SENEGAL

SELECTED ISSUES

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INTERNATIONAL MONETARY FUND

SENEGAL

SELECTED ISSUES

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CONTENTS

FIGURES

TABLE

ENABLING PRIVATE SECTOR-LED GROWTH

This note summarizes growth performance through 2015, explores possible sources of growth and obstacles to unlocking the potential contribution of these sectors, and offers policy recommendations for Senegal to reach high and sustained growth to exit low-income country status.

A.   Introduction

1.   Senegal has experienced a relatively long period of macroeconomic stability, but its per capita GDP growth has been low. In response to the unsatisfactory growth performance, a new development strategy, the *Plan Sénégal Emergent* (PSE), was adopted in early 2014. The PSE is based on three pillars (PSE, 2014): (i) higher and sustainable growth and structural transformation with the ambition to make Senegal a regional hub for a number of activities through better infrastructure and private investment in key sectors (e.g., agriculture, agro-business, mining, tourism); (ii) human development, with a focus on some social sectors and expanding the social safety net; and (iii) better governance, peace and security. The three pillars are expected to be the foundation to put Senegal on a higher, sustained and inclusive growth path to reach upper-middle income country and emerging market status by 2035.

2.   This note aims to provide policy recommendations for Senegal to sustain high and inclusive growth needed to attain upper-middle income and emerging market status by 2035, as envisaged by the PSE. It first summarizes Senegal's growth performance over the past 30 years and compares it to that of fast growing countries in the region and elsewhere. It then explores possible sources of future growth and obstacles to unlocking the potential contribution of these sectors before proposing policy options for Senegal to sustain high and inclusive growth.

B.   Growth Performance Over the Past Thirty Years

3.   Senegal has experienced four growth periods over the past 30 years (Figure 1).[1] Economic performance was poor before the 1994 CFA franc devaluation. Senegal then recorded a period of higher growth in 1995–2007, with per capita growth averaging about 1.7 percent. This average masks yearly variations reflecting volatility in agriculture output, with per capita growth nearing 4 percent in some years and dropping to negative values in others. In response to a series of exogenous shocks starting in 2007 (i.e., food and fuel global prices, global financial and economic crisis, the electricity sector crisis and drought in the Sahel), per capita growth decreased to an average of 0.3 percent in 2008–2013. The recent growth uptick, averaging 2.2 percent in per capita terms, is the highest of the four growth periods and, if sustained, could be a turning point for Senegal.

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[1] Senegal's growth periods are derived by computing 5-year moving averages of the growth rates of real GDP per capita in 2010 US$.

Figure 1. Senegal: Real GDP Per Capita Growth
(Percent, 1987-2015)

Sources: Staff calculations based on IMF and World Bank's data
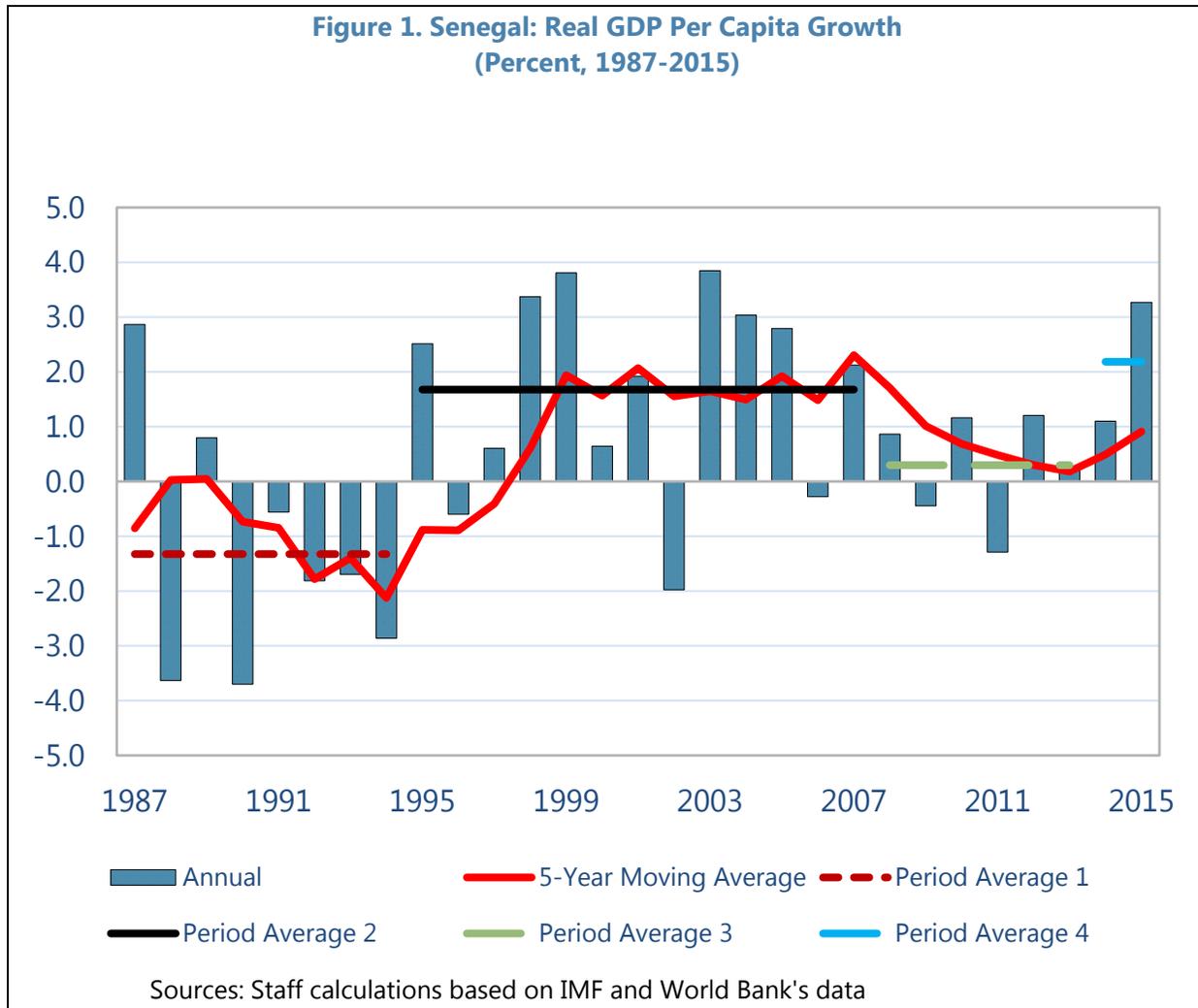
4. **To situate Senegal's growth performance, it is worth contrasting it with that of fastest growing countries (Table 1).** The fastest growing comparators were selected from the following country groups: sub-Saharan Africa (SSA), low income countries (LICs) and lower and middle-income countries (MICs). LICs and MICs were selected based on their 1987 World Bank classification. MICs include both lower and upper-middle income countries. Average real GDP per capita in 2010 US$ over 1987-2015 was used to rank countries, excluding resource-rich ones.

World Bank Classification (GNI per capita - US$)			
	1987	**1995**	**2015**
Low income	<= 480	<= 765	<= 1,025
Lower middle income	481-1,940	766-3,035	1,026-4,035
Upper middle income	1,941-6,000	3,036-9,385	4,036-12,475
High income	> 6,000	> 9,385	> 12,475

Source: World Bank

5. **Senegal's annual per capita growth of only 0.6 percent for the period 1987 to 2015 was significantly lower than that of all the fast-growing countries (Figure 2).** In the high growth episodes, per capita growth averaged 1.8 percent. In the current high growth episode, it has reached the lower bounds of the top 10 in SSA (equaling Tanzania in the 10th position, at

Table 1. Senegal: Average Real GDP Per Capita Growth, 1987-2015						
Rank	**MICs**		**LICs**		**Sub-Saharan Africa**	
1	Cabo Verde	5.2	China	8.7	Cabo Verde	5.2
2	Macao SAR, China	5.0	Bhutan	5.6	Mozambique	4.9
3	Korea, Rep.	5.0	Mozambique	4.9	Mauritius	4.0
4	Thailand	4.3	India	4.7	Mali	3.5
5	Mauritius	4.0	Lao PDR	4.4	Ethiopia	3.3
6	Malaysia	3.9	Sri Lanka	4.1	Uganda	3.2
7	Poland	3.7	Mali	3.5	Seychelles	3.0
8	Dominican Republic	3.4	Ethiopia	3.3	Lesotho	2.9
9	Panama	3.1	Bangladesh	3.3	Rwanda	2.8
10	Seychelles	3.0	Uganda	3.2	Tanzania	2.2
11	Malta	3.0				
Source: Staff calculations based on World Bank's data.						

2.2 percent). This differs from past experience where growth has fallen short of the authorities' target under successive poverty reduction strategies (PRS). If the PSE growth targets were to be achieved and maintained over the next 20 years, this would place Senegal in the same league as the fastest-growing Sub-Saharan African economies such as Cabo Verde, Ethiopia, Mauritius and Mozambique.

6.   At the sectoral level, services have seen a faster increase in activity since the mid-1990s (Table 2). This has been particularly the case in transport and telecommunication, although trade has contributed the most to GDP growth. The primary sector, with agriculture leading the way, registered the highest increase in activity during the recent growth uptick. While the share of the tertiary sector in GDP has increased significantly, the share of the secondary sector has remained relatively constant and that of the primary sector (including agriculture) has decreased. The strong contribution of trade to growth and a relatively high share of trade in GDP in Senegal are indicative of the role public investment has played in growth. Also, Senegal's observed structural shift toward the service sector is different from the pattern of economic transformation observed in countries that have managed to reach upper-middle income status:

- *Malaysia* experienced declines in the share of agriculture in GDP and higher increases in shares of industry prior to the development of services. The development of services in Malaysia was preceded by combinations of import substitution and export oriented development strategies. From independence, development initially focused on heavy industries. With the onset of the East Asian Financial Crisis Malaysia introduced its new export oriented strategy with a cluster-based approach to industrial dynamism allowing greater emphasis on the service sector.[2]

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[2] "Clusters are made up of firms that are linked in some ways and that are geographically proximate. They are geographic concentration of inter-connected companies, specialized suppliers, service providers, firms in related industries, and associated institutions such as universities, standards agencies and trade associations in a particular field that compete and/or cooperate with each other. The fact that these firms and institutions are geographically

(continued)

- *Mauritius* built up its manufacturing sector by rapidly moving from import substitution in the lead up to independence in the 1960's to an export strategy based on export-friendly regulations in export processing zones in the 1970's. Industrial policy channeled tax incentives and subsidies to benefit from trade preferences and promote export sectors. With the end of the Multi-Fibre Agreement and the EU sugar protocol, in 2006 there was shift to promoting globally competitive exports of goods and services.

Figure 2. Senegal: Average Real GDP Per Capital Growth (Percent, 1987-2015)
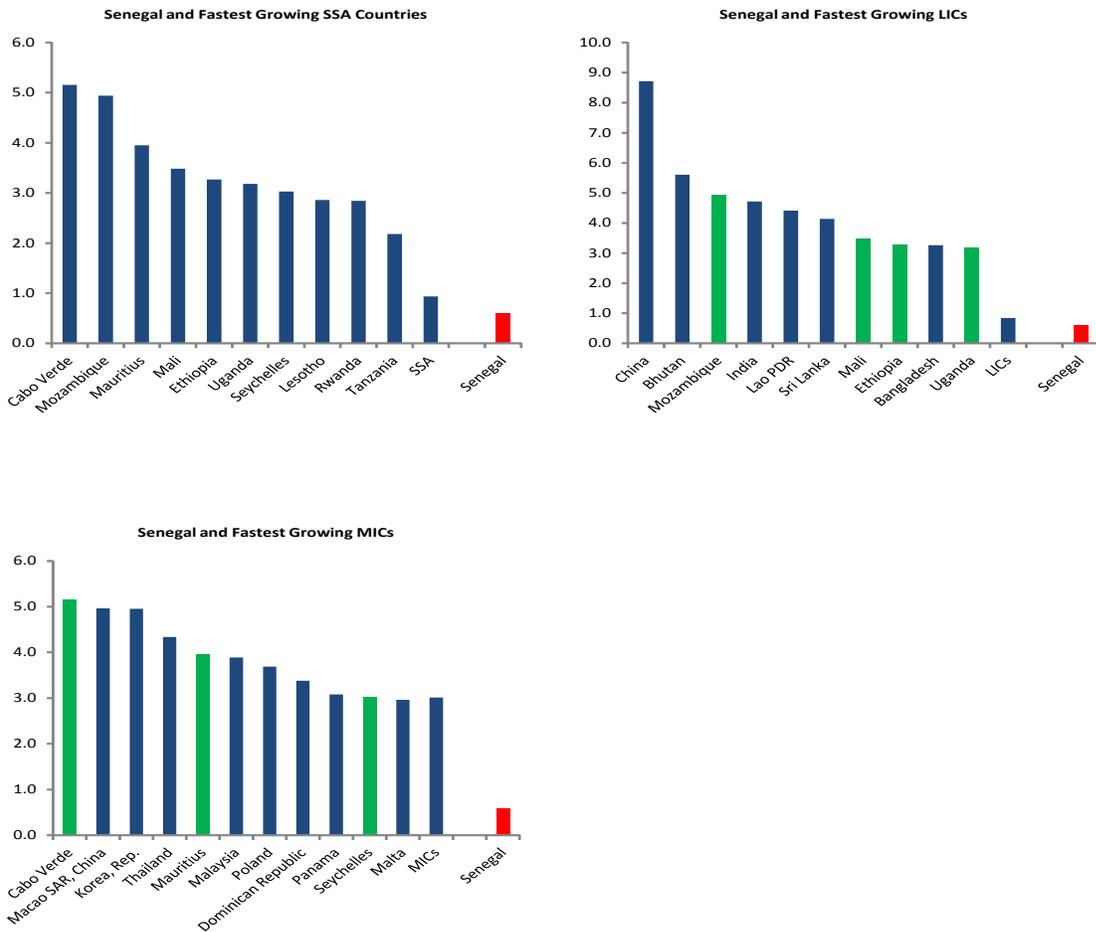
Source: Staff calculations based on IMF and World Bank's data.

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proximate facilitates the movement of ideas and people between them, which ultimately promotes innovative behavior."–Desrochers and Sautet (2004, page 234).

7.   Senegal's service sector is composed mostly of non-tradable in commerce and telecommunication where growth is limited by the small size of the domestic market. Commerce has been a low productivity subsector partly due to the predominance of the informal sector which uses most of the labor force. Although other parts of the service sector have relatively high productivity, the scope for these services to grow is limited. Consequently, reallocation of labor from low productivity agriculture to high value services has been limited and explains in large part the low per capita growth rates of the past 30 years. In the absence of expanding export sectors in manufacturing and services, the main shift has been from agriculture to commerce and the informal sector, both of which have limited growth perspectives and relatively low productivity. For the PSE to succeed, Senegal's structural transformation would need to shift to the pattern observed in countries like Cabo Verde, Korea, Malaysia, Mauritius and Thailand, all of which emphasized the expansion of globally competitive goods and services.

Table 2. Senegal: Sectoral Contribution to GDP, 1991-2015

	Sectors Real Growth Rates 1/				Contribution to Real Growth 1/				Shares of GDP 2/			
	1991-94	1995-07	2008-13	2014-15	1991-94	1995-07	2008-13	2014-15	1991-94	1995-07	2008-13	2014-15
PRIMARY SECTOR	**1.9**	**1.4**	**5.7**	**10.3**	**0.3**	**0.2**	**0.6**	**1.2**	**17.2**	**14.9**	**13.1**	**12.8**
Agriculture	0.6	1.2	9.1	16.7	0.0	0.0	0.4	1.0	9.6	8.0	7.1	7.0
SECONDARY	**2.8**	**4.4**	**3.7**	**6.3**	**0.5**	**0.9**	**0.7**	**1.3**	**20.3**	**21.1**	**20.5**	**21.4**
Mining	0.5	0.8	10.7	3.2	0.0	0.0	0.1	0.0	1.3	1.2	1.1	1.0
Energy, gas and water	6.0	5.8	3.7	8.0	0.1	0.1	0.1	0.2	14.2	13.9	12.3	12.3
Industries	2.2	3.5	3.2	5.1	0.3	0.5	0.4	0.6	4.9	3.7	2.8	3.0
Public works and housing	6.6	9.1	4.3	9.2	0.2	0.3	0.2	0.5	2.5	3.6	4.6	5.3
TERTIARY	**0.7**	**5.5**	**3.7**	**3.9**	**0.3**	**2.5**	**1.8**	**2.0**	**42.7**	**45.1**	**49.5**	**49.6**
Trade	1.2	4.0	3.1	4.7	0.3	2.5	1.8	2.0	17.5	17.3	16.1	16.2
Transport & Telecom	-2.0	10.4	5.6	3.5	0.2	0.7	0.5	0.8	6.4	8.4	13.7	14.0
PUBLIC SERVICES	**0.7**	**4.1**	**1.0**	**5.2**	**0.4**	**0.8**	**0.2**	**0.9**	**19.7**	**18.9**	**16.9**	**16.2**
GDP	**1.3**	**4.4**	**3.4**	**5.4**	**1.3**	**4.4**	**3.4**	**5.4**	**82.5**	**91.0**	**99.5**	**100.0**
Non-Agricultural GDP	**1.4**	**4.7**	**3.2**	**4.7**	**1.3**	**4.3**	**2.9**	**4.4**	**90.4**	**92.0**	**92.9**	**93.0**

Source: IMF Staff estimates based on Authorities' data
1/ Percentage change
2/ Percent

8.   Growth in Senegal has been driven mainly by public investment and remittances-fueled private consumption (Table 3). Remittances grew by an average of more than 20 percent per year between 1995 and 2007 and have become a major source of financing for the economy.[3] Public investment also grew substantially, particularly during the 1995-2007 growth period, averaging 12 percent while private investment only registered 6 percent average growth.

9.   The performance of investment and exports in Senegal relative to the fastest growing countries could in part shed light on why Senegal has had low per capita GDP growth for 30 years. For comparison purposes, growth episodes are identified in the aforementioned fastest growing countries over 1987-2015. A growth episode is defined as a period of growth in real GDP per capita of 3.5 percent or more for 5 or more consecutive years. The following text table lists the growth episodes by country. Five-year averages before and after the starts of episodes are compared with averages during the episodes to assess the role played by certain variables on growth (Table 4).

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[3] The jury is still out on the impact of remittances on growth but Giuliano and Ruiz-Arranz (2008) show that remittances can boost growth in countries with less developed financial systems by providing alternative options to finance investment and by helping overcome liquidity constraints. This latter finding is corroborated by Bettin and others (2015).

Table 3. Senegal: Consumption, Investment and National Saving, 1991-2015

	Annual Growth Rates 1/				Share of GDP 2/			
	1991-94	1995-07	2008-13	2014-15	1991-94	1995-07	2008-13	2014-15
Consumption	**0.9**	**4.2**	**3.0**	**5.0**	**97.5**	**91.5**	**93.6**	**93.8**
Private	1.4	4.3	3.1	5.1	81.2	78.1	78.7	77.3
Public	-1.6	3.6	2.5	4.2	16.3	13.3	14.8	16.5
Investment	**1.9**	**7.0**	**5.8**	**6.9**	**19.1**	**22.6**	**24.3**	**25.7**
Private	4.2	6.1	7.0	6.2	15.2	17.3	18.0	18.9
Public	-6.2	12.4	2.8	9.5	4.0	5.3	6.3	6.8
National savings 3/	**...**	**8.7**	**7.1**	**15.8**	**...**	**16.3**	**15.2**	**17.4**
Remittances 3/	...	22.6	7.2	4.8	2.4	5.6	13.5	14.2

1/ Annual percentage change
2/ In percent
3/ Nominal growth rates
Source: Staff calculations based on authorities' data.

Table 4. Senegal: Growth Episodes in Fastest Growing Countries, 1994-2011

Growth Episodes	Start	End	Duration (Years)	Average Real Per Capita Growth
Cabo Verde	1994	2011	18	6.9
Dominican Republic	1996	2002	7	4.3
Malaysia	1990	1997	8	6.4
Mauritius	1987	2001	15	4.3
Seychelles	1988	1993	6	5.5
Sri Lanka	1993	2000	8	4.6
Tanzania	2004	2008	5	3.8
Uganda	1995	1999	5	4.5

Source: Staff calculations based on World Ban's data.

10.   **Increases in private investment and FDI tend to precede or coincide with episodes of high growth in high growth countries, while the opposite occurs in Senegal (Figure 3).** Average FDI as a share of GDP was higher in Senegal (0.6 percent of GDP) than in Mauritius (0.4 percent of GDP) and Cabo Verde (0.3 percent of GDP) 5 years before the beginning of the respective countries' growth episodes. What is particular to Senegal is that average FDI as a share of GDP was higher, 2.5 percent 5 years after the growth episodes versus 1.9 percent during the growth episode, implying that FDI is being pulled by growth in Senegal rather than FDI leading to growth, as is the case in countries like Cabo Verde, Malaysia, Mauritius and Sri Lanka.[4] A similar pattern can be observed regarding private investment as share of GDP, which increased significantly in the Dominican Republic (18.8 to 23.8 percent), Mauritius (from 12.1 to 17.1 percent) and Sri Lanka (from 17.2 to 21.5 percent) during their growth periods. In contrast, private investment increased by more following the 1995-2007 growth period in Senegal (from 14.9 percent before the growth episode, to

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[4] Average FDI as share of GDP was 0.2, 3.2, 0.2, and 0.3 percentage points lower five years after the growth episodes in Cabo Verde, Malaysia, Mauritius and Sri Lanka, respectively.

17.3 during the growth episode, and 17.7 5 years after the growth episode). Significantly higher exports as shares of GDP during and after the growth periods is observed in the fastest growing countries where increases in private investment and FDI preceded or coincided with growth periods. This could be a reflection of the countries' respective successful policies of attracting productive private investment and FDI to spur higher and sustained per capita growth via exports. In contrast, the FDI may have been induced to support domestic demand resulting from the growth spurt.

11. **Growth has been factor-intensive (Figure 4).** A growth accounting exercise suggests that growth is mostly explained by factor accumulation.[5] Total factor productivity (TFP) was low before the mid-1990s, and again during 2008-2013. It only grew modestly during the decade of relatively robust growth (1995–2007) and the recent growth uptick. A number of factors could explain this

**Figure 3. Senegal: Before, During and After Growth Episodes
(Percent of GDP)**

Source: Staff calculations based on IMF and World Bank's data.

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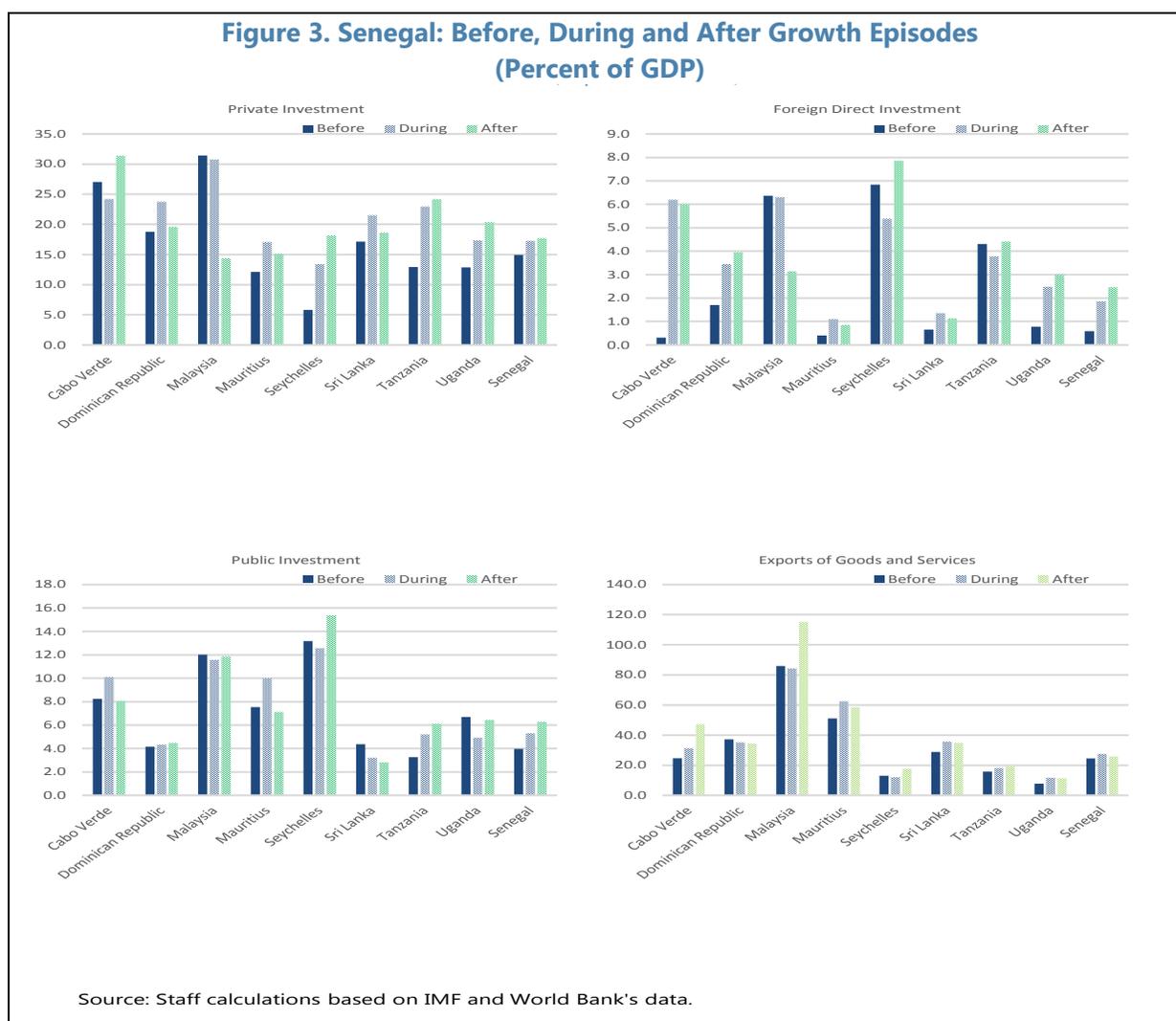
[5] The growth accounting exercise uses a standard Cobb-Douglas production function, with an elasticity of output with respect to capital of 0.3, and an annual depreciation rate of the capital stock of 5 percent. The economically active population (from the World Bank database) is used as a proxy for labor input.

(continued)

poor productivity performance.[6] First, the TFP decline during 2008-2013 coincides with the deterioration of Senegal's doing business and governance indicators, which could have affected the productivity of both public and private investment. Second, large and increasing remittances may have supported GDP via private consumption, but not sustained growth, as they might have been invested in sectors less likely to increase long-term growth (such as housing and commerce, as evidenced by the significant contribution of commerce to growth).

Figure 4. Senegal: Growth Accounting, 1991-2015

Overall GDP

TFP Capital Labor —— Real GDP Growth

Primary Sector

TFP Capital Labor —— Real GDP Growth

Industry

TFP Capital Labor —— Real GDP Growth

Services

TFP Capital Labor —— Real GDP Growth

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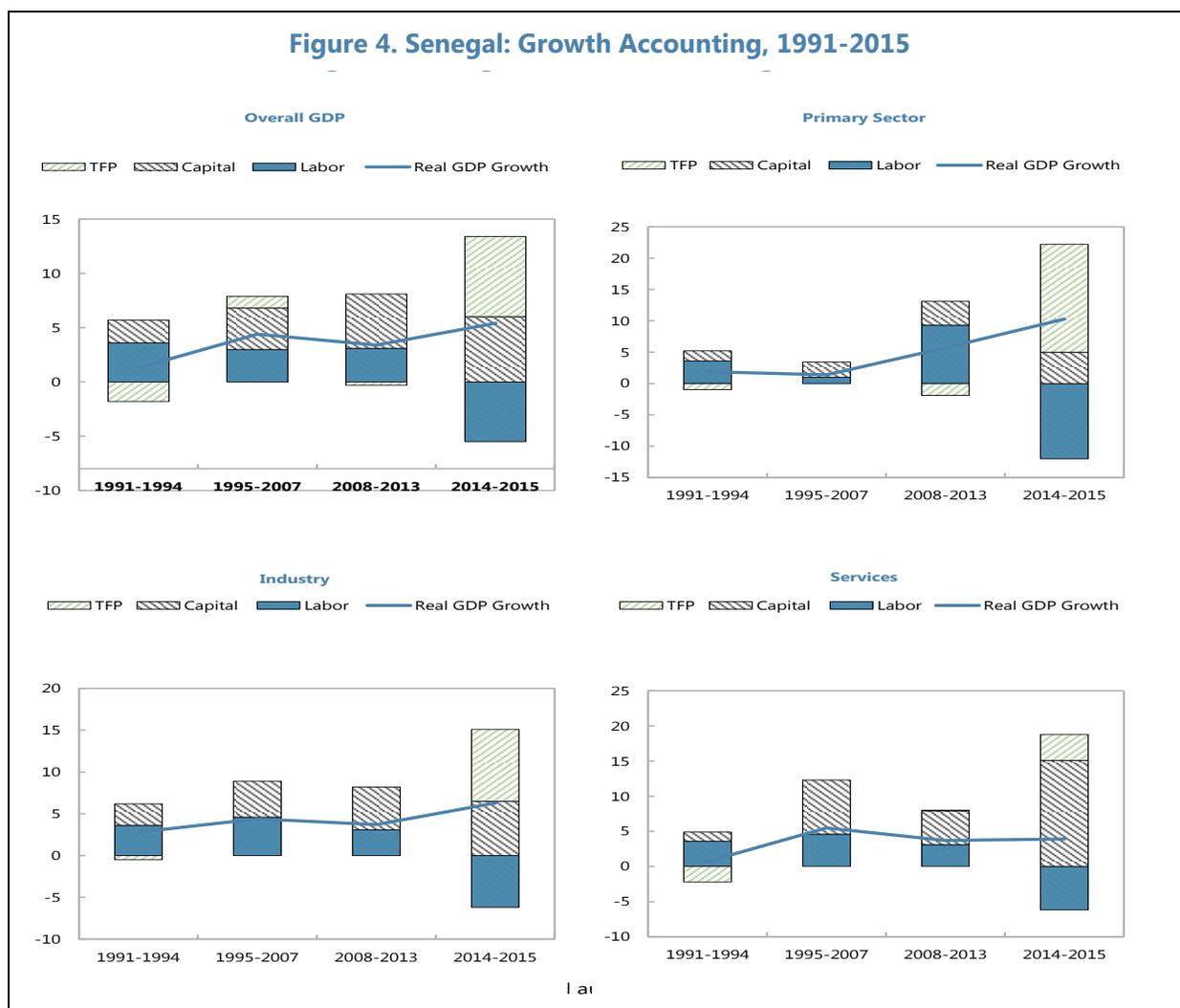
[6] Eichengreen and others (2011) found that 85 percent of the slowdown in the rate of output growth can be explained by a slowdown in total factor productivity growth (TFP), much more than any slowdown in physical capital accumulation. Productivity growth can be affected by several factors, including, but not limited, to individual decisions to acquire skills, access to different types of public infrastructure, and a higher share of workers with advanced education engaged in innovation activities.

12.   Compared to fast growing countries, Senegal's TFP performance has been low since
1987.[7] TFP growth over the past 30 years averaged less
than 1 percent in Senegal while TFP in Rwanda and
Mozambique grew by more than 4 percent on average.
Mauritius, India and Sri Lanka averaged more than
1 percent while Poland and China averaged more than
2 percent. This partly explains the higher per capita
growth enjoyed by these countries relative to Senegal.

Average TFP Growth (1995-2007, in percent) Senegal compared to fastest growing countries
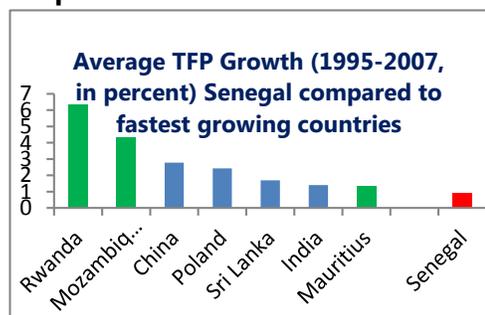
C.   Growth Outlook and Challenges

**13.   Over the medium term, growth could largely be driven by a projected strong rebound
in productivity provided reforms to open economic space are put in place (Table 5).** In
addition to existing drivers of growth, mostly in the service sector (IT, financial services), five new
sectors are expected to drive growth over the medium to long term if reforms to open economic
space are put in place. These include agriculture and agribusiness, manufacturing for export, mining,
tourism and housing. As PSE reforms are fully implemented over the medium term, an improved
business climate combined with sector-specific reforms would lead to higher productivity growth
that will improve economic efficiency and lead to per capita growth rates never seen in Senegal, but
typical of the fastest growing countries. Real GDP (per capita) growth is projected at 7 percent
(4 percent), driven by improvements in TFP.[8] Industry is projected to have the highest increase in
economic activity (driven by strong improvement in TFP) followed by the primary and service
sectors. A significant increase in total investment (307.3 percent of GDP), particularly private
investment and FDI (19.9 and 3 percent of GDP, respectively), is projected to support growth over
2016-21. Domestic private investment and FDI were 17.2 and 2.3 percent of GDP, respectively, in
2015.

14.   As described in the PSE, constraints to growth abound in Senegal. The low per capita
growth experienced by Senegal over the past 30 years is partly explained by (i) low productivity,
driven by a relatively poor business climate and weak governance and by inadequate human capital;
(ii) inadequate infrastructure and difficult access to the factors of production; (iii) agriculture's
vulnerability to weather; and problems with access to land and financing. More importantly, the
extended period of low growth is also due to delays in the implementation of reforms (caused by

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[7] Note that the TFP data used in this paragraph is different from the one underlying Senegal's growth accounting
exercise. The growth accounting exercise uses real GDP in CFAF (base year =1999). The TFP data used for comparison
comes from the Penn World Table version 9.0 and is at constant national prices with 2011 as base year. The fastest
growing countries are selected based on data availability.

[8] To reach upper-middle income status in 20 years, Senegal would need to quadruple its current $1000 US$ per
capita. To achieve this goal, a 7 percent average annual growth combined with no more than 3 percent in population
growth would be needed. It should be noted that in the World Bank's income classification, the lower bound for
upper-middle income countries has increased by about 30 percent between 1995 and 2015, which means that
Senegal's current $1000 GNI per capita may need to reach about US$ 5320 in 2035 to reach upper-middle income
status, implying that growth rates higher than 7 percent may be required.

SENEGAL

resistance from vested interests), notably in the energy sector and the business environment, and the inefficiency of public spending.

Table 5. Senegal's Growth Accounting, 2016-21		
	2016-2021 IMF	**2016-2021 Authorities**
Real GDP per capita Growth	3.9	4
Overall GDP		
Real GDP Growth	6.9	7.0
Labor	0.7	0.7
Capital	6.9	6.7
TFP	4.5	4.8
Primary		
Real GDP Growth	6.9	7.2
Labor	1.7	1.7
Capital	6.7	6.7
TFP	3.8	4.0
Industry		
Real GDP Growth	9.8	9.6
Labor	0.8	0.8
Capital	8.1	7.7
TFP	6.8	6.7
Services		
Real GDP Growth	6.1	7.1
Labor	0.8	0.8
Capital	7.4	7.6
TFP	3.3	4.2
Source: Staff estimates based on Authorities and World Bank's data		

15.   Unlocking agriculture productivity and enhancing the ability of the economy to create productive employment opportunities is one of the keys to achieving higher, sustained and inclusive growth. Despite its limited contribution to GDP, agriculture has significant potential as a driver of enhanced livelihoods in Senegal. However, growth in the agricultural sector has been slow and volatile over the years, subject to climatic shocks linked to changing rain patterns. Unlocking agriculture growth will require implementing and accelerating ongoing reforms in the groundnut, rice and horticulture sectors, while continuing to develop irrigation and enhance the quality of seeds. A climate favorable to the production of fresh fruits and vegetables throughout the year and the relative proximity to the European market put Senegal in a very good position. Land reform is also critically needed to raise productivity and attract private investment. In the absence of long-term property rights (whether ownership or long-term leases), there is no incentive to pay for investments in land improvement, irrigation and inputs nor is there the collateral to support financing for such investment. In contrast, property rights in agriculture could underpin the

transformation of agriculture along the lines of the green revolution in Asia and similar developments in Europe and the Americas. If successful, this process is likely to improve the livelihoods of the large share of the population still living in rural areas. However, productivity increases in agriculture will also generate additional pressures for jobs in new sectors, particularly in established and emerging urban centers. Jobs will be required for the growing urban population which will continue to be fueled by rural migration. Currently, opportunities in urban centers are insufficient and most the population is pushed into low productivity informal jobs in commerce. Productive job creation will likely come from the emergence of diversified service and industrial sectors, to be built on the foundation of enhanced competitiveness.

16.   **Senegal's industry has suffered from lackluster performance over the years.** The PSE highlighted the challenges facing the industry sector. These include the fragility of the industrial base due to its high level of fragmentation, relatively small units of production, and a limited number of large participants, as well as chronic under-capitalization; high cost of factors of production, particularly energy; unskilled labor (due to very high wages in the formal sector by international standards); under-utilization of production capacity; narrowness of the domestic market and export competitiveness problems; shortage and cost of skilled labor; slowness of reforms regarding the business environment; access to and cost of financing; strong concentration in Dakar; and limited diversification of production. Despite these constraints, the industry sector has growth opportunities linked to the country's strategic position and stability and its membership in community organizations (West African Economic and Monetary Union—WAEMU, and the Economic Community of West African States - ECOWAS), as well as access to the US market through AGOA and the EU via the Economic Partnership Agreements.

17.   **The tourism subsector is an important potential source of growth.** However, on average, it has only been about 1 percent of GDP since 1990. Performance in the subsector is highly contingent on the quality of domestic supply, growth in target countries, and heightened international competition. Challenges facing tourism in Senegal include, but are not limited to: undiversified and insufficiently competitive supply, poor service quality, a lack of qualified labor, and a failure to promote Senegal as a destination. Resort areas such as Saly and Cap-Skirring need rehabilitation and upgrading. The PSE points to significant tourism potential yet to be developed and promoted, including Point Sarene, Joal, Grand Cote, and Pays Bassari. Despite the constraints, Senegal has significant potential for developing business and cultural tourism in view of its natural wealth, its rich culture and its location. An added opportunity arises if Senegal can market itself as a stable democracy that is safe in a region increasingly affected by turmoil. However, the system for allocating prime tourist land for development needs to be overhauled to focus on competitive international bidding to attract the best world class operators, rather than favoring those who are best connected. Moreover, potential deals need to ensure that the commercial risks are fully passed on to the operators who receive land for development with the Government obtaining a lump sum payment from the highest bidder.

Figure 5. Senegal: Tourism in Senegal and Comparators

Source: Staff calculations based on World Bank's data.
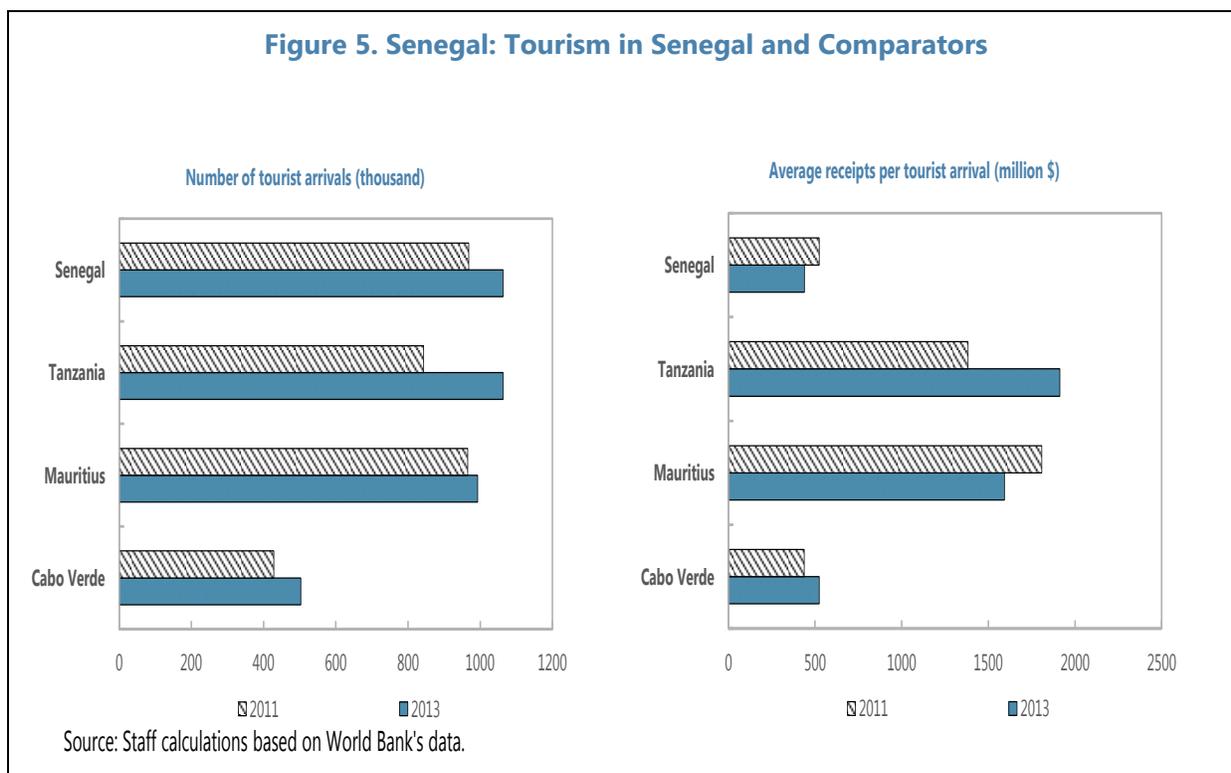
18.   One of the biggest constraints to higher, sustained and inclusive growth in Senegal is its business climate[9]. In recent years, Senegal has made starting a business easier by reducing the minimum capital requirement and making obtaining construction permits less time-consuming by reducing the time for processing of building permits. Senegal has also improved its credit information system by establishing a credit bureau. Moreover, the government strengthened minority investor protections by introducing greater requirements for disclosure of related-party transactions to the board of directors. Finally, it made paying taxes easier for companies by abolishing the vehicle tax and making it possible to download the declaration forms for value added tax online. These improvements should help attract private investment and FDI, but Senegal started from a low base and is still far behind many SSA and middle-income countries, requiring continued reform to create a business environment that can catapult the economy to a higher, sustained and inclusive growth.[10] High costs of energy, and problems with reliability of supply, are widely seen as the most binding constraints to improving the competitiveness of the Senegalese economy.

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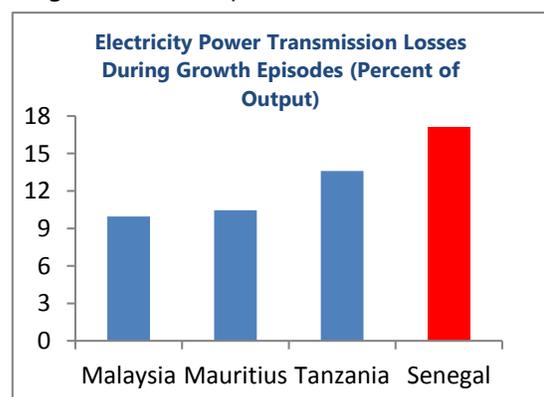
[9] For more details, see the Selected Issues Paper entitled "Export Diversification and Competitiveness in Senegal."

[10] Senegal's rank improved to 153rd in 2016. Mali's rank is 143rd while that of Mauritius, Seychelles, and Malaysia is 32nd, 95th and 18th, respectively.

Box 1. Reforms Required to Achieve PSE Growth Targets

Senegal's PSE seeks to promote sustained strong growth through economic reforms designed to boost private investment in key strategic sectors. Sustained strong growth is feasible, but will require a determined implementation of the PSE and a break with the status quo. Partial implementation of the targeted reform package could result in a low impact on growth, as a critical mass of reforms is required to unlock the growth rates targeted by the PSE. The following (non-exhaustive) key reforms could add as much as 3–4 percentage points to Senegal's growth potential, and about 150,000 jobs annually, setting the country on the path to high, sustained and inclusive growth:

- Foster macroeconomic stability for higher levels of private investment.
- Create budget space for required public investment in human capital and public infrastructure.
- Improving PFM to promote the effectiveness of public investment.
- Promote reforms to the tax system designed to make it simple and easy to comply with to encourage informal SMEs to join the formal sector and support overall investment and job creation.
- Accelerating the restructuring of SENELEC to increase the level of electricity supply and reduce the costs of production.
- Reform the peanut sector in accordance with the development objectives of the PSE and PRACAS (Accelerated Program for Agriculture in Senegal).
- Change the rules for the Special Economic Zones (SEZs) to emphasize good economic governance.
- Continue to improve human capital.
- Pass a comprehensive land reform, based on best practices, but adapted to the realities of the country.
- Reform the labor market to protect workers instead of jobs by making it easy to rotate labor for economic reasons whilst supporting job search and training and an unemployment benefit system.
- Create an investment regime that is based on rules and that emphasizes ex-post verification over ex ante approval so that FDI and SMEs can flourish.
- Finalize the implementation of the tourism sector's reforms.

D. Conclusion and Policy Recommendations

19.   For Senegal to reach PSE objectives, reforms under the PSE need to transform the economy and create space for SMEs and FDI to thrive. Steadfast actions in the following areas will be critical if Senegal is to turn the recent growth uptick into a high, sustained and inclusive growth and become an upper-middle income emerging market economy by 2035:

- **Continue to improve the business climate.** Reform of Senegal's business environment should be accelerated if the country is to achieve upper-middle income and emerging economy status. Macro-structural reforms should be stepped up in the energy sector where Senegal still ranks 170th in the world (compared to Mali at 151st, Mauritius at 41st and Malaysia at 13th). Progress in the electricity sector can be achieved by continuing to improve reliability of supply and reduce electricity costs. Reforms of the taxation system, including by simplifying procedures and optimizing the tax rates, is another macro-critical area where Senegal needs to make significant strides. Improving the judicial system, including through better investor protection and registering property, could help boost credit to SMEs and private investment in support of sustained high growth.

- **Reform the peanut sector in accordance with the development objectives of the PSE and PRACAS (Accelerated Program for Agriculture in Senegal),** by rebuilding a competitive oil milling sector through the introduction of increased competition, structuring and regulation of small land holders, bringing small-scale oil manufacturing units up to standard, and implementation of seed legislation to promote the creation of small processing companies and curb exports of unprocessed seeds. The potential actions to achieve these outcomes are outlined in the following World Bank study: "*Etude diagnostique de la chaîne de valeurs arachide*

au Sénégal: Proposition de réformes". In addition, further measures to mobilize resources for irrigation and mechanization would help boost agriculture productivity.

- **Change the rules for the Special Economic Zones (SEZs) to emphasize good economic governance.** While it important to undertake comprehensive reforms to improve Senegal's overall business environment, it is unlikely that the recent rate of improvement will be sufficient to achieve high, private-sector led growth in the near term. A SEZ can help attract domestic and private investment. However, Senegal's experience has shown that businesses have not responded to previously-offered 50-year tax holidays, suggesting that FDI and SMEs are looking for a supportive regulatory framework, rather than tax exemptions. Partly as a result of the peer learning facilitated by the Fund, the authorities are working with the Government of Mauritius to set up a Zone of Good Economic Governance. This zone should aim to have one of the best business climates in the world, as well as a tax regime that has limited rules based tax exemptions applicable to all and is easy to comply with. This approach is more likely to unlock FDI and create space for SMEs than the current regime. For the new approach to work, however, the economic governance of these zones needs to be protected from rent-seeking that has kept FDI that is not seeking favors and SMEs from taking hold. One option would be for the zone to be given the power for its own economic regulation, a provision available in the legislation. Moreover, the rules could be made by investors and workers in the zone together with Government representatives.

- **Continue to improve human capital.** Endogenous growth theory suggests a strong linkage between human capital investment and growth (Romer, 1990). Human capital includes education, health, training and other investments that enhance an individual's productivity and few economists would argue against the view that investments in health, knowledge and skills of people are as important as investments in physical infrastructure. Better human capital attracts FDI and multinational enterprises. Cleeve and others (2015) show a robustly positive and significant effect of human capital on FDI inflows. Recently, FDI has been concentrated in relatively skill-intensive production and services and less toward primary and resource-based manufacturing (Cleeve and others, 2015).[11] If Senegal is to attract higher value-added FDI and multinational enterprises in its quest for higher, sustained and inclusive growth, its human capital needs to be upgraded beyond basic skills required for FDI inflows. At the early stages of their development, countries like Malaysia adopted policies aimed at upgrading their human capital beyond the basic skills required to attract FDI.

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[11] Asiedu (2006) showed that countries that are endowed with natural resources or have large markets will attract more FDI. However, the same study showed that **an educated labor force**, good infrastructure, macroeconomic stability, openness to FDI, an efficient legal system, political stability and less corruption also promote FDI.

- **Improve labor market efficiency.** In addition to productivity and capital, employment is one of the supply-side drivers of sustained growth.[12] Well-functioning labor markets are essential to sustained growth. Indeed, labor market efficiency could lead to employment growth through greater flexibility in wage setting and in hiring and firing policies, while maintaining adequate worker protection. Senegal could benefit from labor market reforms as a relatively rigid labor market has resulted in high wages. Prudent public employment and wage policies could reduce skill mismatch in the labor market and further enhance potential for growth. A good starting point would be to update labor laws and the rules for recording contracts and managing disputes, consistent with the 1998 evaluation of the code which focused on changes necessary for Senegal to achieve emerging country status.

- **Introduce a comprehensive land reform.** A study based on land reform in India showed that land reform has a positive and significant impact on income growth and accumulation of human and physical capital (Deininger and others, 2007). In Senegal, land reform is critically needed to raise productivity and attract private investment. Passing a comprehensive land reform, based on best practices, but adapted to the realities of the country, in order to establish property rights, is essential for the development of the agriculture sector and could help boost credit to SMEs and private investment in support of sustained high growth.

- **Finalize the implementation of reforms in the tourism sector**, in particular, by: (i) diversifying the supply of services through developing and exploiting tourist potential, (ii) improving the quality of services and the workforce, (iii) improving the marketing of Senegal as a top tourist destination, (iv) developing micro tourism, and (v) improving connectivity with target markets.

- **Raise external competitiveness to boost exports by improving logistics performance and strengthening infrastructure[13].**

20.   The above, if continuously underpinned by coherent strategies and long-term planning frameworks, could help establish robust institutions. This will require government structures that are transparent and accountable, which in turn will depend on leadership commitment to reaching the PSE objectives.

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[12] Barro (1997) and Barro and Sala-i-Martin (2004) provide comprehensive literature reviews.

[13] For more details, see the Selected Issues Paper entitled "Export Diversification and Competitiveness in Senegal."

References

Asiedu, Elizabeth. 2006. Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size, Government Policy, Institutions and Political Instability, The World Economy, 29/1: 63-77

Barro R. (1997), Determinants of Economic Growth: A Cross-Country Empirical Study (Cambridge, Massachusetts: MIT Press).

Barro, R., and X. Sala-i-Martin (2004), Economic Growth (Cambridge, Massachusetts: MIT Press).

Berendsen, Bernard, Ton Dietz, Henk Schulte Nordholt, and Roel van der Veen. 2013. *Asian Tigers, African Lions: Comparing the Development Performance of Southeast Asia and Africa.* Boston: Leiden.

Bettin, Giulia, Andrea F. Presbitero, and Nikola L. Spatafora. 2015. Remittances and Vulnerability in Developing Countries, The World Bank Economic Review, pp 1-29

Cleeve, Emmanuel A., Yaw Debrah, and Zelealem Yiheyis. 2015. Human Capital and FDI Inflow: An Assessment of the African CAse, *World Development*, 74: 1-14.

Deininger, Klaus, Songqing Jin, and Hari K. Nagarajan. 2007. Land Reforms, Poverty Reduction, and Economic Growth: Evidence from India, *World Bank Policy Research Working Paper,* No. 4448

Eichengreen, Barry, Donghyun Park, and Kwanho Shin. 2011. When Fast Economies Slow Down: International Evidence and Implications for China, *NBER Working Paper 6210* (Cambridge, Mass.,: National Bureau of Economic Research.)

Giuliano, Paolo and Marta Ruiz-Arranz. 2009. Remittances, Financial Development, and Growth, Journal of Economic Development, 90/1: 144-152

Commission on Growth and Development (2008), The Growth Report: Strategies for Sustained Growth and Inclusive Development.

World Bank (2016), Doing Business Report.

EXPORT DIVERSIFICATION AND COMPETITIVENESS IN SENEGAL

This work investigates export diversification, quality upgrading, and competitiveness in Senegal, comparing its performance with those of fast growing countries in the region and with other countries with similar (or slightly higher) levels of income per capita, but with a more diversified export structure (e.g. Tanzania, Cote d'Ivoire and Vietnam). The analysis shows that Senegal is a relatively diversified economy, both in terms of export products (manufacturing and services) and partners—even though a significant part of exports is concentrated in the region—but with room for quality upgrading, especially in agriculture. Moreover, much of the apparent diversification may be linked to serving captive markets in the region, particularly Mali and, thus overstate the degree of true competitiveness. Polices to strengthen the business environment—especially in tax administration, electricity supply and logistics— could improve external competitiveness and boost export performance.

A. Introduction: Export Diversification and Growth in Developing Countries

1.   Diversification and structural transformation are key drivers of macroeconomic performance in developing countries. Export diversification has been conducive to faster economic growth and associated with lower output volatility and greater macroeconomic stability (Johnson et al. 2010; IMF 2014). Thus, the growth and stability payoffs to diversification underscore the case for designing policies aimed at promoting diversification and structural transformation. This is especially true in the current challenging and uncertain global environment, characterized by low commodity prices, future normalization of monetary policy in the U.S. and China' growth rebalancing. Moreover, the cornerstone of the *Plan Sénégal Emergent* (PSE) strategy is to turn Senegal into an emerging market economy and a regional hub for export to world markets.

2.   Raising income per capita at an early stage of development typically goes hand in hand with a transformation of a country's production and export structure. Labor flows from low- to high-productivity sectors is a key driver of development and, since 2000, structural change contributed positively to Africa's overall productivity growth (McMillan et al. 2014).[1] These changes often include diversification into new products and trading partners, as well as increases in the quality of existing products. Such diversification also offers opportunities to move labor from the low productivity informal sector to higher productivity activities that are globally competitive. The path from low-income country (LIC) to middle and upper income have historically been associated with diversification and expansion from heavy dependency on a narrow range of traditional primary products and on a small number of export markets. It is encouraging for global development that over the past two decades an increasing number of LICs have begun to diversify their export products, albeit with significant variation in the extent of diversification both across LICs and within regions (IMF 2014, 2015b). In particular, the WAEMU region has experienced limited structural change, since the sectoral

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[1] See McMillan and Headey (2014) and works cited therein for an overview of structural transformation, with a focus on Africa.

composition of output has broadly remained unchanged since the 1990s and export and output diversification has been low and stagnant (Hooley and Neviak 2016). There is still ample scope to upgrade the quality of LICs' existing export basket and/or introduce new higher value-added products, not only in manufacturing, but also in agriculture – often the least productive sector in LICs (Henn and others 2013), as is the case in Senegal.

3.   **Within this context, given that the PSE has set ambitious goals for economic growth and development which prioritize diversification of production and exports it is useful to review the achievements and remaining challenges Senegal faces in diversifying its export base**. Moreover, progress towards the PSE objectives would also serve to mitigate vulnerability to internal and external shocks. To meet the PSE targets, the government would need to implement a number of policies and institutional changes to boost the productivity of the public and private sectors and unlock the growth potential of private enterprises.[2] Ambitious programs to support improvement in agricultural productivity and reforms to sustain private sector-led growth and to create space for SMEs and FDI will be key to the process of export diversification and quality upgrading. More generally, policies aimed at encouraging exports by helping domestic firms overcome barriers to enter foreign markets (i.e. investing in education and training, promoting access to patents, investing in trade infrastructures and providing low cost access to market intelligence) could foster firms' productivity growth thanks to a learning-by-exporting mechanism (Fatou and Choi 2015).

B. Senegal's Export Structure

4.   **Exports of goods and services in Senegal amount to more than 26 percent of GDP and have experienced stronger growth recently.** The current account deficit is projected at 6.5 percent of GDP in 2016—down from 7.6 percent in 2015. This continues the downward trend started in 2013. Export volumes have grown by 10 percent, on average, over the period 2011-2015, a significant improvement compared to the first decade of the 2000s, during which exports volumes were flat and all the increase in the value of exports was due to prices, and a strong performance in the region, where export performance has been concentrated in non-oil commodity exporters and driven by robust external demand and high prices (IMF 2015b).

5.   **Senegal's exports increased USD 2.8 billion in 2014, driven by food products, some manufactured goods (mostly cement), chemicals and gold (**Figure 1, top panel). According to the World Bank' WITS data, the top 5 product exports for Senegal in 2014 were petroleum oils (USD 446 million, excluding crude oil), gold (USD 345 million), frozen fish (USD 185 million), cement (USD 167 million), and soups and broths and preparations (USD 118 million). Overall, Senegal exports 1,727 products (out of the approximately 5,300 products listed in the Harmonized System – HS), a significant increase from the 1,284 products exported in 2000. This is more than some fast growing countries like Mali (902 products in 2012) and Ethiopia (1,654 products), but still less than Cote d'Ivoire (2,079 products), and the more diversified Tanzania (2,362 products), Mauritius (2,478 products) Vietnam (3,501 products) and Malaysia (4,119 products). In terms of destination countries, 47 percent

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[2] Some of these elements were already discussed in the *Rapport national sur la competitivite du Senegal* (Ministère de l'Economie et des Finances du Senegal 2011).

of exports in 2014 went to Sub-Saharan African (SSA) countries (Mali is the main partner receiving 16 percent of total exports), 27 percent to Europe and Central Asia (Switzerland accounts for 10 percent of total exports), and 7.4 percent to the Middle East and North Africa. North America and Latin America together receive less than 2 percent of Senegal's exports (Figure 1, bottom panel).

Figure 1. Senegal's Exports in 2014

Exports are dominated by food products, gold, and some manufacturing goods (mostly cement) and chemicals.

Large part of exports go to Africa (mostly neighbor countries) and Europe.
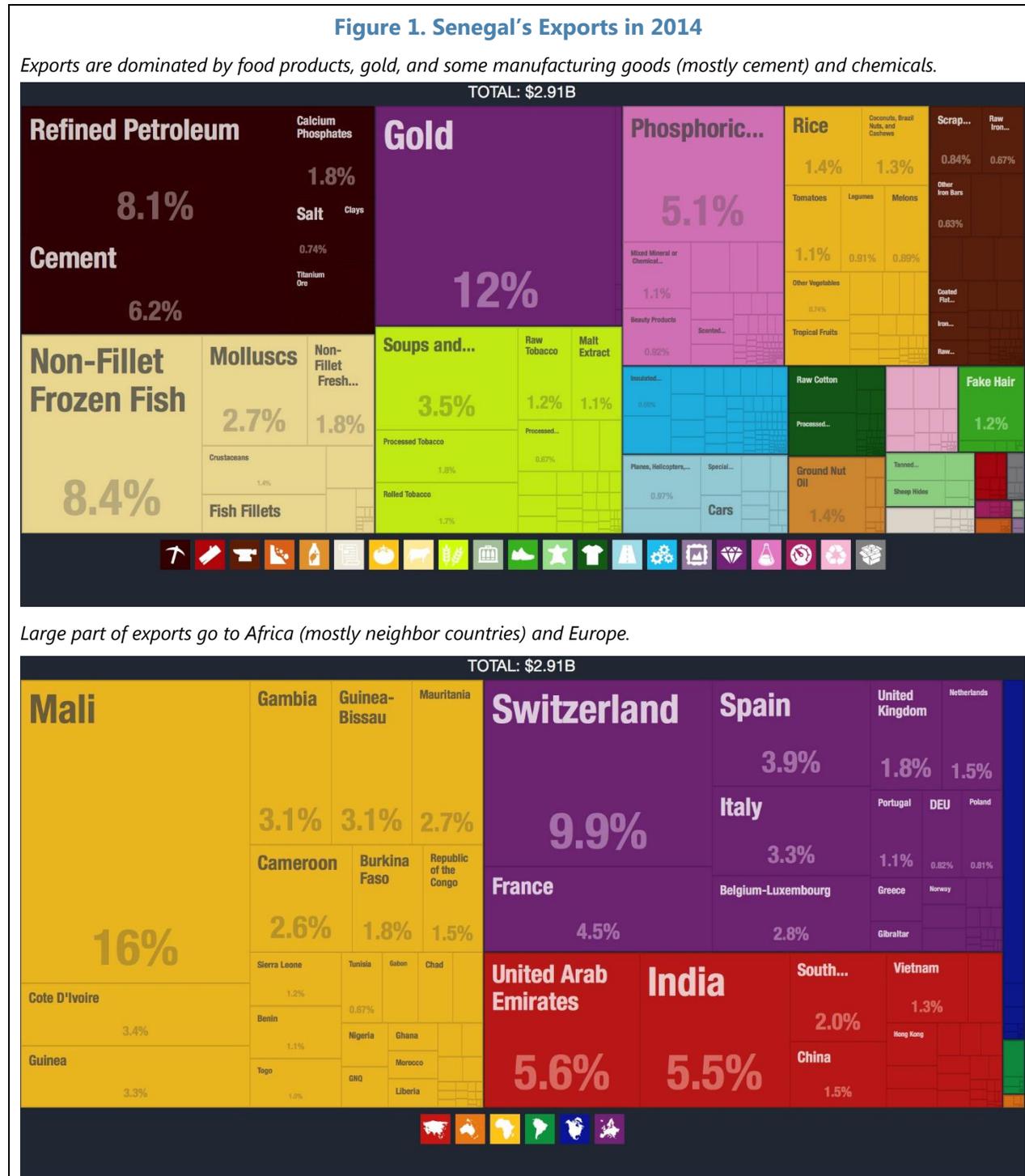
6.   Exporters account for less than 15 percent of firms in Senegal and they are predominantly concentrated among large and foreign-owned firms. According to the data collected by the World Bank Enterprise Survey, 14.8 percent of Senegalese firms export directly or indirectly part of their production, a share which is 5 percentage point higher than the sample of fast growing SSA economies[3], but lower than in some benchmark countries, like Tanzania (14.3 percent) Vietnam (17.3 percent) and Malaysia (18.5 percent), and the world average (19 percent). Moreover, if Senegal is to be a hub, as envisaged by the PSE, it would need to have a share significantly above the world average. In terms of the perception of the obstacles to export activities, Senegal firms seem to be better off than their SSA counterparts: 13 percent of firms in Senegal identify customs and trade regulations as a major constraint to their activity, while this share increases to an average of 23 percent in SSA; clearing exports through customs takes on average 7 days in Senegal and an average of 10 in SSA.

7.   Recent years have seen a change in export products in Senegal, more oriented towards food and cement products, and less concentrated on animal products. Consumer and intermediate goods together accounted for almost ¾ of total exports in 2014, raw materials 21 percent of exports, while capital goods represented only 5 percent. This structure is not too different than in previous years, apart from the sharp decline of the share of raw materials since 2000. This represents a slight reversal in the trend since 2010, possibly because of the increase in commodity prices during that period. The share of capital goods increased slightly throughout the period, but it is still low (Figure 2). At a more disaggregated level, recent years have seen some changes in the composition of export products, with an increase of cement, minerals (the production of zircon started in 2014) and food products, and a decrease of animal products. Also, there is a minor increase in the export share of products in textile and clothing, transportation, footwear and machinery and electricity, which would suggest a diversification away from agriculture toward manufacturing. In relative terms, the share of manufacturing exports is aligned with the world average and higher than in SSA (Senegal is second only to Mauritius) and some other comparator countries (i.e. Vietnam), even though it shows a slight decline over time, consistent with what observed in the whole region (Figure 3 and IMF 2015b for a broad discussion of manufactured exports).

8.   The export performance of Senegal has been relatively decoupled from the world and SSA; since 2014, export growth has been stronger than the world and the SSA averages. Comparing Senegal's export growth with the world average shows that the performance of Senegal is much different from the growth of global trade: Senegal's exports did not decline as much as elsewhere during the global trade collapse, with a boom in 2011, a relative slowdown in 2012-2013, and a recent growth rate above the world average. By contrast, SSA as a whole has behaved more in line with the world average, with SSA export growth since 2012 below the world average, underscoring Senegal's strong recent performance relative to the region (Figure 4). Inter alia, this could reflect the positive impact on demand from relatively secure markets in the region that benefitted from falling oil prices.

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[3] The list of fast growing SSA countries is defined based on per capita real GDP growth over 1990-2015, and it excludes from the rankings resource rich countries. The group includes Cabo Verde, Ethiopia, Lesotho, Mauritius, Mali, Mozambique, Rwanda, Swaziland, Seychelles, and Uganda.

Figure 2. Senegal: Structure of Exports in Senegal

Recent years have seen a change in exports, more oriented towards food and stone and glass (i.e. cement) products.

Senegal's Exports, by Product
Share in Total Exports in 2000 - 2010 - 2014

Source: WITS

... with the same structure was in place in 2010...

Senegal's Exports, by Type of Goods
2010

Source: WITS

Intermediate goods and raw materials accounted for the largest share of Senegal's exports in 2014....

Senegal Exports, by Type of Goods
2014

Source: WITS

.... and in 2000, even though, since then, the share of consumer goods declined while exports in capital goods slowly increased.

Senegal's Exports, by Type of Goods
2000

Source: WITS

9.   The decomposition of the export performance indicates that its main driver over the last decade has been Senegal's competitiveness. In particular, the largest changes in export market share—which increased especially in 2009 and 2011, but then partially contracted in 2013—is not due to Senegal's product mix or its trading partners, but to its performance, measured as a residual after controlling for changes associated with the mix of products exported, sectoral specialization, and the distribution of trading partners.[4] In addition, most of the changes in push factors are in volumes,

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[4] The Export Competitiveness Database encompasses quarterly information on year-on-year export growth from 2006q1 to 2013q1 for 228 countries. It is based on monthly and quarterly bilateral trade data available for 5,300 products of the Harmonized System (HS at 6-digit level). The database contains a set of five indicators with information on export performance, measured as a relative change between period *t-1* and period *t*. In particular, it contains indices of export growth, export market share change, changes in geographical and sectoral specialization (composition effects) and the export performance, i.e. changes in export market share growth once sectoral and geographical composition effects have been removed. See Gaulier et al. (2013) for a broader discussion of the export performance decomposition ad for stylized facts across regions.

rather than prices. On the other hand, in SSA countries, composition effects (especially the product mix and sectoral specialization) emerge as the key factors explaining relative export performance and the most recent results show a sharp decline in export performance in SSA, which is instead absent in Senegal. Overall, these figures confirm that Senegal—not being a commodity exporter—is less dependent than the region on external demand by trade partners. The comparison with export-oriented countries like Vietnam, however, highlights the presence of existing gaps, since Vietnam's exports growth has been almost constantly above the world average, led by a strong competitiveness, rather than by a favorable composition mix in terms of products and trade partners. These patterns might also reflect Senegal's dependence on captive regional markets whilst Vietnam is globally competitive.

Figure 3. Senegal: Manufacturing Share of Gross Exports Relative to the World, Average 2008-12
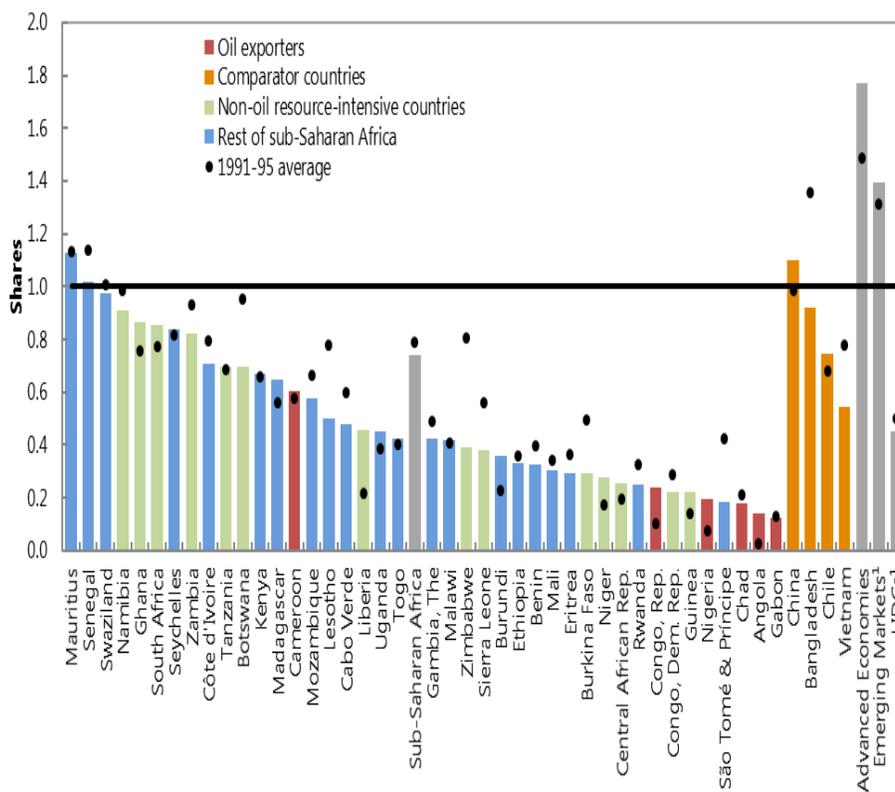
Source: IMF staff calculations based on data from IMF, Eora database.
Note: A value of 0.5 indicates that, for the country in question, the share of manufacturing in gross exports is only 50 percent of that share at the global level.
[1] Excluding sub-Saharan African countries. LIDCs= Low-income developing countries.

Source: The World Bank (Measuring Export Competitiveness.

Figure 4. Senegal: Export Growth in Senegal, Compared to the World, SSA and Vietnam

Export growth in Senegal is decoupled from world average and has been faster since 2014….
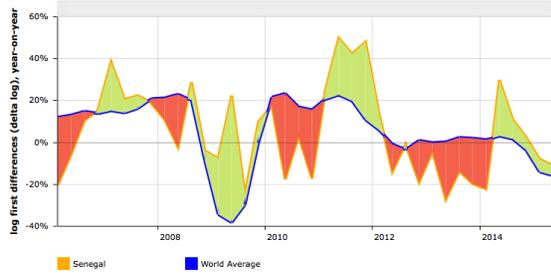
And Senegal's relative performance has been mostly driven by its performance rather than composition effects
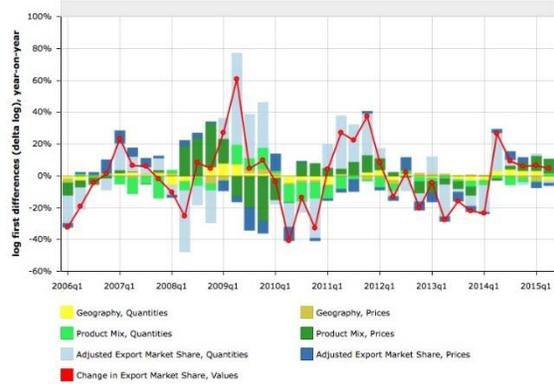
While SSA export performance is much closer to the global average and has been slower since 2014 …
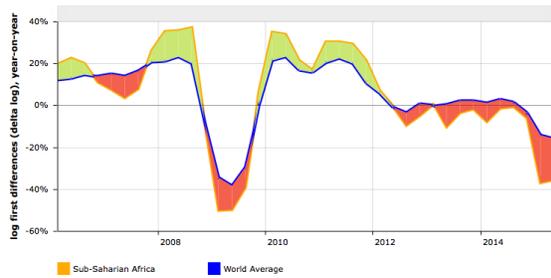
... with the product mix a key factor
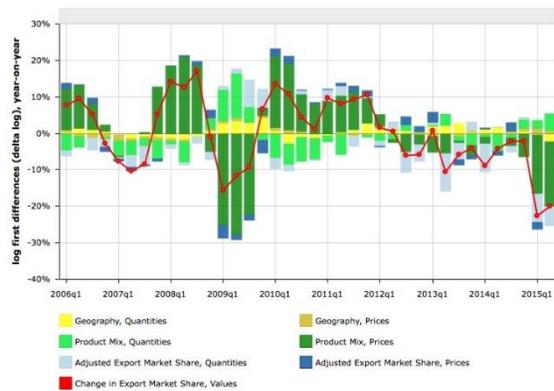
Vietnam's exports, instead, have consistently performed better than the world average …
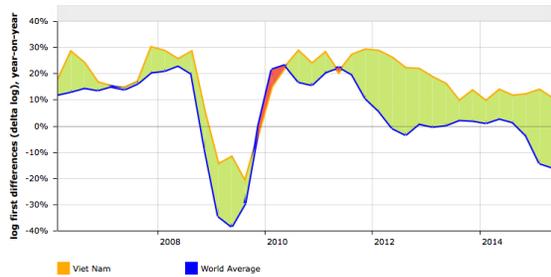
... driven by a strong performance of push factors, especially in volumes.
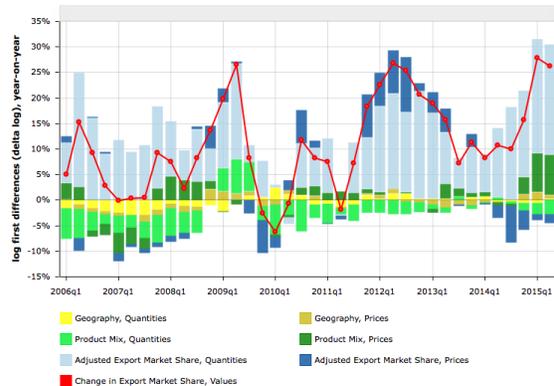
C. Export Diversification and Complexity

10.   Export diversification has increased: Senegal is doing better than regional peers and on par with Vietnam. As suggested from the preliminary discussion of the export structure (Figure 2), export products diversification has steadily increased since the 1970s and the gap between Senegal and WAEMU and SSA—including the group of fast growing countries—widened over time (Figure 5, Box 1 for the definition of export diversification measures). The increasing product diversification has been mainly driven by changes at the intensive margin (higher volumes), rather than at the extensive margin (i.e. number of products). A recent analysis shows that Senegal has opportunities to further diversify its exports in fresh and processed food, and raw and processed agro-products (International Trade Centre 2016b).

11.   Senegal has also been able to diversify across trade partners, a trend which has been common across SSA and the WAEMU, even though in recent years the process halted (or reversed) in the region, but continued its positive trend in Senegal. However, for Senegal, higher diversification is mostly the outcome of the increasing number of trading partners, rather than changes at the intensive margin. Finally, given the rising importance of trade in services, it is interesting to note that also along this dimension, Senegal is more diversified than other representative SSA countries—including some of the fast growing countries like Ethiopia—as well as Vietnam.

12.   A similar picture emerges looking at the economic complexity index (ECI), since Senegal has a relatively complex product space, suggesting a potential for future growth. Another metric to assess the diversification and the level of development of a country's export structure is the ECI, which measures how diversified and complex a country's export basket is (Hausmann and others 2014). Product complexity depends on the amount of capabilities or know-how necessary in production.[5] A country is considered *complex* if it exports not only highly complex products, but also a large number of different products. There is a strong relationship between economic complexity, the variation of income per capita across countries, and the likelihood that a country will experience fast economic growth in the near future, as gains in economic complexity have historically translated into higher incomes (Hausmann and others 2014). In 2014 Senegal ranked 76th (out of 124 countries) in the economic complexity ranking, a strong improvement compared to 2013 (+11), and it is the first among SSA countries (Cote d'Ivoire, the only other WAEMU country covered by the Atlas of Economic Complexity, is ranked 98th). Senegal exports 162 products with revealed comparative advantage, meaning that its share of global exports is larger than what would be expected from the size of its export economy and from the size of a product's global market**.**

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[5] Products such as chemicals and machinery are said to be highly complex, because they require a sophisticated level of productive knowledge and typically emerge from large organizations where a number of highly skilled individuals interact. Whereas products, such as raw materials or simple agricultural products, require only a basic level of know-how and can be produced by an individual or family-run business.

Figure 5. Senegal: Export Diversification

Export product diversification has increased over time, mainly at the intensive margin....

Senegal: Export Product Diversification
(Theil Index Decomposition; Lower Values = More Diversification)
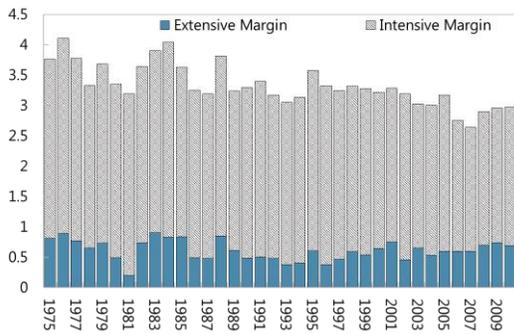
IMF Diversification Toolkit

... and Senegal is becoming increasingly more diversified than fast growing SSA countries, and in line with Vietnam.

Export Product Diversification
(Theil Index; Lower Values = More Diversification)
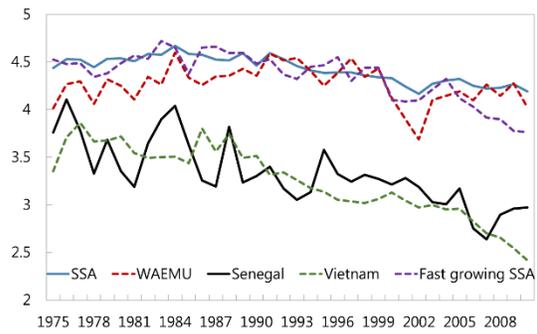
IMF diversification toolkit

Export partner diversification has also increased, mostly at the extensive margin ...

Senegal: Export Partner Diversification
(Theil Index Decomposition; Lower Values = More Diversification)
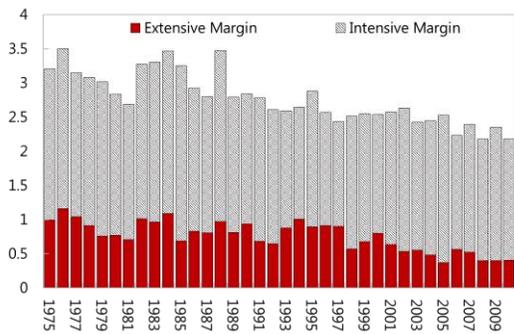
IMF Diversification Toolkit

... and again Senegal in recent years is becoming more diversified than the region, and in line with Vietnam.

Export Partner Diversification
(Theil Index; Lower Values = More Diversification)
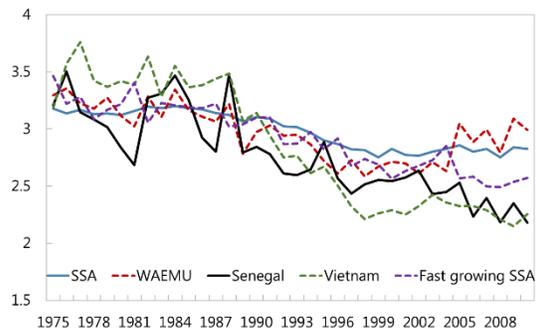
IMF Diversification Toolkit

Service exports are more diversified in Senegal than in other SSA countries and in Vietnam.

Exports Service Diversification
(Herfindhal Index; Higher Values = Less Diversification)
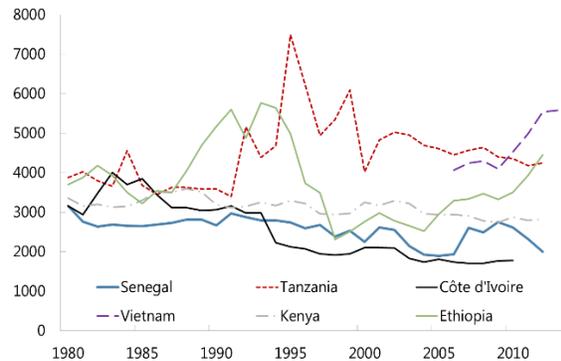
Box 1. Export Diversification and Quality

Export diversification is measured by the Theil index, as in Cadot et al. (2011), with a lower value of the index corresponding to more diversification. The diversification index is available for product and for partners and it can be decomposed into two components. The "between" component of the Theil index captures the extensive margin of diversification (i.e. the number of products/partners), while the "within" component measures the intensive margin (i.e. product shares).

The Theil index of export product diversification measures the extent of diversification across product categories. Consequently, it does not cover **quality upgrading**, which describes the average quality within any product category. More specifically, **export quality** is measured by the export's unit value adjusted for differences in production costs, relative distance to the trade partner, and the development of a country. **Quality ladders** reflect the extent of heterogeneity in quality across different varieties of a given product. The length of a quality ladder indicates the potential for quality upgrading for each product.

See IMF (2014) and Henn and others (2013) for more details on the methodology.

Source: IMF 2014 and Henn and others (2013).

D. Export Quality

13.   Export quality in Senegal has been stagnant (or decreasing) for most of the 1980s and 1990s and it only started to increase slowly since 2000. In addition to export diversification across products and partners, the quality of exports is a key factor in analyzing the external competitiveness of a country. Structural transformation can happen through diversification into new sectors, shifting resources to highly productive firms, but also improving the quality of goods produced. The evolution of the export quality index for all products (Box 1 for the definition of export quality and quality ladders) shows that Senegal still lags behind the average WAEMU and SSA country, let alone the group of fast growing economies. Moreover, the recent increase started in 2000 has only partially filled the gap with the fast growing SSA countries and it has been slower than the one experienced in Vietnam, which has been converging relatively fast to the Asian frontier and whose exports are of increasingly high quality (Figure 6 and Henn and others, 2013).

14.   The limited integration in the global value chain (GVC) is likely to adversely affect export performance. Rising integration has been associated with rising income and more inclusive growth. However, SSA shows a relatively low and stagnant level of integration—foreign value added accounts for only 15 percent of exports—and African exports tend to enter at the very beginning of the GVC, reflecting the predominant role of commodities in the export structure (African Development Bank 2014; IMF 2016). Within this regional framework, the performance of Senegal, notwithstanding some progress in recent years, is below the average (Figure 7) and reflects the fact that many products are exported without any transformation (for instance, peanuts) and that a significant share is to captive regional markets for products where Senegal may not be globally competitive.

15.   There is room for quality upgrading, especially in agriculture and food products. The disaggregation of the quality index across (1-digit) sectors shows a very differentiated picture: the quality of food and live animal products—which represent the largest share of Senegal's exports—has the lowest quality and there has not been any significant quality upgrading over the past 30 years. The

quality ladders show that there is broad scope for quality upgrading, as illustrated, for instance, by the comparison with Cote d'Ivoire, which has an export structure even more concentrated in agriculture, but also a higher quality index (Figure 6). In this context, Senegal has recently implemented policies

Figure 6. Senegal: Export Quality and Quality Ladders

Export quality has been slightly increasing, but is still lower than in competitor countries and in fast growing SSA countries, especially in sectors with large export shares

Export Quality
(Quality Index; 90th percentile = 1; Higher Values = Higher Quality)
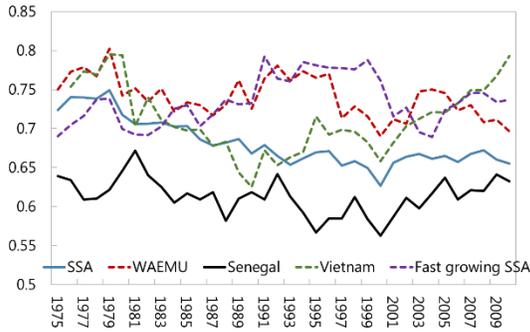
IMF Diversification Toolkit

Senegal: Export Quality Across Sectors
(Quality Index; 90th percentile = 1; Higher Values = Higher Quality)
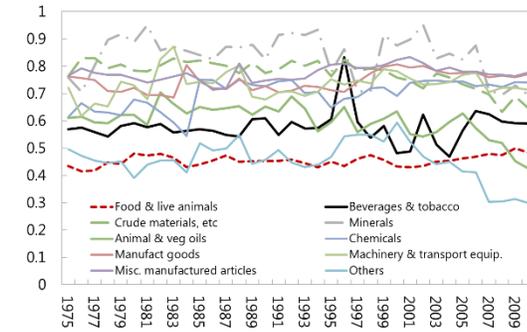
IMF Diversification Toolkit

Senegal exports are concentrated in low-quality food and animal products, but diversification into higher quality chemicals and manufacturing goods has helped....

Cote d'Ivoire has an even more concentrated export structure, but food and animal products are of higher quality....

SEN, Quality Ladder, 2010

CIV, Quality Ladder, 2010
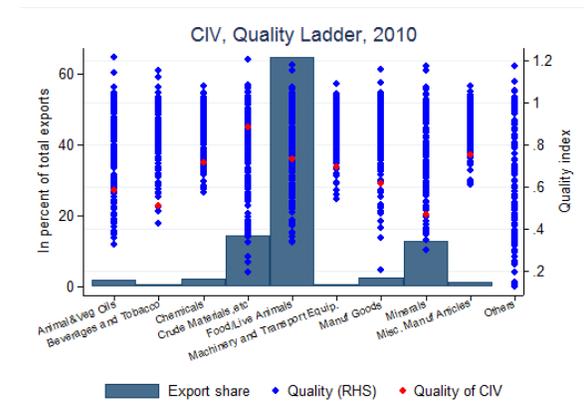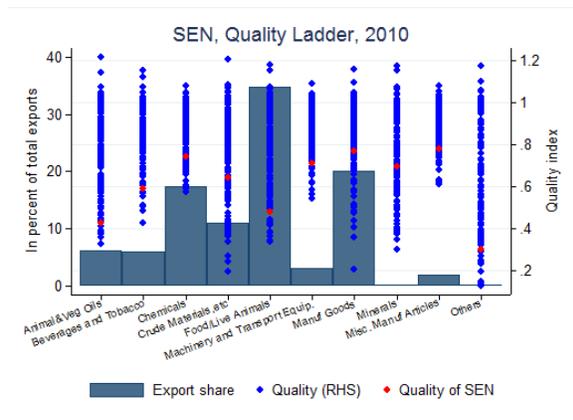
Tanzania's exports are also concentrated in the primary and agricultural sectors, with room for quality upgrading...

By contrast, in Vietnam, products with the largest export share are of relatively higher quality.

TZA, Quality Ladder, 2010

VNM, Quality Ladder, 2010
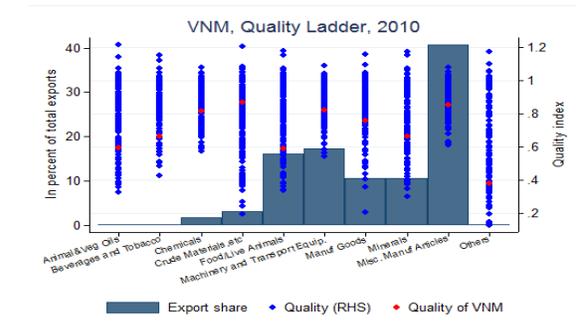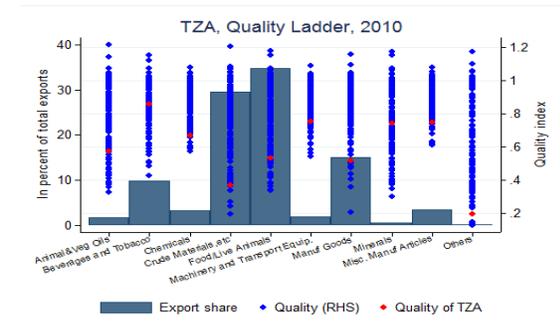
aimed at supporting the development of the national horticulture export sector through the promotion of public-private partnerships which should strengthen international competitiveness (FAO 2015; English 2016). More generally, research has shown that larger farms can promote innovation and experimenting, pushing the technological frontier in agriculture, suggesting that policies should shift emphasis from small farmers to focus on larger scale commercial investment in agriculture (Collier and Dercon 2014). Moreover, there is evidence that policies directed at strengthening institutional quality and accumulating human capital are associated with an increase in product quality (Henn and others 2013). Finally, further diversification into sectors with a relatively higher export quality—but still with a large potential for quality upgrading—could also promote development in Senegal.

Figure 7. Senegal: Integration in the Global Value Chain, Average, 2008-12
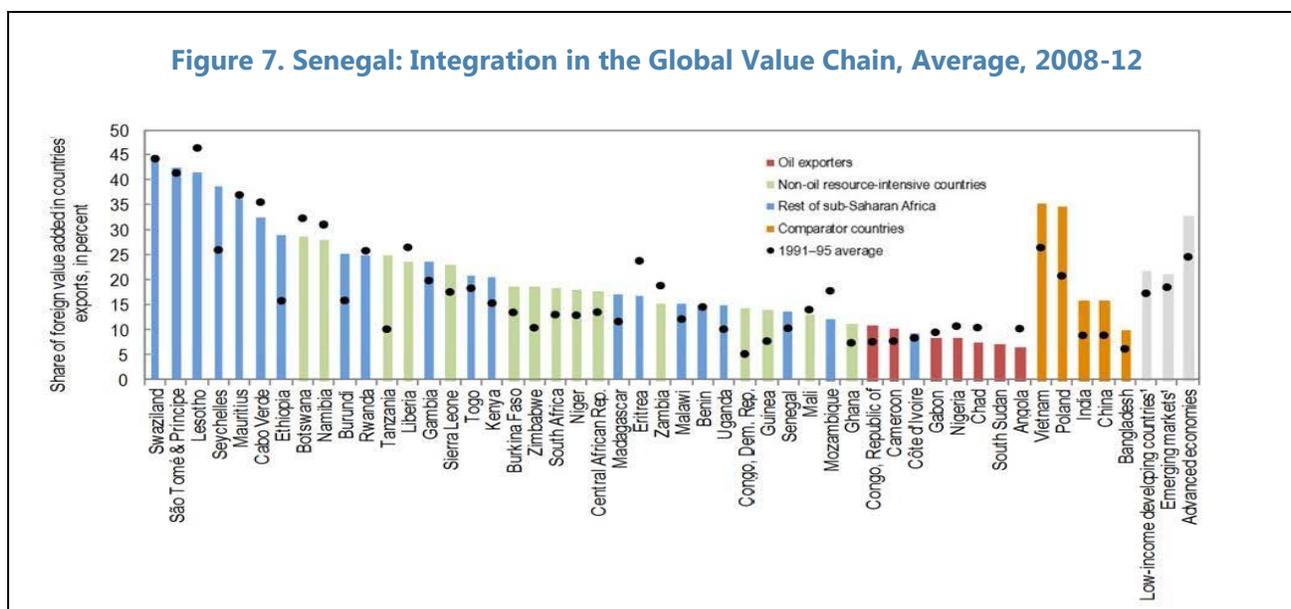
E. Non-price Competitiveness

16.   **Strengthening export performance requires improving structural competitiveness and the business environment and reducing regulatory costs for exporters** (Johnson et al. 2010). Progress in these areas makes it easier for domestic firms to produce and increase their productivity and to make the country more attractive to foreign investors and more integrated in the GVC. Measuring structural competitiveness is challenging, but the most widely used indicators consistently show that Senegal should credibly implement a number of reforms to improve its business climate. For instance, the Global Competitiveness Index compiled by the World Economic Forum ranks Senegal at 110 out of 140 economies, with significant gaps in infrastructure, market size, and in the macroeconomic environment. By contrast, Vietnam ranks 56th and 4 out of the 10 fast growing SSA countries are ranked ahead of Senegal, notably Mauritius at 46th and Rwanda at 58th. A recent report on investment attractiveness in Africa (Ernst and Young 2016a) ranks 20 SSA countries according to their resilience to macroeconomic pressures, as well as progress being made in critical areas of longer-term development, namely governance, diversification, infrastructure, business enablement and

human development. Senegal ranks 11th and it is not portrayed as a case study in a report on investor confidence and FDI in Africa (Ernst and Young 2016b), suggesting that currently Senegal is not even on the radar screen of most respected international investors. This is true even though Senegal performs well in terms of trade policy, such as tariffs and regulations (International Trade Centre 2016b). Some priority needs to be given to reforms that would increase the attractiveness of the country to international investors.

17.   Senegal made some progress in the World Bank's Doing Business Indicators (DBI) in 2016, but it still needs to massively improve the business climate, especially in the areas of tax administration and electricity supply.

Senegal ranks 147th (out of 190 economies) in the 2017 ease on doing business compiled by the World Bank (Figure 8), with a score that is close to the SSA average and lower than most of WAEMU and of all fast growing SSA countries (Mauritius and Rwanda are ranked, respectively, 49th and 56th) and other benchmark countries like Tanzania (132nd) and Vietnam (82nd). In particular, Senegal scores poorly on the ease of paying taxes— which measures the administrative burden of complying with taxes in Senegal and how

Figure 8. Ease of Doing Business
(Doing Business Rank 2016 vs 2015)

The World Bank (http://www.doingbusiness.org)

much firms pay in taxes (where it ranks 174th, because of the 58 payments due in the fiscal year and a total tax rate of 47.3%)—and on the ease of getting electricity (where it ranks 162nd), which records all procedures required for a local business to obtain a permanent electricity connection and supply for a standardized warehouse, as well as the time and cost to complete them.[6] Compared to 2016, Senegal worsened its overall DBI ranking by one position, while in 2016 it registered some improvements compared to 2015, mainly because of the reforms that facilitated registering a property (lowering the property transfer tax), getting electricity (Senelec streamlined the process to get an electricity connection and made it less costly), and starting a business (reducing capital requirements). More generally, even though it is not possible to make comparisons over time due to changes in the methodology used in the Doing Business indicators, the Senegal relative performance has improved (Senegal was ranked 178 out of 185 countries in 2014, see IMF 2015a). Consistent with this picture, the cost of electricity in Senegal increased between 2005 and 2011 and it is one of the highest in SSA in 2011, more than twice the average of Bangladesh, Cambodia, Lao PDR and Vietnam (see Figure 9 and IMF 2015b).

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[6] Accessing electricity is identified as a key constraint also in the SME Competitiveness Grid produced by the International Trade Centre (2016b), which also identifies connectivity constraints as a strong impediment to small business activities.

Figure 9. Senegal: Cost of Electricity Relative to the Average of Comparators

Sources: World Bank, International Comparison Program; and IMF staff calculations.
Note: Comparators include Bangladesh, Cambodia, Lao PDR, and Vietnam.
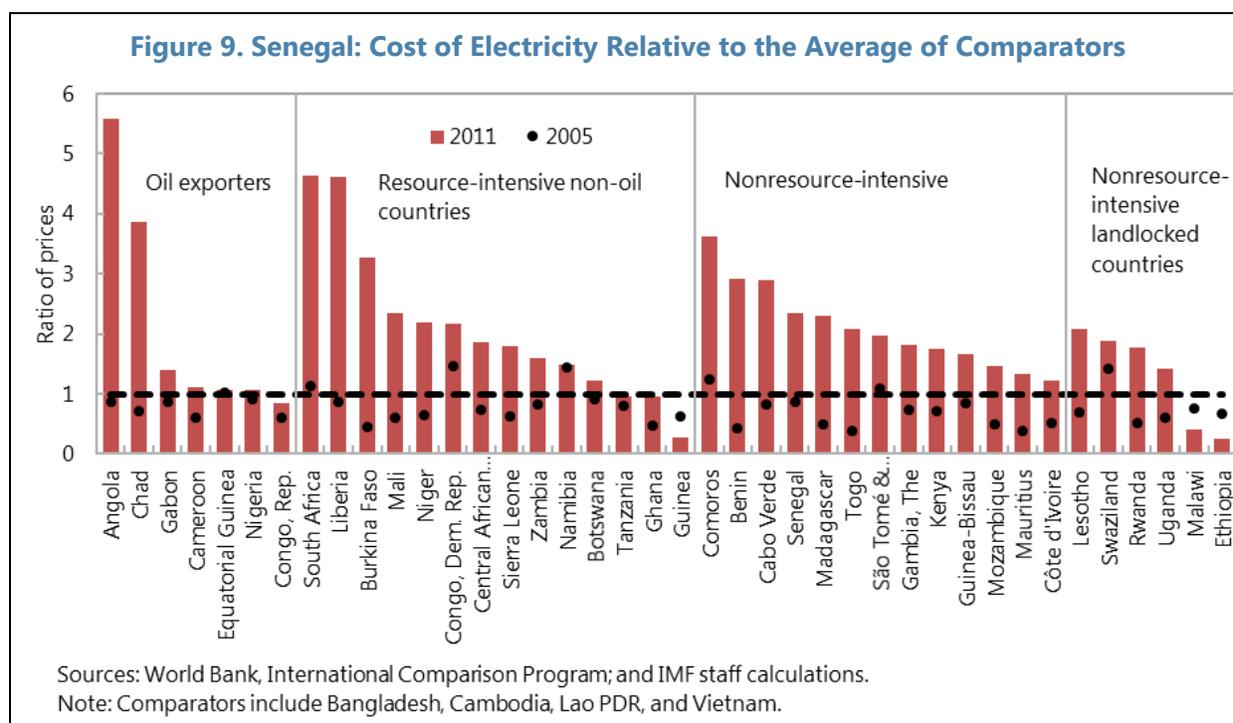
18.   To improve external competitiveness and boost exports, Senegal should invest to improve its logistics performance and strengthen its infrastructure. A key aspect to assess the competitiveness of a country in global trade is trade logistics. The World Bank compiles the Logistics Performance Index (LPI) for 160 countries worldwide to measure the country's performance along the logistics supply chain, on the basis of six dimensions of trade—including customs performance, infrastructure quality, and timeliness of shipments (World Bank 2016). Senegal's score on the LPI is relatively poor, both with respect to other countries and to its own evolution over time. In 2016 Senegal ranked 132 in the overall LPI, compared to 101 in 2014 and 58 (out of 155 countries) in 2010. Its score in 2016 is equal to the average for lower-middle income countries, and slightly lower than the SSA average, and well below key reference countries like Vietnam (64th) and fast growing SSA countries, like Uganda (58th), Rwanda (62nd), and Mozambique (84th). In particular, the two areas with the largest gap are the ability to track and trace consignments and the quality of trade and transport infrastructure (Figure 10).

F. Policy Recommendations

19.   While Senegal's export performance has been relatively positive in recent years, better export quality can further improve the external position. Senegal is a relatively diversified exporter, but the quality of its export products has been flat since 2000. Measures to improve the quality of the product mix should be prioritized: these would include investment in human capital and strengthening institutions, which have been shown to be drivers of quality upgrading across countries. The promotion of the Special Economic Zone (SEZ) with an emphasis on good governance and on

Figure 10. Senegal: Logistics Performance in Senegal

Logistics performance has been worsening over time...

... and Senegal is not doing any better than comparable countries.

Source: The World Bank (http://lpi.worldbank.org/.
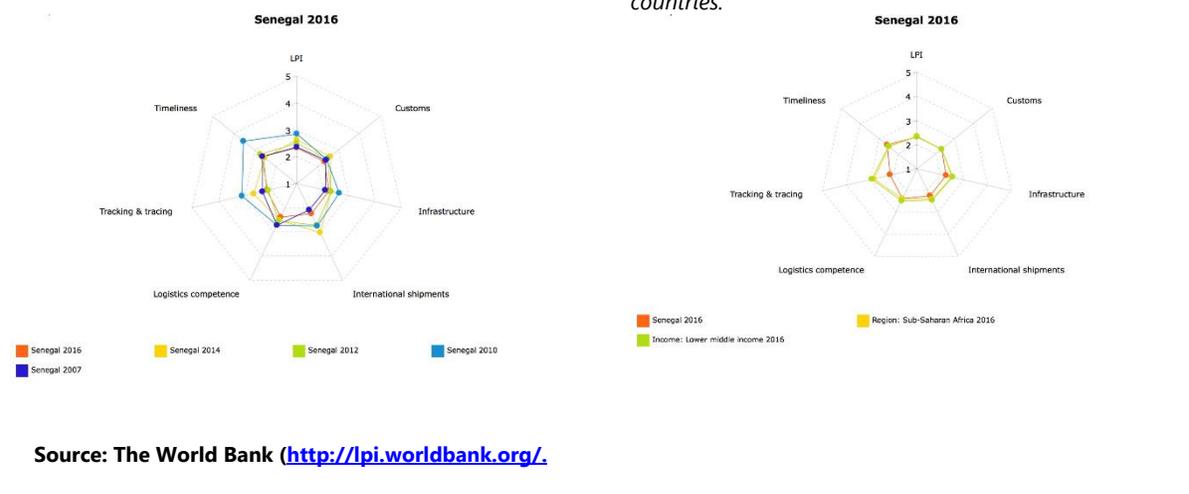
attracting FDI goes in this direction, and it will also further stimulate economic diversification and integration in the GVC. At the same time, there is substantial scope for quality upgrading in the primary sector (Hooley and Neviak 2016), which represents a consistent share of the economy, and where the government has already started implementing innovative policies to raise agricultural productivity. Unlocking the full benefits of these policies will require some form of land reform (a politically difficult issue which is being debated in Senegal) and action to regroup small holders to benefit from economies of scale in upgrading land preparation, harvesting and post-harvest treatment. Actions on seeds, fertilizers, and irrigation, which have started, may also need to be reinforced and put on an economically and financially sustainable basis.

20.   To strength competitiveness and attract investors, reforms should prioritize the promotion of a better business environment. Senegal lags behind several comparable fast-growing countries along different indicators of business environment and it still has significant infrastructure gaps. Bottlenecks in energy supply, regulation, logistics infrastructure, and tax administrations are the key elements constraining export activity, development of a strong private sector and the attractiveness of the country to foreign investors. The African Development Bank and World Bank are supporting efforts to reform Senelec and some emphasis could be given to making it easier and less costly to get an electricity connection. Regarding taxes, part of the solution may be to revise the incentive framework which currently rewards officers for collecting penalties rather than for ensuring good initial compliance. Much progress can be achieved by moving to online interactions with the tax authorities. Tax payers should be self-complying according to well specified rules that have no room for discretion over payment of taxes. Another aspect to be considered is the role of export promotion, given its large effect on export and GDP growth (International Trade Centre 2016a). In this respect, the development and the funding of trade promotion agencies is a key element to improve export performance.

21.   To make Senegal a regional hub for investment, the authorities should address bottlenecks and pursue relevant measures already in place under the PSE, such infrastructure investing (e.g. completing the new airport and the related transportation system), creation of the SEZ, implementation of energy reforms and a simplification of the tax system. These measures should be complemented by actions to make improved access to inputs in agriculture financially sustainable, clarify land property rights and encourage pooling of small land holders for a package of services that would raise agricultural productivity. On regulations, a rapid move to online interactions would produce both governance gains and increased investment, not only by foreign investors, but by Senegalese SMEs. Greater reliance on online self-enforcement would be facilitated by utilizing ex-post verification based on transparent and clearly set out rules and moving away from ex-ante authorizations that allow significant discretion by policy makers. These measures not only will contribute to the economic success of the PSE, but will also level the playing field and open space for SMEs and FDI to invest in the globally competitive activity that a hub requires.

References

African Development Bank. 2014. African Economic Outlook 2014 – Global Value Chains and Africa's Industrialization, AfDB, OECD and UNDP.

Cadot, Olivier, Celine Carrere, and Vanessa Strauss-Kahn. 2011. Export Diversification: What's Behind the Hump?, *Review of Economics and Statistics*, 93: 590-605.

Collier, Paul and Stefan Dercon. 2014. African Agriculture in 50 Years: Smallholders in a Rapidly Changing World?, *World Development*, 63: 92-101.

English, Philip. 2016. Senegal: A Service Economy in Need of an Export Boost

Ernst & Young. 2016a. Navigating Africa's Current Uncertainties, *EY's Africa Attractiveness Program 2016*, London.

Ernst & Young. 2016b. Staying the Course, *EY's Africa Attractiveness Program 2016*, London.

FAO. 2015. *Senegal. Country Fact Sheet of Food and Agriculture Policy Trends*, September, Rome.

Gaulier, Guillame, Gianluca Santoni, Daria Taglioni and Soledad Zignago. 2013. In the Wake of the Global Crisis. Evidence from a New Quarterly Database on Export Competitiveness, *World bank Policy Research Working Paper*, No. 6733, Washington DC.

Henn, Christian, Chris Papageorgiou, and Nikola Spatafora. 2013. Export Quality in Developing Countries, *IMF Working Paper*, No. 13/108, Washington DC.

Hausmann, Ricardo, Cesar A. Hidalgo, Sebastian Bustos, Michele Coscia, Alexander Simoes, and Muhammed A. Yildirim. 2014. *The Atlas of Economic Complexity – Mapping Paths to Prosperity*, Cambridge MA: MIT Press.

Hooley, John and Monique Neviak. 2016. Structural Transformation and Diversification, in A. Kireyev (ed.) Building Integrated Economies in West Africa – Lessons in Managing Growth, Inclusiveness, and Volatility, Washington DC: International Monetary Fund.

IMF. 2014. Sustaining Long-Run Growth and Macroeconomic Stability in Low-Income Countries—The Role of Structural Transformation and Diversification, *IMF Policy Paper*, March, Washington DC.

IMF. 2015a. Senegal – Selected Issues, *IMF Country Report*, No. 15/15, Washington DC.

IMF. 2015b. *Regional Economic Outlook: Sub-Saharan Africa – Dealing with the Gathering Clouds*, October, Washington DC.

IMF. 2016. Trade Integration and Global Value Chains in Sub-Saharan Africa – In Pursuit of the Missing Link, *African Department Working Paper*, Washington DC.

International Trade Centre. 2016a. *Investing in Trade Promotion Generates Revenue*, Geneva: ITC.

International Trade Centre. 2016b. *SME Competitiveness Outlook: Meeting the Standards for Trade*, Geneva: ITC.

Johnson, Simon, Jonathan Ostry and Arvind Subramanian. 2010. Prospects for Sustained Growth in Africa: Benchmarking the Constraints, *IMF Staff Papers*, 57(1): 119-171.

McMillan, Margaret, and Derek Headey. 2014. Introduction - Understanding Structural Transformation in Africa, *World Development*, 63: 1-10.

McMillan, Margaret, Dani Rodrik, and Inigo Verduzco-Gallo. 2014. Globalization, Structural Change, and Productivity Growth, with an Update on Africa, *World Development*, 63: 11-32.

Ministère de l'Economie et des Finances du Senegal. 2011. *Rapport national sur la competitivite du Senegal*, April.

TAX BUOYANCY IN SUB-SAHARAN AFRICA[1]

A.   Introduction

1.   It is common practice for countries to attempt to increase GDP growth by increasing public expenditure. However, unless these efforts are matched by policies to boost revenues, there may be risks to fiscal sustainability. This is why successful countries have emphasized tax reforms to maximize revenue increases that are generated by economic growth. The *Plan Sénégal Emergent (PSE)* envisages a similar virtuous circle but policies to achieve this are yet to be defined. This note aims to suggest some avenues for Senegal to boost revenue as high growth is achieved so that public spending can also be ramped up without risks to macro-fiscal stability. In particular, we empirically characterize the relationship between tax and economic activity in a sample of Sub-Saharan African (SSA) countries and analyze which determinants matter to maximize revenue collection. We will also use the framework to study the case of Senegal and suggest some avenues to make revenue mobilization more responsive to economic growth.

B.   Tax Buoyancy Across Sub-Saharan Africa

Overview

2.   From the revenue side of the budget, the answer to whether growth can bring down deficits, depends on tax buoyancy: the measure for how tax revenues vary with changes in GDP (Box 1).[2]

3.   Several efforts aimed at obtaining optimal fiscal policies with emphasis on the role of taxation, as an instrument of economic development, have been implemented over time. Apart from the need to mobilize resources for revenue purposes, a study of tax buoyancy is important for: i) properly forecasting revenue; ii) analyzing the stabilizing properties of a tax system; iii) and studying the progressivity of a tax system. An examination of tax buoyancy is crucial for tax policy design and formulation since, by assessing country-specific tax buoyancy, one can ascertain if the government is taking into account the impact of economic activity on tax mobilization.[3]

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[1] Prepared by Senegal team member, João Tovar Jalles, Fiscal, Policy, and Surveillance Division, Fiscal Affairs Department (FAD).

[2] A tax buoyancy equal to one would imply that an extra percent of GDP would increase tax revenue by one percent. A tax buoyancy exceeding one, however would increase tax revenue by more than GDP and potentially lead to reductions in the deficit ratio. A buoyancy greater than unity is a desirable feature of a tax system if there is increasing demand for public services and if a country would like to pursue relative financial stability. If buoyancy is low, discretionary changes may make up for it, but effects can be lagged and disproportionally high (Blanchard, Dell'Aricia and Mauro, 2010).

[3] Estimates of revenues elasticities abound in the literature. For example, Giorno et al. (1995), Girouard and Andre (2005), Belinga et al. (2014), estimated revenue elasticities for OECD countries, while Bouthevillan et al. (2001) studied the Euro area. Choudhry (1979) estimated the elasticity of tax revenue of the US, UK, Malaysia and Kenya. Turning to developing countries, Osoro (1993, 1995) provided tax elasticities estimates in Tanzania; Ariyo (1997) evaluated the productivity of the Nigerian tax system; Chipeta (1998) studied the effects of tax reforms on tax yields in Malawi; Kusi (1998) studied Ghana's tax reform; Bilquees (2004) studied the buoyancy of the tax system in Pakistan; Upender (2008) focused on India; and Cotton (2012) looked at Trinidad and Tobago.

Box 1. Buoyancy Versus Elasticity

Hindrichs (1966) and Musgrave (1969) explained the role of various tax categories in determining tax effort that expresses the ratio of the actual tax collected to potential tax and used as an indicator of how much a country is utilizing its taxable capacity. In order to determine if a country has made efforts at increasing tax revenue over a period, the sensitivity and response of the tax system with respect to income should be used. The buoyancy of a tax system reflects the total response of tax revenue to changes in national income, as well as discretionary changes in tax policies over time. Though closely related to buoyancy, the elasticity of the tax system measures the responsiveness of tax revenue to changes in national income, controlling for discretionary changes in the tax structure, that is, keeping all other parameters (including tax legislation) constant (Skeete, Coppin and Boamah, 2003). When the elasticity of major revenue sources remains low (due to low base, evasion or avoidance), governments raise additional resources through discretionary measures. Hence, the growth of tax revenue comes through high buoyancy rather than through elasticity.[1] Lacking information on discretionary measures for our panel of SSA countries and under the assumption that the effects of these changes on revenues cancel each other out over time, then revenue buoyancy is estimated via a regression of the log of tax revenue on the log of GDP. This is the approach followed here.[2]

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[1] Elasticity is more appropriate to use in estimating the impact of, say, an unexpected decline in the tax base (owing, e.g., to a natural disaster) on revenues, or the increase in, say, PIT revenues over time if brackets are not adjusted and deductions allowances remain the same. Buoyancy on the other hand, more appropriately measures past revenue developments or the combined effects of a package of reforms.

[2] Tax buoyancy and elasticity can be calculated using: i) the traditional model used to estimate tax buoyancy which requires GDP to be a determinant of tax revenue; ii) the proportional adjustment method which involves isolating the data on discretionary revenue changes; iii) the dummy variable method which introduces a dummy variable for each year in which there was an exogenous tax policy change; iv) the constant rate structure which involves collecting statistics on actual tax receipts and data on monetary value of the legal tax bases and corresponding revenues; the tax bracket of the base year is then multiplied by the corresponding base values and the products summed up; and v) the divisia index which introduces a proxy for discretionary tax measures.

4.   Additionally, estimation of individual tax buoyancies helps shed more light on the weaknesses and strengths of the systems and allows fiscal authorities to identify taxes which have high income elasticity and are thus better reform targets when trying to increase overall tax revenue. Moreover, understanding how and why revenues respond to the business cycle is important from the point of view of the government's intertemporal budget constraint and tax smoothing. Finally, buoyancy and its source are important in an era with increasing concern about rising inequality and its dampening effects on growth (let alone the social challenges from more inequality). As GDP grows, a good tax system needs to automatically maintain revenue as a share of GDP, whilst collecting this tax from those best able to pay and minimizing distortions that negatively impact growth.

5.   It is also important to consider the time horizon used in the analysis, since estimates of tax buoyancy can differ between the short and long run. If tax revenue increases by more than GDP in percentage terms (meaning a buoyancy coefficient higher than one), then the tax system is considered to be a good automatic stabilizer. However, long run buoyancy is generally expected to be equal to one. If not, at least on theoretical grounds, there would come a point where revenues exceed 100 percent of their respective base. Long-run buoyancy is of relevance to assess the effect of economic growth on long-term fiscal sustainability. A coefficient larger than one would imply **(ceteris** paribus) that higher output growth positively affects the overall balance through the revenue side of the budget. In contrast, short-run buoyancy can be different from one: it can differ across revenue items and it is more closely linked to the stabilization role of fiscal policy.

How does buoyancy differ across countries and types of taxes?

6.   **In this sub-section we empirically examine the short and long run tax buoyancies of 37 SSA countries between 1990 and 2015 using time series and panel data techniques (see Jalles, 2016 for further details).** Starting with some stylized facts, tax revenues in these countries, on average, have been increasing over the sample period, driven largely by Corporate Income Tax (CIT) and Taxes on Goods and Services (TGS)—Figure 1.

Figure 1. Senegal: Inter-Quantile Range of Tax Revenue (percent GDP) Over Time
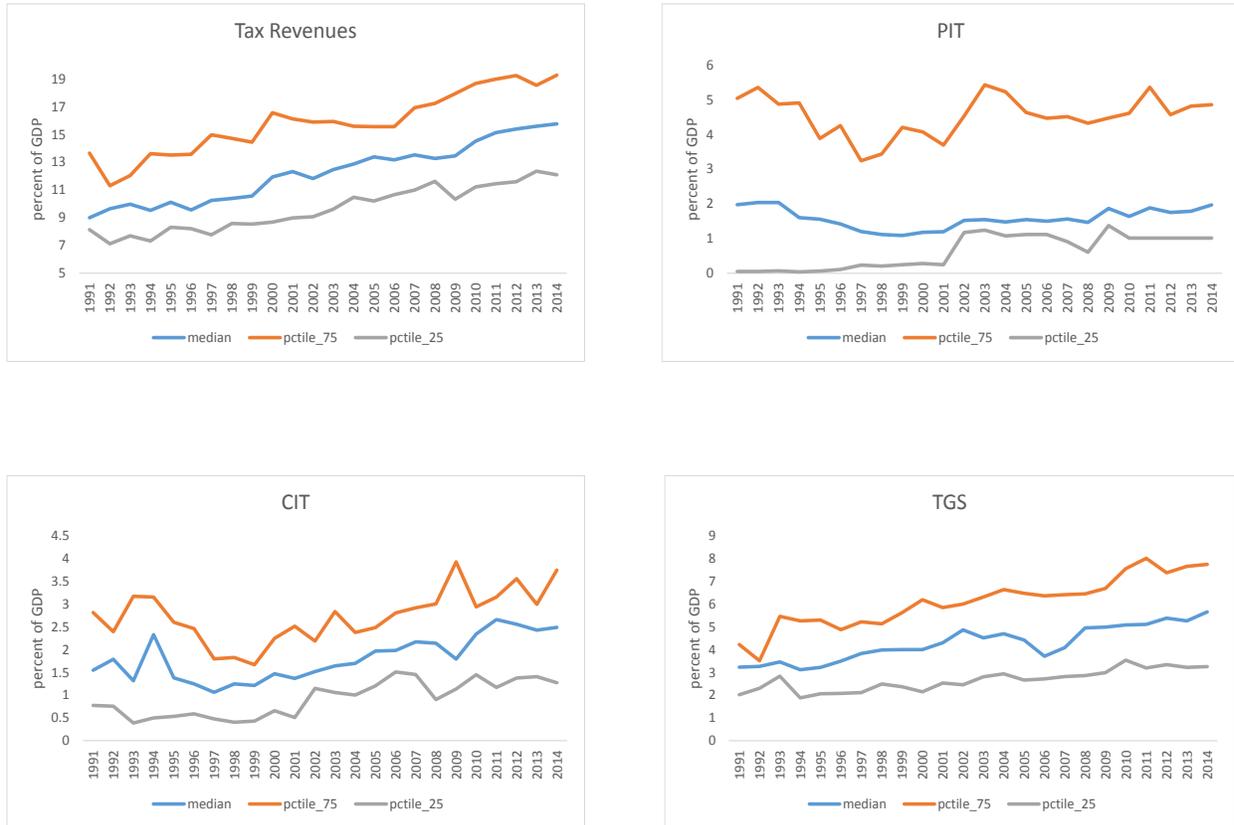
Note: each panel plots the median together with the 25th and 75th percentiles.
Source: Jalles (2016).

Table 1. Senegal: Overall Tax Buoyancy by Country

Country	Long run buoyancy	Short run buoyancy	Speed of Adjustment
South Africa	**1.082***	**1.597***	-0.451***
Angola	**1.053***	**1.248***	-0.707***
Botswana	**1.114***	0.645*	-0.985***
Burundi	**1.015***	**0.762**	-0.573***
Cameroon	**1.059***	**3.705**	-0.694**
Central African Republic	0.738	**2.268***	0.060
Chad	**1.544***	-0.060	-0.690***
Republic of Congo	**1.035***	-0.010	-0.491***
Democratic Rep. Congo	**1.257***	0.449***	-0.645***
Benin	**1.141***	**0.936***	-0.216*
Ethiopia	**1.287***	0.494**	-0.283**
Gabon	**1.149***	0.468**	-0.364
Ghana	**1.158***	0.913	-0.525**
Guinea Bissau	**2.172***	**1.488***	-0.826***
Guinea	**1.229***	**1.362***	-0.452***
Cote d'Ivoire	**1.065***	**1.876***	-0.967***
Kenya	**1.134***	1.074*	-0.361**
Lesotho	**1.136***	1.671*	-0.492**
Liberia	**1.542**	**2.205***	-0.817**
Madagascar	**1.044***	**2.253***	-0.695***
Malawi	**1.249***	**1.055***	-0.776***
Mali	**0.961***	0.349	-0.411**
Mauritius	**1.136***	**0.809***	-0.935***
Mozambique	**1.104***	**0.882***	-0.152
Niger	**1.523***	**0.900***	-0.761***
Nigeria	0.846***	0.268	-0.982***
Zimbabwe	**3.289***	**5.420***	-0.621**
Rwanda	**1.295***	**2.198***	-0.076
Senegal	**1.228***	**0.839***	-0.515**
Sierra Leone	**1.045***	**1.716**	-0.692**
Namibia	**1.037***	0.603**	-0.257
Swaziland	**1.252***	**2.452***	-0.583***
Tanzania	**1.194***	**2.312***	-0.683***
Togo	**1.347***	**1.450***	-0.367***
Uganda	2.060	0.399**	-0.022
Burkina Faso	**1.238***	**1.498***	-0.530***
Zambia	11.115	2.817**	-0.012
Mean	1.535	1.386	
Median	1.149	1.074	
Standard Deviation	1.675	1.083	

7.   Using a Mean Group estimator,[4] Table 1 shows the results of the estimated buoyancy coefficients for total tax revenue for each country in our sample. Note first that the standard

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[4] In our empirical analysis we consider the Mean Group (MG) estimator (Pesaran and Smith, 1995). This estimator is appropriate for the analysis of dynamic panels with both large time and cross-section dimensions, and it has the

(continued)

deviation of long-run buoyancy estimates is much larger than the one for the short run. Moreover, in 19 out of 37 countries[5] long-run tax buoyancies are statistically significantly higher than one, meaning that for these countries growth has improved fiscal sustainability over time.[6] For the rest of the countries, almost all yielded a long-run buoyancy statistically not different from unity. In only 11 out of 37 countries[7] the tax system has acted as a good automatic stabilizer, as evidenced by short-run buoyancies statistically larger than one.[8]

8.   We repeated the same estimation for the three tax components for which we have sufficiently long coverage, namely PIT, CIT and TGS, and summarize the buoyancy estimates in separate histograms—Figure 2.[9] We observe that for the three tax categories the long-run buoyancy mode is between 1 and 1.5, while the short-run mode is more dispersed (larger than 2 for CIT and between 0.5 and 1 for TGS).

Figure 2. Senegal: Histogram of Country Specific Buoyancy Estimates for PIT, CIT, and TGS
(Relative frequency, in percent)

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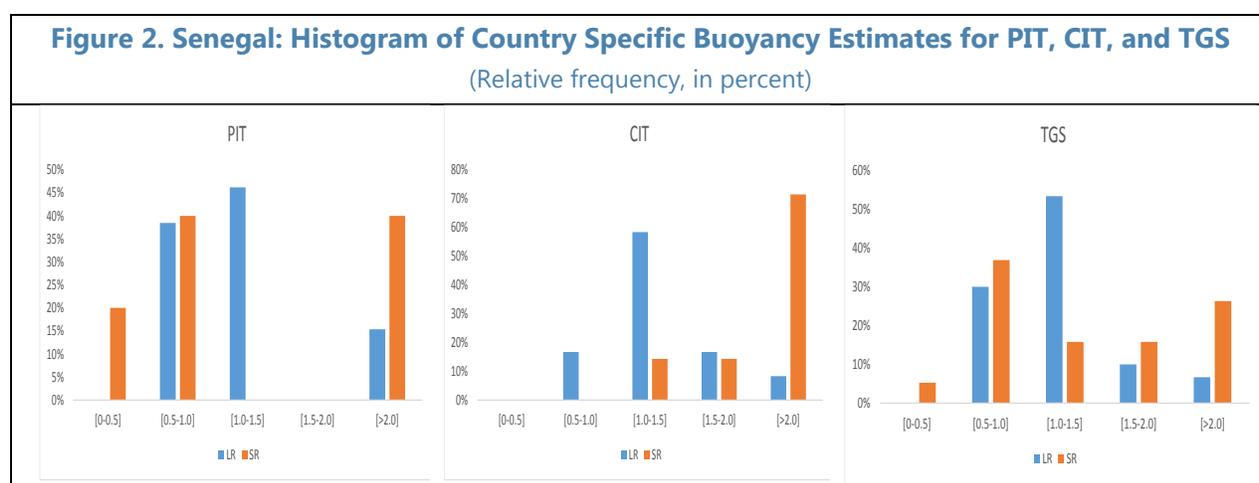
advantage of accommodating both the long-run equilibrium and the possibly heterogeneous dynamic adjustment process. To compute both panel and country-specific tax buoyancies we base our estimation on the following unrestricted error correction ARDL(p,q): $\Delta lny_{it} = \varphi_i \gamma_{it-1} + \sum_{j=1}^{p-1} \mu_{ij} \Delta lny_{it-j} + \sum_{j=1}^{q-1} \rho'_{ij} \Delta lnx_{it-j} + \sigma_i + \epsilon_{it}$ where γ_{it-1} is the error correction term, hence φ_i is the error correction coefficient measuring the speed of adjustment towards the long-run equilibrium. This is estimated for aggregate tax revenue and the three revenue categories: PIT, CIT, TGS.
〚 〚 ρ'〛 _ij Δlnx_(it-j)+σ_i+ϵ_it 〛 〛 where γ_(it-1)is the error correction term, hence φ_iis the error correction coefficient measuring the speed of adjustment towards the long-run equilibrium. This is estimated for aggregate tax revenue and the three revenue categories: PIT, CIT, TGS.

[5] Angola, Botswana, Chad, DRC, Ethiopia, Ghana, Guinea Bissau, Guinea, Kenya, Liberia, Malawi, Mauritius, Niger, Zimbabwe, Senegal, Swaziland, Tanzania, Togo, and Burkina Faso.

[6] For an empirical exploration of the main determinants of tax buoyancy in SSA, please refer to section 2.3.

[7] Angola, Central African Republic, Guinea, Cote Ivoire, Liberia, Madagascar, Liberia, Rwanda, Swaziland, Tanzania, and Togo.

[8] Results (not shown) are robust to the inclusion of "discretionary" changes in policy parameters—tax rates—in particular in the cases of CIT and TGS. Moreover, tax buoyancy does not appear neutral with respect to inflation, meaning that tax buoyancy in real terms is smaller than in nominal terms.

[9] Only statistically significant buoyancy coefficients are included. Full results are available upon request.

9.   Finally, we also assessed how the tax system behaves around business cycle turning points.[10] Tax buoyancy is larger during recessions than during times of economic expansions, in particular TGS. Hence, on average this specific tax category seems to work better as an automatic stabilizer during bad times compared to good times. During financial crises, the same is valid, with buoyancy coefficients being statistically significantly larger than those during periods of no crises. This result is confirmed by Furceri and Jalles (2016) who found that the overall impact of fiscal stabilization (measured as the amount of counter-cyclicality) is larger during recessionary periods.

What are the main determinants of tax buoyancy?

10.   A final exercise worth exploring empirically is to consider different determinants of tax buoyancy and check whether these make a difference when estimating short and long-run buoyancies. In line with the literature, we consider four categories of determinants, namely:

- *Structural*. In the early stages of development, the primary sector is characterized by "peasant agriculture", in which a large number of small producers that sell their output in informal markets, sometimes in exchange for other goods, or produce for self-consumption. The poor(-er) or non-existing bookkeeping makes agriculture a difficult sector to tax. Tanzi and Zee (2000) suggest that a large share of agriculture is associated with a small PIT and TGS. In contrast, foreign trade has been traditionally a base that is easier to tax. This reflects the fact that administrative costs of monitoring, assessing, and collecting taxes on goods that go through a limited number of ports of entry are relatively low (Agbeyegbe et al 2004; Mahdavi 2008).

- *Demographic.* One would expect that generating tax revenue from existing bases becomes more cost efficient as the level of education rises. A higher level of education enables the general public to better understand and comply with tax codes (Mahdavi 2008).

- *Macroeconomic conditions.* High inflation rates, when combined with payment and collection lags, adversely affect tax revenues through several channels.[11] Output volatility, by shortening planning horizon and slowing down economic activity, may adversely affect the level of taxation. Higher volatility is expected to be associated with less reliance on cyclically sensitive taxes.

- *Institutions.* While supply factors matter, demand factors, such as the quality of institutions, can also have a significant impact on the determination of revenue performance (Bird et al 2008). A legitimate and responsive state – one that secures the rule of law and keeps corruption under

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[10]. To check whether tax buoyancy varies depending on the phase of the business cycle, the following alternative (STAR-type) short run regression was estimated (see Granger and Teravistra, 1993).: $\Delta lnY_{i,t} = \alpha_i^k + Time_t^k + \beta_k^{recession} \cdot Y(z) \cdot \Delta lnX_{i,t} + \beta_k^{expansion} \cdot (1 - Y(z)) \cdot \Delta lnX_{i,t} + \varepsilon_{i,t}^k$ with $Y(z_{it}) = \frac{\exp(-\gamma z_{it})}{1+\exp(-\gamma z_{it})}$, $\gamma > 0$, where z is an indicator of the state of the economy normalized to have zero mean and unit variance.

[11] For example, excise taxes on some products may be adversely affected if they do not fully adjust in a timely manner to changes in the inflation rate (Tanzi, 1989). Taxes on income, profits and capital gains may shrink in size to the extent that households try to protect their wealth against the corrosive effect of inflation by substituting towards assets that are less likely to be domestically taxed and/or postponing investment plans (Agbeyegbe et al 2004; Ghura, 1998).

control—is a pre-condition for better tax collection (Fauvelle-Aymar 1999; Ehrhard 2009).[12] While the political economy in SSA is complex and heterogeneous, to a greater or lesser extent, the distribution of patronage by political elites using public resources is integral to the political process in most countries. Resources for patronage can be obtained from both sides of the budget: public expenditures or revenues. One of most important channels through which resources for patronage are obtained from the tax system are tax concessions (such as income tax holidays or import duty exemptions), granted to politically favored companies on a selective basis, in circumstances where there is no strong objective rationale for granting tax incentives. Although this is often not illegal, it is done in a very non-transparent manner (Fuest and Riedel, 2009). Moreover, there is a negative correlation between tax expenditures and revenue productivity since tax incentives exhibit the capacity to erode the statutory tax base. This in turn poses a danger to compliance, especially when incentives are seen as subsidies (Kuewumi, 1996). Using the system to provide tax incentives causes a serious drain on the national treasury by conferring windfall gains on existing activities or by shifting resources to tax-preferred activities, raising concerns about issues of equity and efficiency in the tax system (Kusi, 1998).

11.   In inspecting which characteristics or factors matter the most for tax buoyancy[13] we found that, as far as structural characteristics are concerned, countries with a relatively larger agricultural sector show a lower (long-run) buoyancy coefficient estimate. Human capital and institutions also seem to matter, with more literacy and higher polity corresponding to a (long-run) buoyancy statistically larger than one. In contrast, inflation and output volatility reduce the ability to maximize tax collection.[14]

C.   Revenue Mobilization: Putting Senegal in Context

12.   Mobilizing revenue is a complex undertaking. This is especially so in developing countries where there is a need to improve the efficiency and equity of the tax system. A first challenge is to reduce the reliance on import duties and shift the tax burden to the domestic economy, partly to reduce the price-distorting effects of trade taxes and partly to comply with WTO agreements. Such a transition is a key factor in the rise of the VAT (Keen and Simone, 2004; Keen and Mansour, 2009), which has by and large been a success. A second challenge is to lower CIT and PIT rates to reduce related distortions. However, if such a change is to be revenue-enhancing, it requires a more than compensating expansion of the tax base, and in the presence of weak tax administration,

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[12] To the extent that corrupt tax collectors drive some businesses into the informal sector, corporate income and value added taxes are expected to shrink. In fact, Bahl (2003) shows that the tax effort is negatively correlated with the size of the shadow economy. More generally, Teera (2002) show that tax evasion negatively impacts the overall tax effort.

[13] We have re-run the equation described in footnote 6 by splitting the sample according to the cross-country median of each characteristic.

[14] Lack of data on tax expenditures prevent us from empirically assessing their impact on buoyancy estimates. In fact, the Open Budget Survey (produced since 2006 by the International Budget Partnership) states that the state of tax expenditure reporting in Africa is particularly poor: of the 26 countries covered in the 2010 survey, 20 were found to release no public information on tax expenditures and of the 6 that did release, only South Africa and Morocco released more than minimal details.

this has proven hard in many countries (Stotsky and Wolde-Mariam, 1997). Moreover, both buoyancy and fairness suffer when tax systems either offer significant discretion or have overly generous exemptions in the investment code or similar incentives. The privileged few with access to policy makers pay low or few taxes whilst SMEs and those without connections have to pay a larger share of their income even when they earn less.[15] Against this background, this section assesses Senegal's performance and challenges for efficiently mobilizing (more) revenue.

13.   Senegal has a lot of catching up to do to reach middle income/emerging status as envisaged by the PSE. Indeed, to achieve the objectives of the PSE the growth rate needs to least double and maintained at that level for more than 20 years.[16] Financing and generating such growth requires massive investment, in both human capital and public infrastructure. Perhaps more importantly for long-term success, it means creating the economic space to encourage and reward individual initiative and enterprise. At the same time the expansion in public services and investment in human capital and public infrastructure needs to be financed. This requires a sharp increase in government revenue to make the spending increase sustainable and avoid risks of debt distress and economic crisis. The challenge is to put in place a tax system that will reward entrepreneurial activity whilst making everyone pay their fair share of taxes at a reasonable rate.

14.   Senegal's performance on this count has been disappointing and suggests that efforts to date to finance growth have been too limited, with a tax system that is unfair in the way it treats, not only those with higher income, but also those with similar income who face different de facto tax rates due to discretion and exemptions. This is borne out both by the high tax expenditure in Senegal of about 6 percent of GDP and when compared to the experience of successful middle income countries. In what follows we compare the evolution of the revenue effort in six emerging countries that managed to regularly and sustainably raise their revenue-to-GDP ratio: Argentina, Uruguay, Morocco, Turkey, South Africa, and South Korea.[17] All of them have their own idiosyncrasies; however, these countries have enough in common with Senegal for it to draw some useful lessons to

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[15] According to KPMG's "Senegal Fiscal Guide 2013/14", the country has a number of exemptions: on capital gains there is a tax exemption in the case of a partial transfer of activity; on new enterprises and extension projects there are custom duty exemptions; finally, a special regime is applicable to approved export firms (e.g. exemption from duty stamps on utilitarian vehicles; exemption from taxes based on salaries paid by companies; exemption from all registration duties when registering a company; exemption from patent fee, etc.).

[16] To reach upper-middle income status in 20 years, Senegal would need to quadruple its current $1000 US$ per capita. To achieve this goal, a 7 percent average annual growth combined with no more than 3 percent in population growth would be needed. It should be noted that in the World Bank's income classification, the lower bound for upper-middle income countries has increased by about 30 percent between 1995 and 2015, which means that Senegal's current $1000 GNI per capita may need to reach about US$ 5320 in 2035 to reach upper-middle income status, implying that growth rates higher than 7 percent may be required.

[17] These countries were selected using the following criteria, which highlight Senegal's objectives and intrinsic characteristics over the 1980–2014 period: i) regular and relatively smooth increase in own-revenue, across the 20 percent of GDP threshold; ii) transiting from low to at least middle income; iii) lack of significant oil revenue; iv) no island or city-states; v) no post-communist transition countries; vi) no very small countries that could be highly dependent on a large neighboring country; and vii) no very large countries, which have very peculiar dynamics.

sustainably raise tax revenue above 20 percent of GDP, in line with the objective of achieving emerging country status.[18]

15. **From 1980 to 2014, both tax and non-tax revenue have been lower in Senegal than in comparator countries, and the gap has significantly widened (Figures 3 and 4).** The shock of the CFAF devaluation was followed by a more positive trend which stalled in the wake of the global financial crisis (GFC). Non-tax revenue collapsed in 1994 and never recovered.

Figure 3. Senegal: Tax Revenue

1/ Source: ITCD, IMF staff calculation.

Figure 4. Senegal: Non-Tax Revenue.

1/ Source: ITCD, IMF staff calculation.
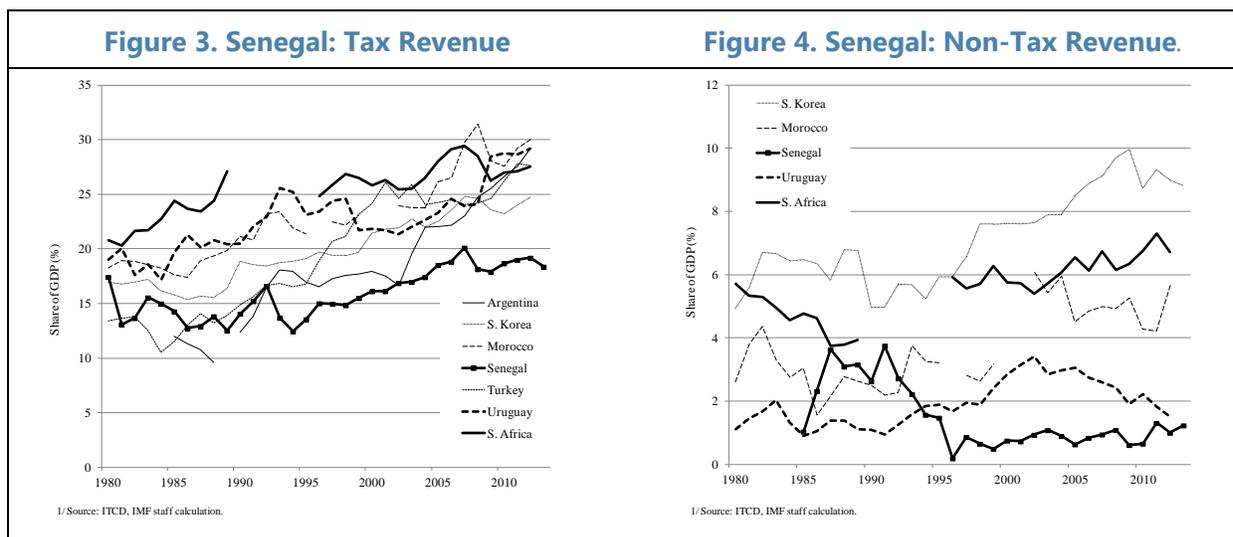
16. **The fall in international trade taxes was more than offset by the rise in indirect taxation.** All countries except Argentina saw the burden of trade taxes decrease, but the fall was most abrupt in Senegal (Figure 5). The increase in domestic sales taxes, however, reached 6 percent of GDP over the

Figure 5. Senegal: Revenue from International Trade

1/ Source: ITCD, IMF staff calculation.

Figure 6. Senegal: Revenue from Sales Taxes

1/ Source: ITCD, IMF staff calculation.

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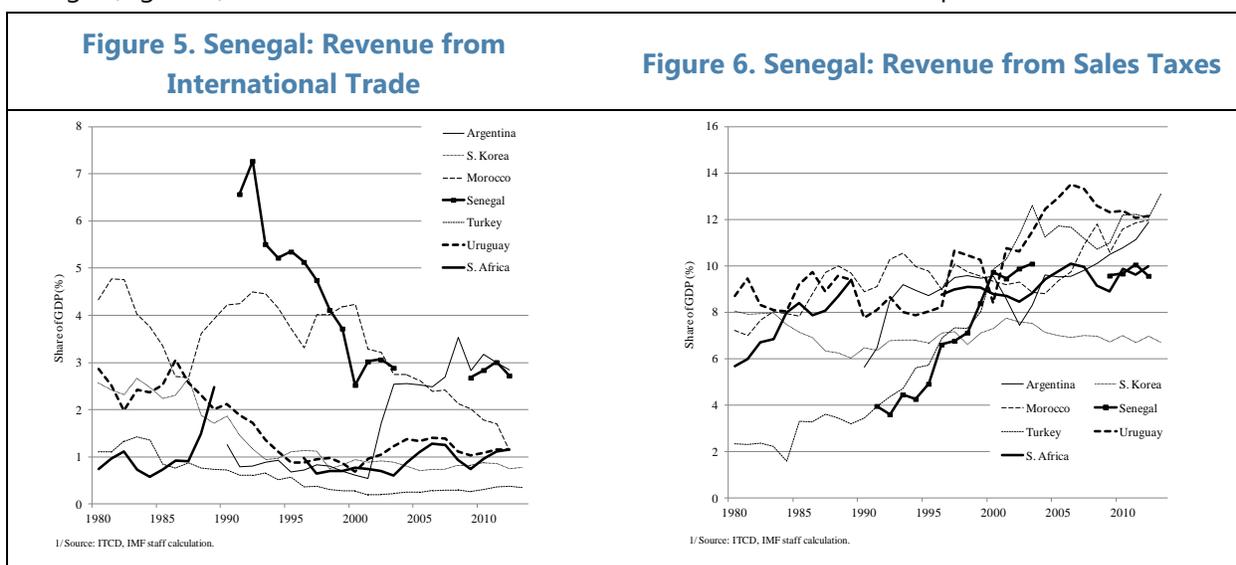
[18] These countries are also ones marked by several episodes of inclusive growth (i.e. positive real GDP growth per capita with simultaneous reductions in the Gini index). On average, these countries experienced five such episodes between 1980–2013, while Senegal recorded one single episode (Mello and Jalles, 2016). With the PSE's objectives of higher growth and lower poverty in mind, this is yet another reason for selecting this comparator country list as the appropriate benchmark.

period suggesting that the transition towards domestic taxation cannot be blamed for Senegal's poor performance. This transition, however, appears to have abruptly stopped with the introduction of WAEMU's common external tariff in 2000, while other countries (e.g. Morocco) continued to evolve towards greater reliance on domestic revenue.

17.   **Relatively high statutory rates combined with high tax expenditures have introduced not only unfair treatment of different taxpayers but resulted in poor performance of income tax with poor control of this tax base**. Except for South Africa, the burden of the PIT in Senegal is similar to that of comparator countries (Figure 7). However, statutory PIT rates in Senegal range from 20 percent to 40 percent, somewhat higher than for comparators (averaging from 11 to 36 percent). This is due to a smaller base and to lack of control over the existing base because Senegal has relatively higher distortions as evidenced in both large tax expenditures and a significant informal sector.[19] A worse picture emerges for the CIT, where extensive exemptions result in a much lower tax burden despite having, once again, relatively higher rates (Figure 8).

Figure 7. Senegal: Revenue from PIT   Figure 8. Senegal: Revenue from CIT.

1/ Source: ITCD, IMF staff calculation.
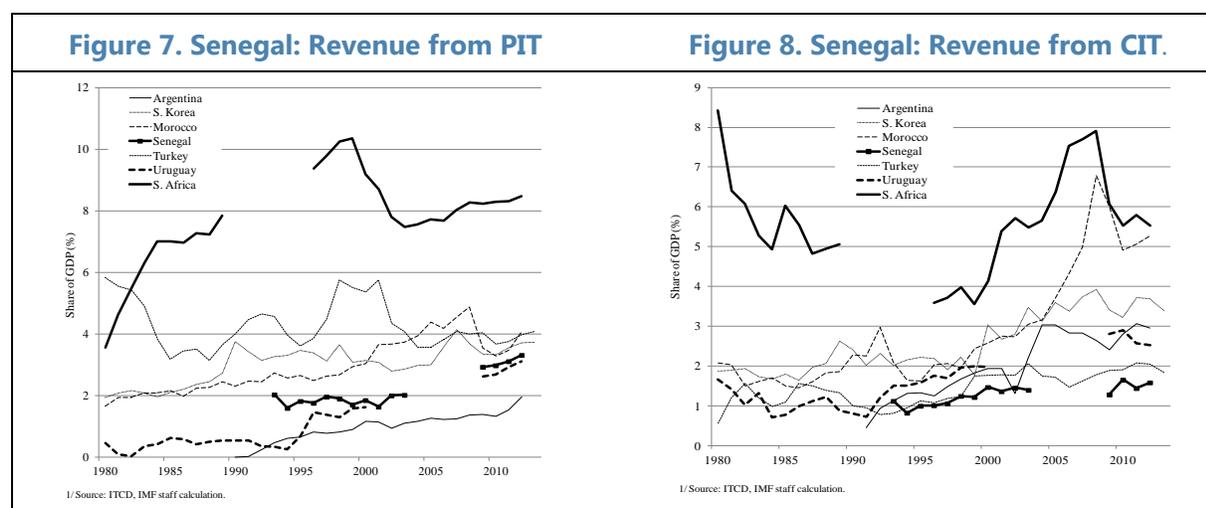
18.   **Social contributions have been a major source of revenue for comparator countries, but not for Senegal (Figure 9).[20]** In Senegal, although some statutory rates can be relatively high,[21] the narrow base severely limits the revenue potential of wage taxes, as they typically come from the public

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[19] Tax expenditures have increased in Senegal in recent years. After a decline in 2008–09, tax expenditures in 2013 reached 40 percent of revenue and 7.3 percent of GDP. About 60 percent of exemptions target social objectives, 26 percent target economic development, and about 8 percent are benefits granted under the Mining Code. In many countries, particularly in SSA, tax incentives have resulted in little or no new investment. For example, the introduction of new investment codes in countries the CFA franc zone, including Senegal and the Economic Community of Central African States between 1994 and 2006, which provided more generous tax incentives, did not have any demonstrable effect on FDI (Van Parys and James, 2010). It is more efficient for Senegal to improve the investment climate rather than granting tax exemptions. Despite generous incentives and large tax expenditure, FDI and productive private investment are low in Senegal relative to similar developing countries.

[20] Note that, due to ongoing issues of reclassification of fiscal items under the new GFSM 2001/14, the IMF's Government Financial Statistics do not correctly display the actual figures for social security contributions in the case of Senegal.

[21] See www.doingbusiness.org/data/exploreeconomies/senegal/paying-taxes. Some wage taxes have ceilings.

service and large formal businesses. This highlights the urgency of opening economic space for SMEs. to thrive and create formal sector employment in globally competitive activity. These moves would also open the way for a social protection system that can protect all workers instead of focusing on protecting the jobs of the privileged few in unionized sectors.**[22]**

19.   As Senegal has a large agricultural sector which does not pay much in taxes, this may appear to be a target for revenue mobilization. However, it is not clear that it is desirable to tax this sector directly. Incomes and productivity in agriculture are generally low. It would probably be counter-productive to add disincentives via the tax system that discourage modernization and expansion of horticulture and higher value crops. Instead it may be better to indirectly tax the sector according to ability to pay by focusing on (i) property taxation in the rural areas, from which purely agricultural land that is being productively used for growing should be exempt to encourage modernization; (ii) income taxes that are paid by everyone with few exemptions and with reasonable thresholds that would fairly tax high income land owners and wealthy farmers; and (iii) consumption taxes such as VAT.

20.   In this trio, property taxes are under-used in Senegal even though they are usually considered a natural candidate to finance growing infrastructure needs, such as in the case of Senegal, since they are progressive, administratively feasible and scale-up automatically with urban expansion. Moreover, real estate is a very efficient and equitable form of taxation (Norregaard, 2013). In all countries, including the comparators, this is a tax which tends to underperform due to resistance by those with the greatest capacity to pay who generally also have the loudest political voice.[23] However, Senegal underperforms far more than the comparators in this area. Moreover, this base has become increasingly important in several comparators, particularly as decentralization has taken hold (Figure 10). Ideally, property taxes require a "cadastre" —which in turn may call for many competent staff over most of the territory—as well as reliable and trustworthy notaries and good construction permit records. Maintaining this mass of information and human resources requires a large investment. However, simplified alternatives such as the National Residential Property Tax (NRPT) linked to income tax payments used by Mauritius could be considered in the absence of a "cadaster".[24] With increased emphasis on decentralization of Government services in Senegal it will be increasingly important to raise at least 2 percent of GDP from this source.

21.   All in all, the main culprits for Senegal's poor overall revenue performance appear to be income-related taxes and property taxes. The small base and/or the lack of control of the base through excessive exemptions also appear to play an important role.

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[22] A more flexible system of hiring and firing in relation to economic conditions would increase the demand for formal sector employment and allow SMEs to expand. In counterpart, it would be necessary for the Government to support workers during spells of unemployment and to pro-actively help them find new jobs to minimize the period they are inactive.

[23] The best performing countries (USA, Canada, UK) generally collect 3 to 4 percent of GDP in real estate taxes.

[24] The NRPT was levied on the basis of self-assessment and declared on the Personal Income Tax form. The tax was set at a fixed rate per square meter of residential land owned or of apartment size for properties in buildings. After 5 years, as part of electoral promises, the tax was repealed under pressure from wealthy property owners who objected to paying property tax. However, the tax worked well and was easy to administer and could be a good option for countries with limited administrative capacity and no cadastre.

Figure 9. Senegal: Revenue from Social Contributions
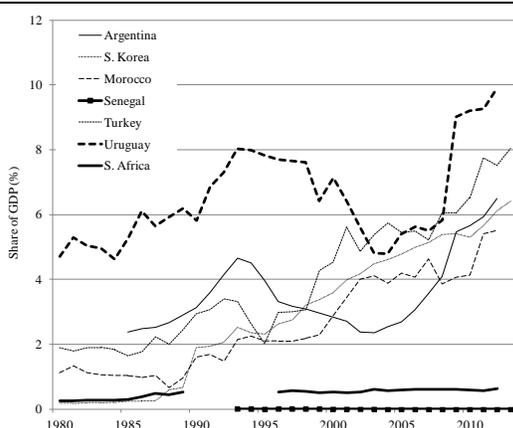
1/ Source: ITCD, IMF staff calculation.

Figure 10. Senegal: Revenue from Property Taxes.
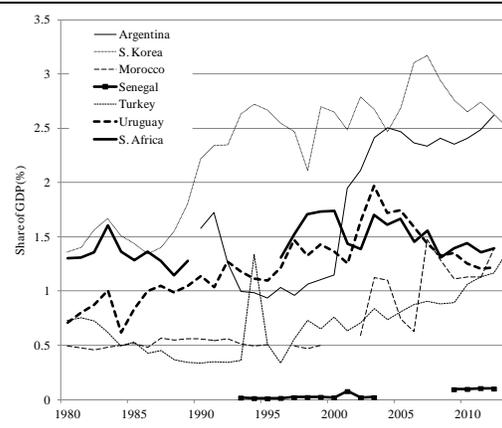
1/ Source: ITCD, IMF staff calculation.

D.   The Way Forward: Concluding Remarks and Policy Considerations

22.   Based on the above analysis, tax buoyancy in Senegal could be increased by both measures to reform the tax system and actions to foster building of human capital and further opening up the economy to international trade and investment. For instance, investing in education and skills' enhancement as well as supporting actively the tradable sector are important possible steps towards improving overall tax buoyancy. Moreover, a reduction in the economy's dependence on the traditional agricultural sector would also allow higher revenue collection as would better institutions. This means increasing the contribution of new sectors including horticulture, manufacturing and globally competitive services such as tourism and making the port and airport regional hubs.

23.   However, the primary challenge is to overhaul both tax policy and tax administration through reforms that are certainly difficult but necessary. These reforms demand a profound change of culture in revenue administration and the approach to tax policy where Government stops offering favors to the privileged few and moves away from rewarding staff on the basis of penalties and instead pays them the same amount for ensuring good compliance. Strengthening the country's administration will include:

- changing the incentive system for remunerating tax officials to make the regime more transparent and with incentives that focus on good overall compliance;[25]

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[25] A key challenge for governments in developing countries, such as Senegal, is creating compensation structures for tax officials that incentivize collection without creating opportunities for over-taxation or bribery from taxpayers. Note, however, that in Senegal the DGID suffers from lack of competent personnel and, hence, there is a trade-off between increasing the tax force so as to maximize tax revenue collection and rationalize the public sector wage bill. Khan et al. (2014) evaluate the impact of compensation structures for tax officials in Punjab, Pakistan, that are based on revenue collected from property taxes. The authors find that performance-based pay yielded a substantial 46 percent increase in the growth rate of tax revenues, driven by the reassessment of a small number of high-value commercial properties.

(continued)

- providing greater autonomy to tax agencies to deliver on the basis of a performance contract for all staff and not just those interacting with tax payers;

- accelerating the move to online interaction between taxpayers and tax authorities;

- investing in additional human and physical resources, particularly to make online declaration and payment rapidly effective;

- clarifying circumstances which justify tax reductions/exemptions and uniformly providing these incentives to all who qualify on the basis of self- enforcement and ex-post verification, instead of ex-ante authorization;

- more effective use of the single taxpayer identification number to ensure that income is properly cross checked with imports;

- making better use of research and control protocols and procedures to ensure that all taxpayers pay their fair share of taxes; and

- fostering information sharing and promoting training.[26]

24.   In terms of tax policy, while significant efforts have been made to expand the tax base, much more needs to be done to ensure fair treatment of all taxpayers that results in everyone paying their fair share of taxes at a reasonable rate. This means rolling back tax exemptions while lowering rates and ensuring that all those involved in economic activity are in the tax net. In a modern, transparent and well governed society there is no need for Government to have discretionary authority to favor the privileged few with exemptions. Instead, any justified tax incentives should be rules based, transparent and automatically available to all including SMEs. This rolling back of tax expenditures should set the stage for a tax reform that is revenue neutral in design and allows reducing rates to be competitive with the comparator countries. Complementary action is also needed to improve the taxation of capital income (including with capital gains taxes, improving thin capitalization rules, reviewing transfer pricing guidelines and other backstopping provisions). Equally important would be to set up a dialogue on how to raise at least 2 percent of GDP in property taxes which could be given to local authorities as one of their main tax handles under the planned decentralization. One strategy that may work well in developing countries such as Senegal with some large (and growing) cities but still heavily agrarian is to introduce a combination of capital value systems for urban places and an area-base system for more rural areas (Bahl, 2009). Recommendations could be made in time for inclusion in the 2018 budget (to be presented to the National Assembly in September 2017); however, a deeper and well-designed reform of property taxation may require more time to be put in place.[27]

While performance pay may help address some major revenue collection issues, it may not eliminate or reduce corruption and collusion between tax authorities and taxpayers.

[26] More specifically, within customs administration, it is recommended that the authorities modernize the customs' traffic at the port of Dakar, invest in IT upgrades and facilitate the electronic connection and interface of databases between DGD and DGID, optimize human resources as well as financial and material resources, and reinforce the mechanisms fighting fraud and counterfeiting (IMF 2016).

[27] Some common elements of a reform strategy would ideally involve: i) an in-depth diagnostic analysis that carefully maps present capabilities and identifies policy and administrative weaknesses; ii) development of specific tax policy design, with focus on the definition of the base, the rate structure and exemption policy; iii) detailed planning of administrative reform carefully adapted to the Senegalese case; iv) reduction or phasing out of property transfer taxes;

Finally, there is a scope to increase worker welfare, enhance growth prospects and support the emergence and expansion of SMEs by setting up a social insurance system that would marry flexibility in employment with protection of individual workers. A study of experiences in other developing countries including the comparators could be undertaken to develop recommendations for the 2017 budget. Extending the tax base through greater administrative controls represents a much greater and immediate challenge, especially in the context of low human capital. Widening the base through policy and administrative means will also reinforce the overall degree of equity of the tax system whilst making it more buoyant**.**

25.   Despite the diversity of experiences in tax reform in our set of six comparator countries (see Petit and Jalles, 2016 for details), the legitimacy of the effort in increasing the tax burden stemmed from the need to eliminate macroeconomic imbalances (Morocco, Turkey, Argentina, Uruguay) or benefitted from strong political support to improve social and economic conditions (South Africa, South Korea). While there is no "one-size fits all" strategy to copy, many self-reinforcing elements stand out: i) increased reliance on income taxes; ii) significant improvements in tax administration in order to strengthen the control of the tax base, weed out tax evasion and avoidance, and increase the number of taxpayers; iii) base broadening through the revision and streamlining of tax exemptions and other tax policy and tax administration measures, in conjunction with lower rates; iv) decentralize the tax system and administrative apparatus.

26.   Senegal has already implemented some of these measures, but still has much to accomplish if Senegal is to follow the path of emergence. The country already completed a transition to domestic taxes and simplified its PIT system. However, income taxation needs to be improved and at least some of the tax potential of real estate needs to be tapped.[28]

27.   In sum, Senegal's options to improve revenue performance in the short- and medium term are: (1) significantly improve tax administration with an emphasis on better governance, transparency and online interactions; (2) expand the tax base through administrative and policy means; (3) continue to improve the tax policy framework to tighten income taxation; (4) explore a better social deal for workers linked to labor market flexibility; and (5) increase property revenue as part of the move to greater decentralization.

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v) development of a monitoring device based on quantitative performance indicators to prevent property tax systems from falling back into disrepair (Norregaard, 2013).

[28] Even if a revenue mobilization strategy cannot rely strongly on real estate taxation, the poor performance of property taxes in Senegal calls for deep reforms that would better align the incentives to collect these taxes with the political benefit of the public spending that they finance.

References

Agbeyegbe, T. D., J. G. Stotsky, and A. Woldemariam (2004, October). Trade liberalization, exchange rate changes, and tax revenue in Sub-Saharan Africa. IMF Working Paper 04/178, International Monetary Fund.

Ariyo, A. (1997), "Productivity of the Nigerian Tax System: 1970 – 1990", Research paper No. 67. Nairobi: African Economic Research Consortium.

Bahl, R. (2009), "Property Tax Reform in Developing and Transition Countries", Fiscal Reform and Economic Governance Project, USAID, December.

Belinga V., D. Benedek, R. A. de Mooij and J. Norregaard (2014), "Tax Buoyancy in OECD Countries", IMF Working Paper 110

Bilquees, F. (2004), "Elasticity and Buoyancy of the Tax System in Pakistan", Pakistan Development Review, 43(1), 73-93

Bouthevillan, C., P. Cour-Thimann, G. Van den Dool, P. Hernandez de Cos, G. Langenus, M. Mohr, S. Momigliano and M. Tujula (2001) "Cyclically adjusted budget balances: an alternative approach", ECB Working Paper No. 77.

Chipeta, C. (1998). "Tax Reform and Tax yield in Malawi", AERC Research Paper No. 81. Nairobi: AERC

Choudhry, N.N. (1979), "Measuring the Elasticity of Tax Revenue: A Divisia Index Approach". IMF Staff Papers, 26.

Cotton, J.J. (2012), "The Buoyancy and Elasticity of Non-Oil Tax Revenues in Trinidad and Tobago (1990-2009)", Central Bank of Trinidad and Tobago Working Paper.

Ehrhart, H. (2009). Assessing the relationship between Democracy and Domestic taxes in developing countries. CERDI, Etudes et Documents, E.30

Fuest, C. and N. Riedel (2009), "Tax Evasion and Tax Avoidance in Developing Countries: The Role of International Profit Shifting", Paper Prepared for the World Bank Conference "The Dynamics of Illicit Flows from Developing Countries" on September 14-15, 2009.

Furceri, D., Jalles, J. T. (2016), "Fiscal Stabilization: Determinants and Effects", IMF Working Paper (forthcoming)

Giorno, C., Richardson, P. and P. Van den Noord (1995), "Estimating Potential Output, Output Gaps and Structural Budget Balances", OECD Economics Department Working Papers 24

Girouard, N. and C. Andre (2005), Measuring Cyclically-Adjusted Budget Balances for the OECD Countries, OECD Economics Department Working Papers 434.

Granger, C.W.J. and T. Terasvirta (1993). "Modelling Nonlinear Economic Relationships". Oxford University Press.

Hindrichs, H.H. (1966) "A general theory of tax structure change during economic development", Harvard Law School International Tax Programme.

IMF (2016), "Senegal: Reformes d'administration douanière en lien avec l'informatisation et l'interconnexion des services", IMF Fiscal Affairs Department Technical Assistance Report, July 2016

Jalles, J. T. (2016), "Tax Buoyancy in Sub-Saharan Africa: An Empirical Exploration", mimeo.

Khan, A., Khwaja, A., and Olken, B. (2014), "Tax Farming Redux: Experimental Evidence on Performance Pay for Tax Collectors", mimeo.

Keen, M., Mansour, M. (2009), "Revenue Mobilization in Sub-Saharan Africa: Challenges from Globalization". IMF Working Paper WP/09/157, International Monetary Fund.

Keen, M., Simone, A. (2004), "Tax Policy in Developing Countries: Some Lessons from the 1990s and Some Challenges Ahead". In Gupta, S., Clements, B., Inchauste, G. (eds), Helping Countries Develop: The Role of Fiscal Policy. International Monetary Fund.

Kuewumi, M. (1996), "A Critique of Tax Incentives", Nigeria Tax News Journal, 2(1), April.

Kusi, N. K. (1998), "Tax Reform and Revenue Productivity in Ghana", AERC Research Paper Number Seventy-four. Nairobi: AERC

Mahdavi, S. (2008). The Level and Composition of Tax Revenue in Developing Countries: Evidence from unbalanced panel data. International Review of Economics and Finance, 17,607-617

Mello, L. and Jalles, J. T. (2016), "The Elusive Quest for Inclusive Growth: What Shapes it?", OECD Working Paper Series (forthcoming).

Musgrave, R.A. (1969), "Fiscal systems". New Haven, CT: Yale University Press.

Norregaard, J. (2014), Taxing Immovable Property: Revenue Potential and Implementation Challenges. IMF Working Paper WP/13/129, International Monetary Fund.

Osoro, N.E. (1993), "Revenue Productivity Implications of Tax Reform in Tanzania". Research Paper No. 20, Nairobi; African Economic Research Consortium.

Osoro, N.E. (1995), "Tax Reforms in Tanzania: Motivations, Directions and Implications". Research paper No. 38. Nairobi: African Economic Research Consortium.

Pesaran, M. H. and Smith, R. P. (1995), "Estimating long-run relationship from dynamic heterogeneous panels", Journal of Econometrics, 68, 79-113.

Petit, P. and Jalles, J.T. (2016), "Reforms to Mobilize Revenue in Senegal: Lessons from six emerging countries", in The Path to an Emerging Economy Status: What Senegal and Other LICs need to do?, IMF Publishing (forthcoming)

Stotsky, J. G., Wolde-Mariam, A. (1997), "Tax effort in sub-Saharan Africa". IMF Working Paper WP/97/107, International Monetary Fund.

Tanzi, V. and Zee, H., 2000, 'Tax policy for emerging markets: developing countries', Working Paper WP/00/35, Washington, D.C.: International Monetary Fund

Upender, M. (2008), "Degree of tax buoyancy in India: an empirical study", International Journal of Applied Econometrics and Quantitative Studies, 5(2).