	50.15198	43.07335	70.06801	50.54391	114.4978	88.25044	365.2725	151237.9	9.740629	20.19262
2012	12.84334	10.45975	51.28421	35.63163	84.32582	56.56294	108.899	79.93955	379.389	157022.9	60.7567	8.659513
2013	13.53348	11.22447	49.39549	28.49412	106.7987	62.99568	107.0417	73.5173	278.4759	163129.2	61.18271	8.034813
2014	13.94605	12.38995	43.33525	29.40013	116.3736	71.79633	115.1947	73.50113	297.3931	169495.5	62.61462	7.699404
2015	14.53156	14.04441	30.03031	28.91246	133.9709	79.52527	123.6437	73.46699	296.3911	176826.6	63.60583	7.445509
2016	14.54734	15.62028	27.07029	31.66063	145.1261	83.55733	133.2329	73.68604	304.0659	182999.4	73.77128	6.854487
2017	15.20101	18.15164	17.79624	31.40339	158.0019	84.23716	144.4542	74.5656	338.7897	191028.2	76.19651	6.74754
2018	15.39473	17.7462	13.2745	30.94206	170.0756	89.40212	144.6047	73.03516	352.5358	202923.2	78.18386	6.708463

Source: Groningen Growth and Development Centre

Its growth rate averaged 10% per year from 2000 to 2020, and this has substantially reduced the extent of poverty (Hausman et al., 2022). So it is of interest to examine the characteristics of this growth. Data from the Economic Transformation Database produced by the Groningen Growth and Development Center, stemming from the work of Kruse et al. (2022), is utilized. This provides data on real value added by sector in the economy, as well as the number of persons engaged by sector. Thus, it is possible to construct real labor productivity for each sector of the economy: agriculture (AGRIP), mining (MINP), manufacturing (MFGP), utilities (UP), construction (CONP), trade services (TRSP), transport services (TRANSP), business services (BUSP), financial services (FINSP), real estate (REALSP), government services (GOVSP), and other services (OTSP). This data is presented in Table One (which also includes total gross value added per person, GVAP, and the growth rate of gross value added per person growth, GVAPG). The time period covers 1990 to 2018.

As can be seen, agricultural productivity (AGRIP) rises throughout the time period, while manufacturing productivity (MFGP) falls until 2010, rising until 2018, at which point it achieves the original level of productivity achieved in 1990. Trade services productivity (TRSP), transportation services productivity (TRANSP), real estate services productivity (REALSP), and government services productivity (GOVSP) all increased significantly. Both business services productivity (BUSP) and financial services productivity (FINSP) experienced declines in productivity.

Using the data discussed above and data on employment shares by sector, one can derive the contributions of each sector to the increase in total value added per person from 1990 to 2018. The results indicate that the main contributors to increases in value-added per person were agriculture (12%), construction (23%), trade services (25%), transportation services (5%), real estate services (5%), and government services (12%). Thus, growth in Ethiopia was driven by agriculture and services, along with construction (much of this associated with infrastructure creation), not manufacturing, business, or financial services. All of the results are presented in Table Two.

The row for 1990 shows the value added per person by each sector, with the sum adding up to equal the overall gross value added per person. The same holds for the row labeled 2018. The difference between 1990 and 2018 for each column represents the increase in value added per person by sector. The last row is the increase for each sector divided by the increase in overall gross value added, or in other words, the percent of gross value accounted for by each sector.

In order to illustrate the dynamic relationship between agricultural productivity and the productivity of the four

Table 2. Percent of the Increase in Value Added By Sector

Year	AGRI	MFG	MIN	U	CON	TRS	TRANS	BUS	FINS	REALS	GOVS	OTS	GVAP
1990	7.822017	0.366697	0.035432	0.098974	0.428858	1.379528	0.258621	0.131023	0.185002	0.213259	0.293013	0.232117	11.44454
2018	10.06082	1.694039	0.061743	0.191638	4.657227	5.923132	1.229051	0.615963	1.188967	1.108294	2.4106	0.639031	29.78051
Difference	2.238805	1.327342	0.026311	0.092663	4.228368	4.543604	0.97043	0.48494	1.003965	0.895034	2.117586	0.406914	18.33596
Percent	0.122099	0.07239	0.001435	0.005054	0.230605	0.247797	0.052925	0.026447	0.054754	0.048813	0.115488	0.022192	

Source: Author's Calculations

Table 3. Correlation Analysis

		Correlation
AGRIP	TRSP	0.93
AGRIP	TRANSP	0.22
AGRIP	REALSP	0.96
AGRIP	GOVSP	0.93

types of services, in which value added per worker rose rapidly, a correlation analysis was undertaken, and the results are presented in Table Three. As can be seen, there is a strong correlation between agricultural productivity and three of the four types of services. While this certainly does not imply causality, it does support a strong relationship. Additional data would be necessary to conduct a more stringent test.

Labor productivity growth in these services and infrastructure construction seems to be linked with agricultural productivity growth. This appears to be a different path of structural change in which agricultural growth is linked to the development of certain services, resulting in increased productivity in the latter sectors. In this context, a different political economy of development suggests itself. Instead of labor moving from agriculture to manufacturing via the utilization of surplus labor, the shift of labor is into services, and these sectors experience productivity growth. Expansion of physical infrastructure links agricultural growth to growth in productivity in the service sector. One can think of services as being characterized by monopolistic competition, with many small firms producing similar but differentiated outputs of services. An increase in demand emanating from agricultural productivity growth results in a dramatic expansion in the variety of such services (Eswaran & Kotwal, 2002). Thus, the law of diminishing returns, which would normally occur as labor moves into services that are limited in variety, would be offset. The greater variety of services also allows for both firms and households to more easily match their need for services with the greater variety provided, thus raising productivity.

Finally, an expansion of services resulting from income growth in agriculture allows service firms to reap economies of scale. Infrastructure development is key to this process since it knits together growth in agricultural productivity with growth in service sector productivity. Thus, innovative political entrepreneurs seeking to establish political coalitions capable of promoting structural change with labor moving into services can now base their efforts on agriculture. The distinction between political coalitions seeking to promote economic development in East and Southeast Asia and Africa is recognized in the work of Ohno (2009). He argues that the political coalitions in East and Southeast Asia were based on linkages between the state and agriculture and the rising capitalist producers in the manufacturing sector. Alternatively, the political coalition in Ethiopia was based on the state's links to agriculture.

The political context is important to understand how the process of structural change evolved in Ethiopia. Looking at the postwar period from 1950 to 1974, Ethiopia was ruled by a monarchy whose main goal was to foster industrialization with import substitution policies leading ultimately to export expansion. The neglect of agriculture and policies to raise this sector's productivity created a situation in which food shortages became increasingly common. This created an unstable political environment within which the monarchy was ultimately overthrown in 1974 (OECD/Policies Development Institute, 2020).

The new government dominated from 1974 to 1991, and this is known as the Derg (committee of soldiers) period. The ideological foundation was Marxist-Leninist, with the main emphasis being on industrialization and central planning serving as the mechanism for promoting industrialization. Land and other productive assets were nationalized, commercial farms were put under the control of the state, tenancy was abolished, and relative prices were set by various government institutions. The main purpose was to create a command economy by which resources could be extracted from agriculture and used to create an industrial sector. Rural development (via investment in agriculture) was not part of the overall development strategy. Thus, by the 1980s, Ethiopia was increasingly faced with economic difficulties, low agricultural productivity, and political instability. These difficulties, enhanced by periodic droughts, resulted in several famines. Several ethnic based militias sought to gain power, and thus a civil war ensued. In 1991, the regime was overthrown by the Tigrayan People's Liberation Front and its allies (OECD/Policies Development Institute, 2020).

The Tigrayan People's Liberation Front (TPLF) had spent years during the civil war organizing and mobilizing the Tigrayan people. Tigray is a region in northern Ethiopia whose population makes up about 6% of the Ethiopian

people. It sought to integrate other ethnic groups into a coalition (Ethiopian People's Revolutionary Democratic Front, EPRDF), but this proved to be a very difficult process. Thus, the main problem facing the new political regime and its leader, Meles Zenawi, was political legitimacy. Without this, it would be extremely difficult to remain in power. Although historically the new political elite was socialist in terms of ideology, the EPDRF had come to power after the Soviet Union had collapsed, and many socialist ideas had become discredited. Thus, the party leadership had to become more pragmatic in terms of ideas and development strategies (Lavers, 2024).

Agriculture was, at this time, the most important sector of the economy, and the bulk of the population earned their living in this sector, although labor productivity in agriculture was quite low. Thus, in terms of well-being, agriculture was of critical political importance. The previous regimes fell as a result of rural unrest. Thus, political support in the rural areas seemed critical to the generation of political legitimacy (Lavers, 2024).

With this context, the new political elite under the leadership of Zenawi sought to follow a strategy of development that focused on the development of the agricultural sector, and this has been labeled agricultural development-led industrialization (ALDI). This strategy of development was originally developed in the work of Adelman (1984). The approach was to initially invest in raising agricultural productivity, which would, through its linkages with manufacturing (both backward and forward), eventually provide the basis for a shift of resources and employment out of agriculture and into manufacturing. This would involve significant investment in the provision of new seeds, fertilizers, and agricultural extension services. However, it became quickly apparent that such a development strategy could not succeed without improvements in the provision of key services involving transportation, trade institutions, and communications.

The strategy of development has indeed involved the spread of new varieties, increased use of fertilizers, and increased investment in extension services. Thus, agricultural growth became more intensive and less extensive (World Bank Group, 2016). This rapid agricultural growth was accompanied by significant investments in infrastructure that led to growing productivity and additional investments in agriculture. Thus, the process of development involved the mobilization of the agricultural sector to expand productivity and create political legitimacy for the ruling coalition. However, is this development sustainable in the long run? The results of rapid productivity growth in agriculture and the expansion of infrastructure did not result in the rapid expansion of manufacturing or increased manufacturing productivity. Instead, it resulted in the rapid expansion of traditional services accompanied by a growth in labor productivity in these sectors.

This strategy of development, followed in Ethiopia, as mentioned above, has been labeled the agricultural development-led industrial development (ADLI). However, the actual process that occurred was one involving agricultural productivity growth in agriculture, driving the expansion of the services sector (traditional services) and growth in productivity in these sectors. This is an alternative and unique process of economic development that was surprising and unexpected for the governing elite.

This does not imply that manufacturing will not eventually develop and expand. There is some work, both theoretical and empirical, that suggests that as productivity in services increases, this will indeed serve as the foundation for the growth of manufacturing. Theoretical work by Eswaran and Kotwal (2002) discussed earlier argued that income growth from agriculture can lead to productivity increases in services, which would lower the costs of services for manufactured goods production, allowing for an expansion of the manufacturing sector, perhaps in agrobusiness processing. Some empirical support for this is provided in the work of Hoekman and Shepherd (2017). The analysis utilized firm-level data for more than 100 developing countries and found a strong positive linkage between the availability of services and manufacturing productivity. Indeed, as Table One shows, manufacturing productivity began to rise from 2010 to 2020. Thus, enhanced service productivity could stimulate expansion of manufacturing and possibly the development of manufactured exports. This would likely require government coordination policies to promote this type of development.

However, it appears that Ethiopian policy has recently changed. Specifically, agricultural spending as a share of total government spending reached a peak between 2006 and 2010 and then began a rapid decline. Total factor productivity in agriculture began to decline rapidly thereafter (USDA Economic Research Service, International Productivity). Meles Zenawi, the architect of the development strategy in Ethiopia, died in 2012. Attempts by the state to promote manufacturing and, especially, manufacturing exports, have so far failed to bear fruit (Lavers, 2024). Political conflict brought the downfall of the EPRDF ruling coalition. Ethnic conflict resulting in civil war has also recently afflicted the region. These political difficulties seem to be related to rising inequality. It is argued here that such a change in policy threatens the future of development in Ethiopia.

SUMMARY AND CONCLUSION

Despite agreements among African governments to significantly increase investments aimed at increasing agricultural productivity, this sector has suffered from significant underinvestment. This is a puzzle.

It was argued in this paper that many states in East and Southeast Asia have significantly invested in agriculture based on a political coalition founded on the interests of farmers and rising entrepreneurs in manufacturing. That allowed for a rapid shift of employment and resources out of agriculture and into labor-intensive manufacturing. Given the relative abundance of labor in this region, the possibility of such a development model actually working was high, and political and social entrepreneurs were able to establish political coalitions to achieve structural change.

However, the situation in much of Sub-Saharan Africa was quite different. Labor was relatively less abundant, and new technologies in manufacturing have become increasingly capital-intensive. In an environment of trade liberalization, making the transition from agriculture to manufacturing has become increasingly difficult. The dynamic interaction between agriculture and manufacturing has weakened considerably. Thus, political and social entrepreneurs seeking to achieve structural change are less likely to survive since the expansion of manufacturing employment is likely to be limited. Actual political support for investments aimed at raising agricultural productivity is also likely to be weak, and underinvestment is likely to occur.

A different model of development is suggested by the experience of Ethiopia. The model of development pursued there involved significant investment in agriculture and infrastructure. Rapid agricultural growth and improvement in infrastructure resulted in income growth, which in turn stimulated the development of traditional types of services and growing productivity in those sectors. Significant investments in agricultural infrastructure linked traditional services to agricultural productivity. The pursuit of this type of strategy would seem to call for a development coalition of farmers and service sector entrepreneurs. This sort of political coalition was not constructed in Ethiopia, implying that the foundations for this strategy were not firmly established. The process by which such a coalition could be constructed is difficult to determine. However, one would expect that as the relative size of the services sector increases, its influence in the process of policy making would create opportunities for political entrepreneurs to construct coalitions incorporating service sector participants. However, traditional sector firms are likely to be smaller, thus making it more difficult to organize them into a coalition.

In addition to the above, it should be pointed out that services themselves are becoming, through technical innovation, increasingly tradable and thus more similar to manufacturing. Thus, the rapid growth of services is likely to provide a platform through which exports can expand. This would indeed require coordination on the part of the state.

The development model suggested in this paper, based on the Ethiopian experience, is, of course, open to many questions. The Ethiopian case study outlined in this paper may be somewhat atypical of other African nations. Ethiopia did not inherit a colonial governance structure as did most of the rest of the region. An established

indigenous state had been established before the imposition of socialist policies. Ethiopia's development has been disrupted by an ethnic-based civil war, which threatens the integrity of the nation-state. Politically based ethnic conflict may return the region to famine and decline (de Waal & Berhe, 2024). State building through the creation of political coalitions trying to form development-oriented states remains a very risky business (Dercon, 2022). However, the alternative process of development and structural change outlined in this paper seems to have been successful in Ethiopia and offers the possibility of forming a different sort of development coalition based upon a different sort of structural change process. Additional research on other potential success stories (Rwanda) might help clarify some of these issues.

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사하라 이남 아프리카의 구조변화 진화 양상

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본 연구는 사하라 이남 아프리카의 구조변화 양상을 동아시아 및 동남아시아의 전통적인 구조변화 과정과 비교하여 분석하였다. 동아시아와 동남아시아에서는 농업에서 노동집약적 제조업으로 노동력이 이동하는 구조변화가 경제성장의 핵심 동력으로 작용하였으나, 이러한 발전 경로는 사하라 이남 아프리카의 경제적·산업적 특성과는 상당한 차이를 보인다. 특히 이 지역은 노동력이 상대적으로 부족하고 제조업의 자본집약화가 심화되면서 농업과 제조업 간의 연계성이 약화되었으며, 제조업 중심의 발전 전략 또한 한계를 보이고 있다. 반면 에티오피아의 최근 사례는 농업과 사회기반서비스에 대한 투자를 바탕으로 전통적인 서비스 부문의 생산성이 향상되고, 이를 통해 새로운 형태의 구조변화가 이루어질 수 있음을 보여준다. 이에 본 연구는 사하라 이남 아프리카의 지속가능한 경제발전을 위해서는 제조업 중심의 발전 전략을 넘어 서비스 부문의 성장과 서비스 기업가의 적극적인 참여를 포함하는 새로운 발전 전략이 필요함을 시사한다.

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