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Creating Jobs for Women & Youth Through Export-Led Growth in Senegal:

An Economic Complexity Approach

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Summary

Senegal benefits from political stability and a favorable geographic location, but economic performance since independence has been disappointing, with resulting pervasive underemployment – especially for women and youth. This policy brief assesses the prospects for boosting employment through export-led growth, making use of the product-space framework. The central concept is to diversify exports into increasingly "complex" products embodying sophisticated capabilities. We depart from the usual product-space approach, however, in arguing that Senegal can foster increasing complexity and employment growth within existing product lines with strong comparative advantage, by improving product quality and cost-competitiveness. To do so will require addressing long-standing weaknesses in the business climate, particularly deficient public services, corruption, and restrictive labor market regulations.

Introduction

Senegal is one of the most stable democracies in Africa, with fair elections, ethnic harmony and religious tolerance. The country is well situated on the coast of West Africa to access markets in Europe and North America. Its limited resource endowment has shielded it from the "resource curse" of economic distortion, corruption and violence associated with mineral rents. While rainfall is erratic, irrigation potential is considerable. Yet economic performance since independence in 1960 has been disappointing. Social indicators such as life expectancy and literacy have improved, but per capita real GDP is barely above the level it was 60 years ago. Poverty remains pervasive, and underemployment in the informal sector is the norm, particularly for women and youth. This brief assesses the prospects for boosting employment through export-led growth, making use of the product-space framework (Hausman & Hildago 2011; Hausman, Hwang & Rodrik 2007).

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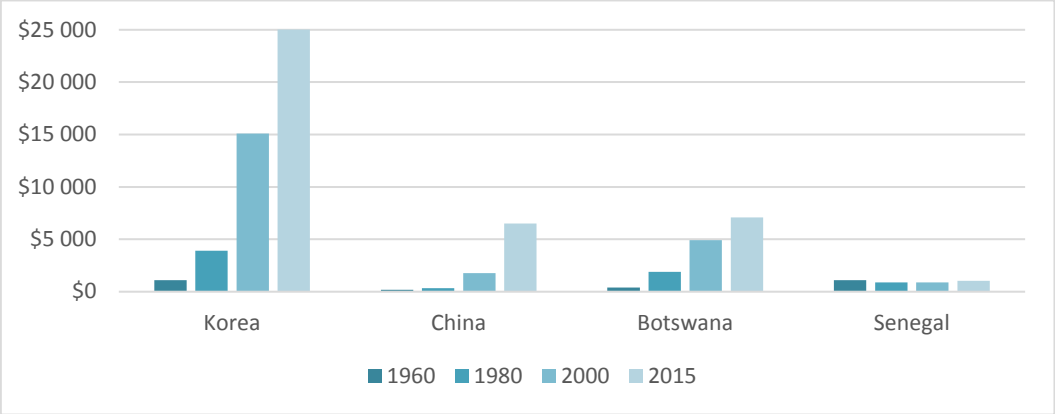
The central concept is to diversify exports into increasingly "complex" products embodying sophisticated capabilities. We depart from the usual product-space approach, however, in arguing that Senegal can foster increasing complexity and employment growth within existing product lines, rather than seek out new products.

Senegal's Weak Economic Performance & Pervasive Underemployment

Figure 1 shows real per capita GDP for Senegal and a selection of other developing countries: Korea, China and Botswana. In 1960, Senegal's per capita GDP was about the same as Korea's, at US$1000 (2010). China and Botswana's per capita GDP were well below that. Fast forward to 2015, and Senegal's per capita GDP is around the same level it was in 1960. Meanwhile, Korea has become a developed country, and other East Asian countries have far surpassed Senegal. In Africa, success stories such as Botswana and Mauritius have also done well, showing that rapid growth is not exclusively an Asian phenomenon.

Figure 1: GDP per capita (constant 2010 US$)



Source: World Bank World Development Indicators

The consequences of this lacklustre growth for employment and well-being have been devastating, especially for youth and women. The vast majority of the labor force is confined to the informal sector, characterized by very low incomes and minimal job security. Less than 10% of the workforce is employed in private and public formal sector jobs with regular salary, health and retirement benefits and other social protections (Golub & Hayat 2015; Benjamin & Mbaye 2012).

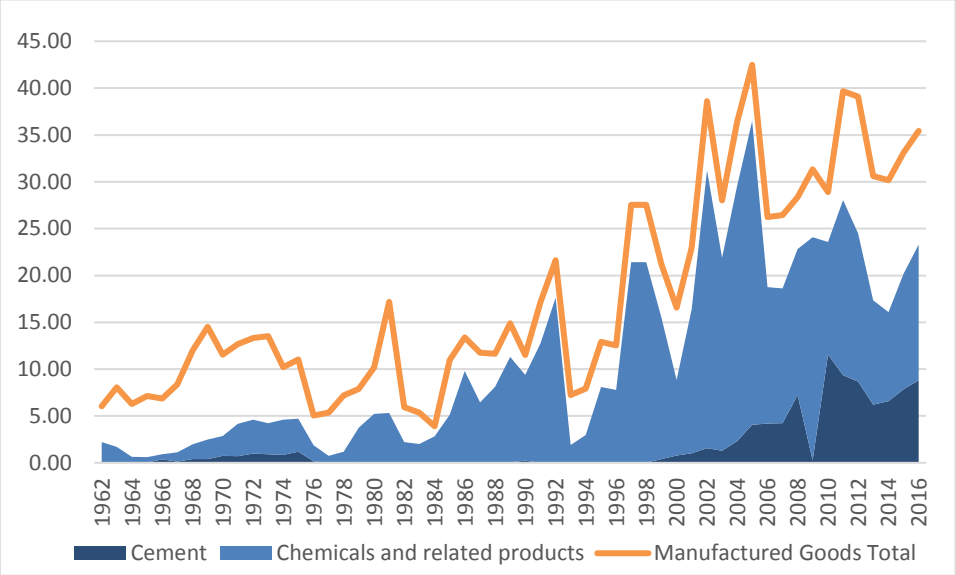
Senegal's Integration in the Global Economy

What explains this dismal economic performance in the face of favorable geographic and political circumstances, and what can be done about it? The historical evidence is clear that rapid growth, structural transformation, and employment creation in the formal sector require integration into the world economy through exports of labor-intensive goods, even if the exact nature of that integration and the policies that foster it may differ somewhat from country to country (Golub, O'Connell & Du 2008).

Senegal's exports have grown much more slowly than global trade, or even African trade. Senegal's share of global exports has dropped precipitously since the early 1960s from about 0.15% to 0.02% in 2018. A further manifestation of Senegal's lack of competitiveness is its ever-widening trade deficit funded by inflows of foreign aid, remittances and official loans.

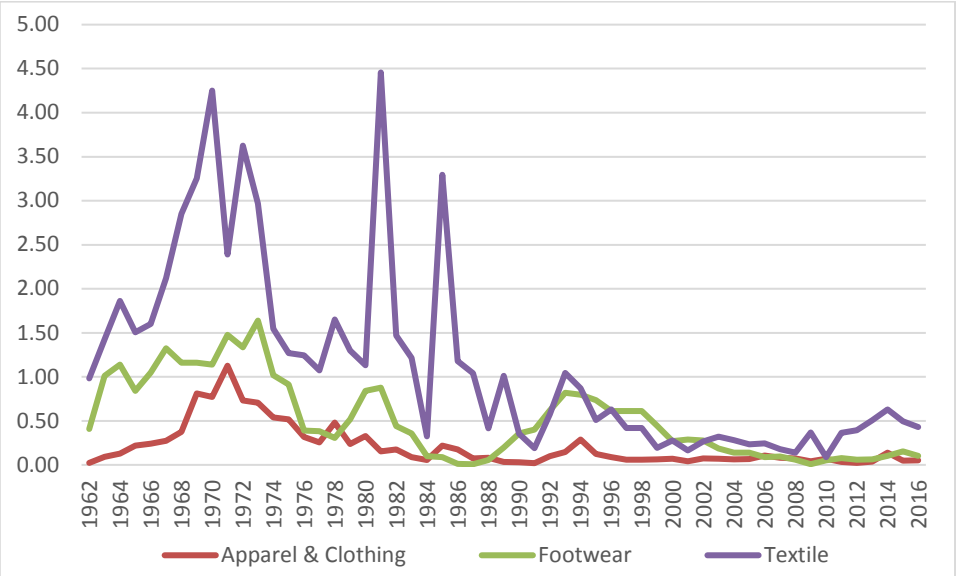
Senegal's manufacturing exports have risen over time as a share of total exports, but the preponderance of manufactured exports consists of capital-intensive chemicals and cement (Figure 2). Exports of labor-intensive manufacturing such as textiles, clothing and shoes have declined sharply over time (Figure 3).

Figure 2. Senegal: Total and Main Manufactures Exports (% of Total Exports)



Source: Author's calculations based on UN Comtrade data

Figure 3. Senegal: Exports of Labor-Intensive Manufactured Exports (% of Total Exports)



Source: Author's calculations based on UN Comtrade data

Methodology

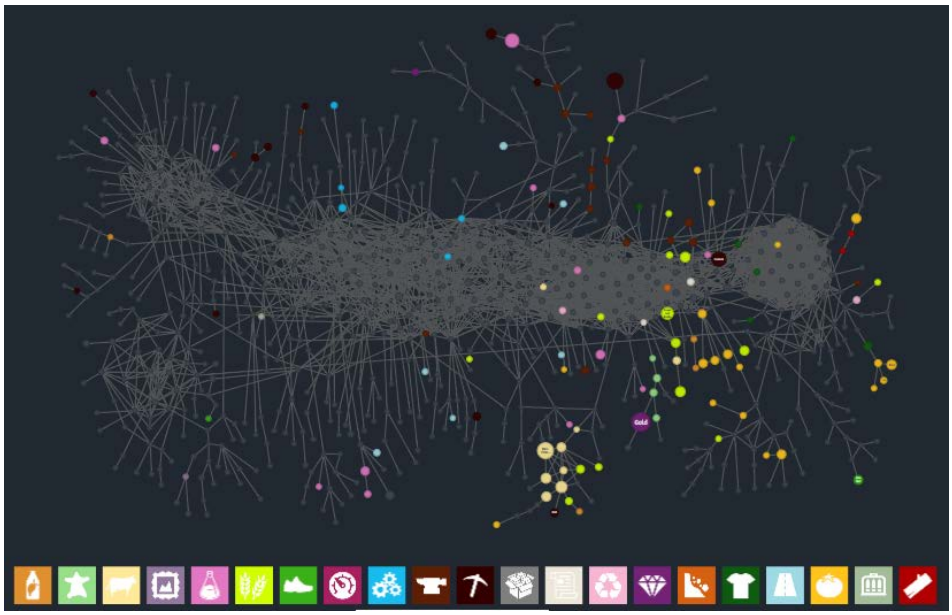
Our objective is to discern promising export diversification opportunities in Senegal with a view to boosting employment, particularly for women and youth. Our starting point is the product space representation of exports (Hausman & Hildago 2011; Hausman, Hwang & Rodrik 2007), centered on the concepts of Revealed Comparative Advantage (RCA) and economic complexity.

RCA measures the extent to which a country disproportionately exports a good relative to world exports. That is, RCA > 1 for Senegal for those products that account for a greater share of Senegal's exports than the share of that product in world exports. Figure 4 shows Senegal's product space, where dots represent industries. The dots where Senegal has RCA > 1 are colored, while others are blank (Figure 4). As for many low-income countries, Senegal's export sectors are marginalized from the densest part of the product space.

The product space locates products that are "close" to a country's existing exports, and thus infer diversification possibilities. For example, if Senegal currently exports product X, its scope for diversifying into product Y can be assessed by the product space measure of proximity between X and Y i.e. the extent to which countries which export X also export Y. The product space analysis also enables computation of the "economic complexity" or implied technological sophistication of exports. The presumption is that countries grow by mastering increasingly complex products. Complexity is measured indirectly by assessing the extent to which a good is produced by high-income countries. Thus, the product space can reveal which products are both "close to" and more "complex" than currently-exported goods.

While the product-space methodology is ingenious and useful as a starting point, we argue that it should be used with caution and supplemented with institutional and historical knowledge, especially for a low-income economy such as Senegal. There are two particularly significant limitations of the product space approach. First, there may be a negative relationship between a product's complexity and its labor-intensity. For this reason, we exclude capital-intensive products such as petroleum refining, cement and chemicals even though they make up a large proportion of current Senegalese exports. Second, RCA can sometimes be misleading if examined in isolation from imports. A country can score a high RCA while simultaneously experiencing a trade deficit in that product. In Africa, countries often re-export imported goods with minimal domestic value addition. The product space approach fails to distinguish between domestically produced goods and re-exports. Refined petroleum is Senegal's largest export by far, constituting 14% of exports in 2015. Yet Senegal imports far more refined petroleum products than it exports, reflecting re-exports to landlocked Sahelian West African countries.

Figure 4. Senegal's Product Space, 2014



Source: MIT Atlas of Economic Complexity

Given the limitations of the product space methodology in this regard, we adopt an eclectic approach to identifying exports with potential for boosting employment and growth, using both the product space and detailed knowledge on the history and current functioning of the Senegalese economy.

Drawing on some earlier implementations of the product-space approach (Chandra & Osorio-Rodarte 2007), we classify exports into three categories: classics, emerging champions, and marginals. Classics are goods that have long been, and continue to be, exported. In the case of Senegal, the most important classics are groundnuts, fish and phosphates/chemicals. Emerging champions are small but rising exports, the most significant of which is horticulture (fruits and vegetables). Marginals are small and declining exports. A notable marginal for Senegal is textiles/clothing. Clothing is a quintessentially labor-intensive export which has been the starting point for industrial development in countries around the world, and in which Senegal has seeming potential – but has floundered.

Findings

Classics: Fishing and Groundnuts

- **Fishing:** Senegal has some of the richest fishing grounds in the world. The fishing industry plays a central socio-economic role in Senegal and generates a large number of jobs in fishing as well as fish processing and distribution, that primarily employs women. The fishing industry, as for much of the economy, has both formal ("industrial") and informal ("artisanal") sectors. The challenges facing the industrial and artisanal sectors have common as well as diverging elements. For example, artisanal and industrial fisheries compete to varying degrees for many species.

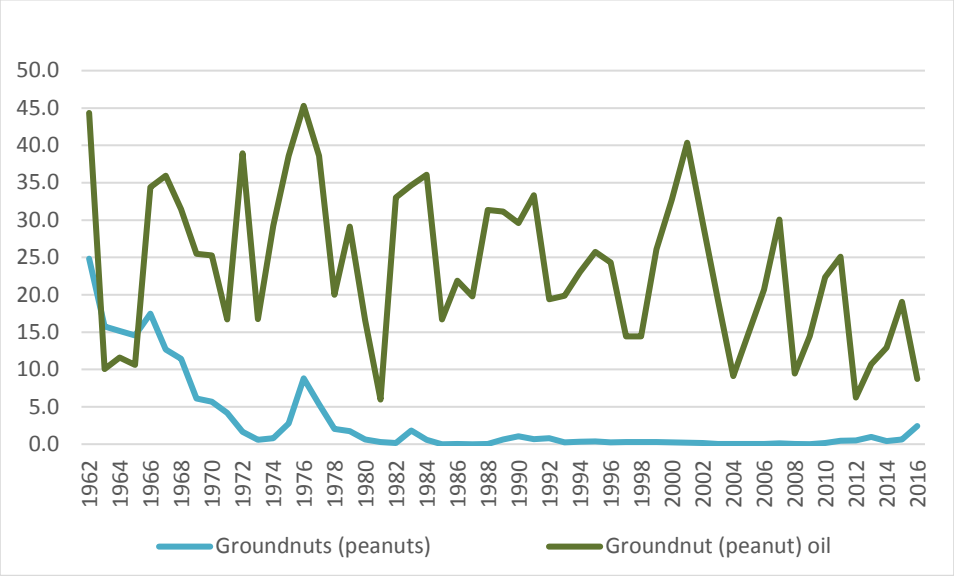
  The fishing industry's natural advantages have been undermined by overfishing, foreign competition, climate change, and dysfunctional local institutions that inhibit the industry's ability to satisfy demanding quality norms in European markets. The government, artisanal and industrial fishing sectors must work together to confront their shared problems: monitoring and regulation of fish stocks, technical assistance, infrastructure, and finance. Infrastructure has improved but severe deficiencies remain at the level of roads, electricity availability, and unloading and processing facilities for artisanal fishing. Weaknesses in social capital, notably the capricious and inefficient judicial system and confrontational labor relations hamper the competitiveness of the industrial fishing sector, as well as other industries. While the government has a clear role in aiding artisanal fishing, it must strive to maintain a level playing field and avoid giving special assistance to well-connected firms.

- **Groundnuts and groundnut oil:** Groundnuts have been Senegal's signature product and dominant export since the colonial era, until recently. In the early years after independence, the groundnut industry was badly mismanaged by the government. Over the last three decades the industry has been substantially liberalized but performance has remained dismal. Figure 5 shows Senegal's very large but highly variable and declining share of the world market of peanut oil. Exports of unprocessed groundnuts have dropped precipitously since 1960.

  The main privatized groundnut oil producer SUNEOR has gone bankrupt after struggling for years, and has been re-nationalized. The underlying problem is that Senegal has a strong comparative advantage in groundnuts but is less competitive in peanut oil. This lack of competitiveness is not necessarily intrinsic as it reflects general weaknesses in the business climate (noted in the case of fishing above). In any case, green (unprocessed) groundnuts can be much more lucrative than peanut oil if they are of high quality and can meet demanding sanitary and phyto-sanitary norms in European markets. Unfortunately, Senegal's green groundnuts have been barred from foreign markets because of contamination with aflatoxin, a cancer-causing mould that grows on peanuts when they are not cultivated, stored, and transported under proper climate-controlled conditions. The aflatoxin challenge is solvable with investments in infrastructure and adaptation of better technologies, however the lack of effective

government support agencies and incentives for farmers has stymied progress. A concerted effort by government, foreign investors and peasant associations is required (Mbaye 2009, Mbaye and Gueye 2014).

Figure 5. Senegal's Share of World Exports of Groundnuts and Groundnut Oil (%)



Source: Authors' calculations from UN Comtrade data

Emerging Champions: Fruits and Vegetables

- Favorable geographical location and climate to grow produce all year underpin Senegal's significant potential to boost fruit and vegetable exports to Europe. But despite gradual progress, exports remain small (English 2016). Opening of the sector to foreign investment has played a salutary role. As for groundnuts and fish, stringent quality norms in Europe are a major challenge. The scarcities of skilled labor, arable land, water, basic infrastructure, credit, extension and other public services, are also serious impediments. Lack of coordination between donors, the government and the private sector is a problem, as are the general weaknesses in the business environment noted above.

Marginals: Textiles and Clothing

- Clothing and textiles have been the stepping stone to industrial development since the industrial revolution, and global value chains have brought developing countries into the process over the last 50 years in a dramatic fashion. Senegal has a number of natural and historical advantages in this industry: a favorable location for export, political stability, a relatively well-developed formal industry inherited from the colonial era, and a tradition of skilled informal tailors. Senegal's formal textile industry was supported by high import barriers, and the industry could not compete in the face of smuggling and the liberalization of the 1980s. Most tellingly, unlike many other developing countries, Senegal has been unable to attract investment and outsourcing from global retailing chains. The root of the problem is the dysfunctional investment climate: deficient infrastructure (particularly electric power outages and poor port functioning), burdensome product and labor market regulations, and the lack of organized training facilities – and thus human capital – make Senegal unattractive to foreign investors in competitive, footloose industries. Senegal's lack of competitiveness also reflects high unit labor costs (Golub et al. 2018). Seemingly generous investment incentives are insufficient to offset the other weaknesses.

  The comparison of export processing zones (EPZs) in Senegal and Mauritius is particularly revealing. Mauritius's EPZ thrived while Senegal's failed to take off despite a number of similarities between the two. The fundamental reason is that in Mauritius, the government had the independence and flexibility

to implement an effective EPZ, whereas in Senegal firms in the EPZ were not effectively insulated from the general deficiencies in the business climate (Madani 1999; Farole 2010; Mosley 2018).

Conclusion

Despite favorable political and geographic circumstances and numerous ambitious reform plans, Senegal's economic performance has been disappointing. Furthermore, what limited growth has occurred is often in capital-intensive sectors. Thus, as in many other Sub-Saharan African countries, lack of employment opportunities, especially for youth and women, is a pressing development problem. About 90% of employment is in the informal sector, in agriculture and increasingly in urban areas in the form of street traders and other petty services with very low incomes, minimal benefits and no security. As a result, poverty remains elevated. It is clear that Senegal needs stronger growth, but also more labor-intensive growth.

Historical experience reveals the importance of growing and diversifying exports in boosting income and employment. We have adopted an eclectic approach combining data from the product space methodology, as well as qualitative analysis of key sectors, to diagnose the constraints impeding export-led growth for Senegal. We have focused on three categories of labor-intensive sectors:

- Classics: goods which Senegal has exported for a long time and which remain important (fishing and groundnuts).
- Emerging champions: newly emerging exports (horticulture).
- Marginals: goods exported at low and declining levels but having significant promise (textiles and clothing).

Despite strong comparative advantage in each of these sectors, and substantial opportunities to upgrade and diversify within them, we find that they all face daunting constraints in the institutional environment that impede productivity; particularly meeting quality standards in discerning developed country markets for both manufactured goods and agriculture. It is pointless to seek to diversify the economy in new industries until the fundamental obstacles to effective integration in global value chains are addressed. The most important of these are lack of investment and maintenance of basic infrastructure, corruption, administrative inefficiencies, and burdensome labor market regulations.

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