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MILLENNIUM CHALLENGE CORPORATION
UNITED STATES OF AMERICA

SENEGAL CONSTRAINTS ANALYSIS REPORT

A Diagnostic Study of the Senegal Economy, Identifying Binding Constraints to Private Investments and Broad-based Growth

FINAL REPORT

An Analysis Prepared by the Government of Senegal and the Millennium Challenge Corporation of the United States of America, for the Development of a Millennium Challenge Compact

March 2017


SENEGAL
MAURITANIA
NORTH ATLANTIC OCEAN
National capital
Regional capital
Town, village
Airports
International boundary
Regional boundary
Main road
Secondary road
Other road or track
Railroad
SAINT-LOUIS
LOUGA
MATAM
DIOURBEL
THIÈS
DAKAR
FATICK
KAOLACK
TAMBACOUNDA
KOLDA
ZIGUINCHOR
GAMBIA
GUINEA-BISSAU
GUINEA
MALI
Dakar
Banjul
Saint-Louis
Louga
Matam
Thiès
Diourbel
Fatick
Kaolack
Tambacounda
Kolda
Ziguinchor
Rosso
Dagana
Richard-Toll
Podor
Ndiayène
Haïré Lao
Bogué
Kaédi
Aleg
Mbout
Thilogne
Lagbar
Mpal
Léona Ndiaye
Mbeulleukhé
Koki
Kébémèr
Daraa
Linguère
Tiokougne Peul
Darou Khoudos
Darou Mousti
Mékhé
Tivaouane
Kayar
Touba
Bambey
Mbaké
Gassane
Tièl
Vélingara
Fourdou
Mamâri
Sélibaby
Bakel
Gabou
Rufisque
Popenguine
Mbour
Joal-Fadiout
Gossas
Guinguinéo
Payar
Naye
Kayes
Kaffrine
Niahène
Kolomba
Bala
Goudiri
Sadiola
Koumpentoum
Koussanar
Koungheul
Nganda
Ndofane
Sakone
Keur Madiabel
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Karang
Maka
Dalafi
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Kerewan
Georgetown
Missira
Mansa Konka
Basse Santa Su
Dialakoto
Kalagi
Gunjur
Diouloulou
Bounkiling
Médina Gounas
Khossanto
Bignona
Diana Malari
Mako
Saraya
Sédhiou
Tanaf
Goudomp
Farim
Kédougou
Diembéreng
Siganar
São Domingos
Cacheu
Bissorã
Gabú
Koundara
Kali
SENEGAL
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Gambie
Falémé
Lac de Guier
Lac Rkiz
Vallée du Ferlo
Vallée du Mboune
Saloum
Sine
Casamance
Soungrougrou
Koulountou
Sandougou
Niéri Ko
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
0 25 50 75 100 km
0 25 50 75 mi

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Acronyms and Abbreviations

AATR	Autonomous Agency of Road Works
AfDB	African Development Bank Group
AGOA	United States African Growth and Opportunity Act
ANACIM	*Agence Nationale de l'Aviation Civile et de la Météorologie du Sénégal*
ANIDA	*Agence nationale d'insertion et de Développement agricole*
ANSD	*Agence Nationale de la Statistique et de la Démographie*
APIX	*Agence de Promotion des Investissements et Grands Travaux*
BCEAO	Central Bank of West African States
BM	The World Bank
CA	Constraints Analysis
CAHF	Centre for Affordable Housing Finance in Africa
CFA	*Communauté Financière Africaine*
DBP	Distortionary business policies/policy environment
DFS	Decentralized Financial Systems (DFS)
DGCPT	*Direction Générale de la Comptabilité Publique et du Trésor*
DGID	*Direction générale des Impôts et des Domaines*
DOS	Department of State
DPEE	*Direction de la Prévision et des Etudes Economiques*
DPRE	*Direction de la Planification et de la Réforme de l'Education*
ECA	Economic Commission for Africa
ECOWAS	Economic Community of West African States
ESAM	Senegalese Household Survey
ESPS	*Enquête de suivi de la pauvreté au Sénégal*
EROS	Earth Resources Observation and Science Center
FCFA	*Franc de la Communauté Financière Africaine*
FDI	Foreign Direct Investment
FSIPP	Fund for Securing Imports of Petroleum Products
FY	Fiscal Year
GCB	Global Corruption Barometer
GDI	Gender Development Index
GDP	Gross Domestic Product
GETR	Global Enabling Trade Report
GFC	Geospatial and Farming Systems Research Consortium
GFCF	Gross fixed capital formation
GIABA	Inter-governmental Action Group against Money Laundering in West Africa
GII	Gender Inequality Index
GNI	Gross National Income
GFCF	Gross fixed capital formation
GIE	Economic interest group
GOS	Government of Senegal
KIBS	Knowledge Intensive Business Services
HRV	Hausmann, Rodrik and Velasco
ICS	Chemical industries of Senegal
IFS	International Financial Statistics
IMF	International Monetary Fund
INTRACEN	International Trade Centre
IOM	International Organization for Migration
LGAF	Land Governance Assessment Framework
MCA	Millennium Challenge Account

MCC	Millennium Challenge Corporation
MDGs	Millennium Development Goals
MFIs	Micro Financial Institutions
NTMs	Non-Tariff Measures
OECD	Organization for co-operation and economic development
OHADA	Organization for the Harmonization of the Business Law in Africa
PAPIL	*Projet d'Appui à la Petite Irrigation Locale*
PASEC	*Programme d'Analyse des Système Educatifs de la CONFEMEN*
PNAS	Proceedings of the National Academy of Sciences of the United States
PNBSF	*Programme National de Bourse de Sécurité familiale*
PRSP	Poverty Reduction Strategy Paper
PSE	Emerging Senegal Plan *(Plan Senegal Emergent)*
PUDC	*Programme d'Urgence de Développement Communautaire*
RAC	*Règlement d'assainissement collectif*
RGPHAE	*Recensement Général de la Population et de l'Habitat, de l'Agriculture et de l'Elevage*
RGPH	General Census of the population and the habitat
SME	Small and medium-sized companies
SME	Small and average industries
SAP	Structural Adjustment Program
SAR	Senegal Refining Company *(Société Africaine de Raffinage)*
SENELEC	Senegalese National Electricity Corporation
SSA	Sub-Saharan African
TCN	Title of debt security
TFP	Total Factor Productivity
TVET	Technical Vocational Education and Training
UCAD	University of Cheikh Anita Diop
UCF-MCA	*Unité de Coordination de la Formulation du Millennium Challenge Account*
WAEMU	West African Economic and Monetary Union
UMC	Universal Medical Coverage
UNECA	United Nations' Economic Commission for Africa
USGS	U.S. Geological Survey (USGS)
WAEMU	West African Economic and Monetary Union
WBDB	World Bank Doing Business
WBES	World Business Environment Survey
WBES	World Bank Enterprise Surveys
WDI	World Development Indicators
WGI	Worldwide Governance Indicators
WEF	World Economic Forum
XOF	CFA Franc Currency (BCEAO)

CHAPTER 1: EXECUTIVE SUMMARY

1.1. INTRODUCTION

Senegal offers a stable political environment, relatively good infrastructure, strong institutions and a favorable geographic position with growing opportunities for foreign investment. The country has developed and implemented three generations of Poverty Reduction Strategy Papers (PRSPs). Senegal is pursuing an ambitious development plan, the "Plan Senegal Emergent" (Emerging Senegal Plan or "PSE"), which includes a series of economic reforms and increasing private investment in strategic sectors with the goal of increasing real GDP growth to an average of 7.1% from 2014 to 2018. The vision under the PSE is to lead the country on a path that is intended to preserve the country's environment and natural resources, while at the same time working with the private sector to promote strong and inclusive growth and job creation. The Government of Senegal (GOS) is implementing reforms in the energy sector, higher education and the land tenure system, in order to improve Senegal's attractiveness for foreign investment. Senegal also has ambitions to build on its position as a regional business hub with relatively good transportation links to become a regional center for logistics, services and industry.

According to the latest World Bank's Country Overview on Senegal, *in the year 2015, Senegal's macroeconomic performance was strong with a 6.5% growth rate which was last achieved in 2003.*[1] *This performance is remarkable given the depressed global environment that has contributed to many African countries registering a marked slowdown in their economic activities. As a result, Senegal was the second fastest growing economy in West Africa, behind Côte d'Ivoire.*

The main drivers of growth were higher private sector demand, stimulated by lower energy and transport prices, as well as the ambitious public investment program carried out by the government, up by almost 0.4% of GDP in 2015. At the sector level, services remained the engine of growth, accounting for over one third of the economic expansion, while the industry's contribution increased to approximately 23% thanks to a solid performance in the chemical industry and construction sector. The agricultural sector accounted for almost 34% of GDP growth in 2015 thanks to good rainfall and various targeted government programs in support of rice production and horticulture value chains.

Most recent studies conducted that have identified several constraints related to the "business environment" include: PSE (2014); IMF (2010, 2012, 2014, 2016); World Bank Doing Business (WBDB 2016, 2015, 2014). According to the World Bank's "2016 Doing Business Report" the average period of time required for a business start-up in Senegal in 2015 was 91 days. Senegal continues to deregulate and streamline business regulation with the assistance of the international donor community. The business environment improved slightly in 2016 (85 days to start up a business). However, an unfavorable investment climate, costly energy, and weak governance systems have prevented the private sector from stimulating the economy. Despite these efforts, Senegal faces several major economic and social challenges as it attempts to create a more democratic, accountable political system and an economic policy regime that can foster greater prosperity for a broader segment of its population. With an average GDP not keeping pace with a population growth of 2.9%, Senegal urgently needs growth, jobs and the capacity to produce and manufacture a greater diversity of value-added goods. External shocks and natural disasters have also slowed growth and increased the vulnerability of the entire economy.

[1] World Bank, Senegal Overview, http://www.worldbank.org/en/country/senegal/overview, April 21, 2016 and accessed on October 24, 2016

There are great challenges: liberalization is constrained by a large public sector with strong pressure on social safety nets, and GOS services. The DOS Mission Performance Plan of FY 2015 for the U.S. Mission to Senegal states: "…Rapidly-growing Dakar, the capital, is a privileged city-state in a country where up to two-thirds of the people live in poverty. Nationwide, 50% of young men have no jobs, 60% of the people cannot read, 65% of girls are not in school, 74% of the countryside has no electricity, low access and high cost of finance, and wide disparities between urban and rural areas on standards of living have barely improved in 20 years. The young nature and the high level of population growth represent both a risk and an opportunity for growth and stability".

A favorable domestic enabling business environment is crucial for current and potential exporters. The business environment involves several aspects and includes all the factors that positively affect investment feasibility and profitability, including, for instance: an effective judicial system, an efficient regulatory environment, the availability of skilled and specialized workers, the accessibility of reliable information on procedure and fees for licenses, and the burden of formal procedures to start a business. The 2016 World Bank's Doing Business places Senegal 153rd out of 189 in the world in the overall ease of doing business. The ranking is determined on the basis of the ease of doing business in the nine stages that characterize an entrepreneurial project, namely: starting a business, dealing with construction permits, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and closing a business. The survey also shows that the number of licenses, permits and approvals needed by businesses and the time taken to obtain them are expensive and time consuming.

1.2 BACKGROUND OF THE SENEGAL COMPACT II

In fiscal year (FY) 2009, Senegal was selected as an eligible MCC partner country and developed a $540 million compact which entered into effect in September 2010 and was successfully completed in September 2015. This first compact was aimed at reducing poverty and increasing economic growth by unlocking the country's agricultural productivity and expanding access to markets and services. More specifically, Senegal's first compact program (Senegal Compact I) focused on improving road transport and irrigation for agriculture. Senegal was reselected as eligible to develop a second compact in December 2015. The country is one of the strongest performers on MCC's eligibility scorecard, passing 14 of the 20 indicators and scoring in the 96th percentile on the indicator for control of corruption.

MCC's compact development process begins with a diagnostic analysis to identify a country's binding constraints to economic growth (the "Constraints Analysis"). Completion of the Constraints Analysis and agreement on binding constraints, as well as completion of related public consultations and initial sector assessments, represent a critical, initial milestone in MCC's compact development process.

The methodology that grounds this analysis provides a structured and more objective approach to diagnose, at a country-level, key factors constraining private investment in economic activity that reduces poverty. A series of economic tests and analyses, cross-country benchmarking and comparisons, and information gathered through nationwide consultations with stakeholders, technical and qualitative focus groups workshops, and interviews with over 410 participants across Senegal in July/August 2016, have all informed this analysis. A list of all contributing agencies and stakeholders who reviewed, validated or provided input into the analysis can be found in Annex 2.

Since May 2016, a technical team comprised of representatives of the Government of Senegal (GOS), through the *Unité de Coordination de la Formulation du Millennium Challenge Account* (UCF-MCA*)*, the Ministry of Economy and Finance (MEF), students from the University of Cheikh Anita Diop (UCAD), and the Millennium Challenge Corporation (MCC) have been collaboratively conducting the analysis requirements for the development of a compact program with the Millennium Challenge Corporation (MCC).

To undertake the Constraints Analysis (CA), the Government of Senegal, through the UCF-MCA and the Ministry of Economy and Finance (MEF), MCC and students from University of Cheikh Anita Diop (UCAD), conducted research to identify the binding constraints to growth and investment from May – September 2016. To ensure that the analysis incorporated a diversity of perspectives and information, the technical teams incorporated the analysis of international and national quantitative statistics from the *Agence Nationale de la Statistique et de la Démographie* (ANSD) and specific GOS agencies, completed an extensive literature review, and facilitated focus groups and interviews with over 400 stakeholders including residents and firms in Dakar, as well as three other regions of Senegal. The findings of the CA were reviewed by a technical peer review committee in Senegal, comprised of experts across government and donor partners. The team also solicited input from MCC's Senior Directors and Practice Leads.

The CA methodology is based on the Growth Diagnostics approach developed at Harvard University in 2005. [2] The goal of the analysis is to use a systematic, data-driven approach to determine which factors of a country's economy are the greatest inhibitors to private investment in order to identify the binding constraints to economic growth. The constraint analyses also includes an assessment of the gender and social dynamics that affect inclusion and poverty reduction, which are included in the context above and in the section on social context and gender considerations that follows.

To more fully understand the private sector experiences around constraints, MCC contracted Dalberg Associates to provide contextual private sector evidence and information. Dalberg Associates identified industries that could drive economic growth using several criteria – the present and potential impact on employment creation, contribution to GDP growth, and export growth, etc. Using these illustrative industries, they examined the same economic factors outlined in the CA methodology to identify specific constraints experienced by these firms, providing insights into the country's identified constraints. Dalberg Associates also supported a political economy analysis of Senegal, and assessed the extent to which constraint areas were major barriers to the development of specific value chains in each sector and also identified the potential opportunities for women's inclusion in certain subsectors. A more detailed description of this integrated process is further discussed in the next Section 1.5.

The Compact Development process has a number of milestones, the first of which is the Constraints Analysis (CA). The CA conducted for the purpose of developing a Compact with the MCC does not seek to identify several areas for program intervention. It seeks to identify the most critical problem, or between two to four of the most critical problems, with a view to concentrate efforts to address such problems. This document summarizes the key findings of the constraints to growth analysis (CA) resulting from this inclusive consultative process which included all sectors of society and all key stakeholders in the sectors examined. To ensure that the analysis

[2] MCC's Guidelines for Conducting a Constraints Analysis are available here: https://www.mcc.gov/resources/doc/compact-development-guidance-chapter-2

incorporated a diversity of perspectives and information, the technical team undertook an analysis of the national and international qualitative statistics from the *Agence Nationale de la Statistique et de la Démographie* (ANSD) and other Government of Senegal (GOS) agencies. Through these agencies, the technical team performed a broad review of multiple general and Senegal-specific literatures through focus workshops and interviews with residents and firms in areas outside the Dakar capital.

Stakeholders consulted included local authorities, private sector entities, civil society leaders and representatives of civic associations and women's groups. The consultations were inclusive and collaborative and included questions specific to the private sector, as well as gender inclusive questions. UCF-MCA conducted validation workshops in late September and early October 2016 with the goal of ensuring widespread engagement and consensus on the binding constraints between GOS agencies, private sector entities, civil society organizations, and donors and international organizations in the compact development process. Following the validation workshops, UCF-MCA will present the final findings of the study to the GOS cabinet and will review and refine each binding constraint. A final report and detailed findings shall be published online on the GOS website in early 2017.

Using the Hausmann, Rodrik and Velasquez (2005) [3] methodology developed at the Harvard Kennedy School, the present study identifies these constraints and their impacts leading up to the present reform efforts under the *Plan Senegal Emergent* (PSE). This study assumes that private sector investment and entrepreneurship are ultimately the keys to sustained growth. The methodology starts from the widely accepted achievable goals of economic growth and structural transformation of the PSE: to improve the competitiveness of sectors directly and indirectly related to exports, and to facilitate the alleviation of barriers to entry/exit of firms and the output of new sectors.

1.3 ORGANIZATION OF THE REPORT

The report provides the factual and contextual underpinnings to the diagnostic, as well as a detailed presentation of the evidence. The study examines particular factors and aspects that can potentially drive growth and is based on comprehensive qualitative and quantitative analysis, using international as well as local sources and statistical data.

In the second part the CA further examines whether the low *appropriability*[4] hinders economic growth, by analyzing the macro and micro climate in Senegal, with all its components. The CA also analyzes Senegal's financial sector, taking into consideration both foreign and local finance, access to finance, level of national savings, etc. Overall the analysis closely follows the growth diagnostics model and constructs the growth diagnostics tree. Local context and specific features of Senegal's economy at its current level of development are also taken into account where appropriate. Each part of the CA consists of comprehensive analysis of the relevant factor with

[3] World Bank http://siteresources.worldbank.org/INTDEBTDEPT/Resources/468980-1218567884549/mindbook.pdf

[4] The HRV Model in the next section defines *appropriability* as those macroeconomic and microeconomic risks that reduce an investor's expected share of overall investment returns.

the conclusion identifying whether this factor constitutes a constraint for growth and development of the country.

The study demonstrates that despite the progress achieved in recent years, there are areas of the economy which require increased attention and efforts as they constitute constraints to further growth and development. If not addressed in due course and in an effective manner, these constraints will hinder growth and, moreover, will undermine achievements of recent years.

The results of the constraints analysis were validated with key stakeholders via workshops and focus groups which are shown in Annex 2.

The **binding areas** include **energy, distortionary business policies/policy environment (DBP) for microeconomic risks,** and quality of **human capital, finance, transport,** and **land.** The findings of the analysis identified constraints divided into binding and non-binding ones. These are grouped in two chapters: (a) severe but non-binding problem areas, and (b) non-binding areas.

On the other hand, constraints identified as **non-binding** include areas such as geography, macroeconomic and fiscal environment, import/export infrastructure, innovation (for market failures and communications), human capital (for health) water infrastructure (for irrigation), and crime and insecurity.

To summarize, the analysis in this study is organized as follows:

Chapter 1 provides an executive summary and background context of the evidence presented in the analysis, summarizing the most pressing issues facing private enterprise and growth in the economy. The chapter also presents the analytical framework and methodology; as well as the key sources of data utilized herein.

Chapter 2 presents an introductory overview of growth history and performance of the Senegalese economy, covering four time horizons, as a context for subsequent analysis. The chapter also frames the diagnosis and provides context on recent economic trends and the main weaknesses in Senegal's recent economic performance. This chapter examines the macroeconomic risks against the backdrop of Senegal's historical growth performance with respect to areas such as total factor productivity, export diversification and quality, and perceived constraints in the informal sector.

Chapter 3 discusses the binding problem areas constituted by the inadequate energy infrastructure as a major impediment to accelerated growth and the resulting significant bottlenecks the economy faces with the associated electricity costs and insufficient electricity production.

Chapter 4 assesses risks to receiving returns on investment that occur at both the macroeconomic and microeconomic levels. Risks at the micro level arise from issues like labor market regulations, import barriers, insecure contracts enforcement and property rights, and high tax burdens. This chapter shows that micro-level risks to appropriability are a critical binding constraint to investment and growth in Senegal.

Chapter 5 discusses those severe, but non-binding areas and analyzes their risks and constraints to growth which, either needs to be addressed through some form of intervention, or will gradually

be eradicated when other related factors are addressed or the existing tendency of development and growth in the sector continues. These constitute constraints for further growth and development and include human capital, access to finance, transportation infrastructure, and access to land.

Chapters 6 through 14 discuss the areas that are not constraining as well as particular results, factors and aspects according to the Growth Diagnostics Model as shown on the analytical tree (see Figure 1-1, page 18)., with more detailed conclusions and general policy recommendations on the binding constraints identified. These chapters also discuss non-constraint areas such as geography, macroeconomic and fiscal environment, innovation, information communication and technology, human capital (for health) water infrastructure (for irrigation), and crime and insecurity.

1.4 CONSTRAINTS ANALYSIS METHODOLOGY

1.4.1 The "HRV" Model

Because of MCC's mandate to focus on growth as the vehicle to reduce poverty, the process of developing a compact begins with a diagnostic study to identify the most binding constraints that impede private-sector led investment and entrepreneurship in Senegal and describe relevant social dynamics that affect poverty and inequality. Based on the findings of this study, MCC and the GOS are expected to develop projects that attempt to resolve or alleviate constraints to growth in Senegal in a way that promotes inclusivity and equal participation by all members of society to the fullest extent possible.

The Constraints Analysis (CA) is conducted for the purpose of developing a Compact with the MCC and does not seek to identify several areas for program intervention. It seeks to identify the most critical problem, or between two to four of the most critical problems, with a view to concentrate efforts to address such problems.

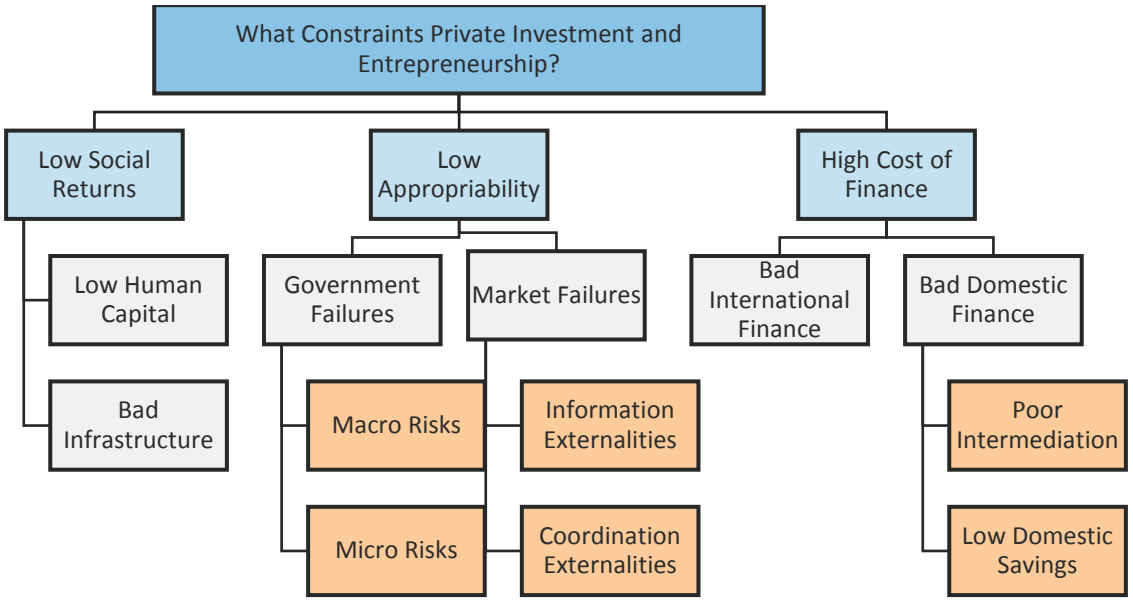
The CA methodology that grounds this analysis provides a structured and more objective approach to diagnose, at a country-level, key factors constraining private investment in economic activity that reduces poverty. The analysis utilizes a series of economic tests and analyses, cross-country benchmarking and comparisons, and information gathered through qualitative focus groups and interviews with over 410 individuals throughout Senegal in August 2016, to identify the most "binding constraints" that deter private investment and restrict the potential for long-term economic growth, as well as critical factors that affect economic inclusion and equal opportunity.

The CA builds on the premise that private investment, both domestic and foreign, represents the primary engine of long-run, sustainable, and poverty-reducing economic growth. Countries seeking to accelerate growth, then, are faced with the fundamental question that lies at the center of the CA exercise: "What constrains private investment and entrepreneurship?" The boxes in the second row of Figure 1.1 suggest two distinct alternative answers to this question: "Low returns to economic activities" and "High cost of finance." If evidence suggests the latter is true (i.e., the cost of capital is high), the tree presents a series of issues that need to be considered to understand the systemic explanations. This approach helps keep the focus on problem identification and prevents the premature leap to possible solutions (e.g., subsidized credit) that would not address the underlying causes of expensive capital. The CA tree also examines whether low returns to economic activities explains the current levels of private investment. In general, using the hierarchy of Figure 1.1 as a guide, we consider in turn the questions suggested

there, working our way down the tree to determine which of the possible explanations are most responsible for low investment and, in turn, low growth rates.

The CA methodology is based on the Growth Diagnostics approach developed at Harvard University in a 2005 working paper by Ricardo Haussmann, Dani Rodrik, and Andrès Velasco (HRV). [5] The methodology was developed to help countries and other actors prioritize development activities, among many competing needs, by providing a rigorous methodology for identifying those areas that are most constraining to private-sector led investment. MCC has adapted this general methodology by explicitly incorporating into its constraint analyses an assessment of the gender and social dynamics that affect inclusion and poverty reduction. The CA methodology utilizes a heuristic tree, as shown in Figure 1.1 below, to organize and direct the analysis.

Figure 1-1: Growth Diagnostic Tree



Source: Adapted from Hausmann, Klinger and Wagner (2008)[6]

1.4.2 Understanding the Diagnostic Tests

[5] As HRV point out, all countries face an array of economic and development challenges, but not all such challenges are equally restrictive to growth. Because reform and investment efforts are limited by implementation capacity, political space, and financial resources, focusing on alleviating those constraints that limit growth the most will have the greatest impact. Moreover, because it is not possible to quantify all of the dynamic or indirect effects of loosening a given constraint, addressing those constraints that are the most directly binding provides greater assurance of a positive impact on growth. MCC's Guidelines for Conducting a Constraints Analysis are available here: https://www.mcc.gov/resources/doc/compact-development-guidance-chapter-2

[6] Haussmann, Klinger, and Wagner (2008). "Doing Growth Diagnostics: A 'Mindbook.' CID Working Paper No. 77. Available at: http://siteresources.worldbank.org/INTDEBTDEPT/Resources/468980-1218567884549/mindbook.pdf, accessed 21 September 2016.

A Constraints Analysis (CA) involves asking and answering a sequence of diagnostic questions that highlight the "root causes" that constrain investment. Figure 1.1 above presents a hierarchical framework or "tree" to organize and motivate the questions driving the CA. Answering those questions involves: (1) selecting and formulating the diagnostic questions in a sensible way for the country at hand; (2) researching and marshaling key evidence and data that shed light on the questions; and (3) answering the questions based on the balance of such evidence.

Analytical teams undertaking a CA use literature, stakeholder interviews, qualitative information, and quantitative analysis to assess the likelihood that areas in the tree are the greatest impediment to private sector investment and entrepreneurship. The analysis uses international comparison benchmarking and a series of analytical tests to arrive at conclusions to ensure that the results are based firmly in high-quality evidence. Tests for a constraint to growth are:

1. **High Price**: the (shadow) price of the constraint should be high
   This principle is easiest to apply when market prices for the constrained resources are readily available. Common examples would include high lending interest rates as an indicator of an important constraint on finance, or high market wages indicating scarcity of certain types of workers or skills.

2. **Impulse-Response**: movements in the constraint should produce significant movements in the objective function
   Illustrations of this principle could include investment volumes that track closely remittance inflows, or labor productivity that varies in accordance with key indicators of workers' health outcomes.

3. **Circumvention**: agents in the economy should be attempting to overcome or bypass the constraint
   An important example of this principle would be a large informal sector as an indicator of microeconomic obstacles to business activity (e.g., "red tape"). Another, more sector-specific example could be a significant fraction of enterprises purchasing diesel generators in the face of unreliable or expensive grid-based electricity supplies.

4. **Camels-Hippos**: agents less intensive in that constraint should be more likely to survive and thrive, and vice versa. (i.e. Economic agents that rely heavily on the constraining factor are not able to thrive) [7]

1.5 THE BINDING CONSTRAINTS TO GROWTH IN SENEGAL

1.5.1 Preliminary Considerations

[7] This is known as the "camels and hippos" test. In the same way one might expect to observe camels and not hippos in environments lacking water, one should expect to observe economic actors thrive that do not heavily rely on a constraining factor, while economic activities that are intensive in the factor are missing or stagnant.

To more fully understand Senegal's private sector experiences around constraints, MCC contracted Dalberg Associates[8] to provide contextual private sector evidence and information. Dalberg Associates identified sectors of growth opportunity using several criteria– the present and potential impact of constraints on employment creation, contribution to GDP growth, and export growth to improve the trade balance. Annex 3 provides the summary findings of the Dalberg Associates assessment.

With an initial focus on agro-processing and agricultural products – selected because of its alignment with the GOS Emerging Senegal Plan (PSE) and the potential for poverty-reducing growth - Dalberg Associates assessed the extent to which constraint areas were major barriers to the development of specific value chains in each sector. Table 1-1 below summarizes the results of this rapid analysis for agro-processing to illustrate their approach.

Table 1- 1: Constraints in agro-processing value chains

	Access to finance: Firms struggle to access finance affordably and reliably	**Infrastructure:** Firms have unreliable water, energy, and road infrastructure	**Human Capital:** The workforce lacks adequate skills to fulfill key roles	**Market linkages:** The market is insufficiently developed to allow firms to build domestic and international relationships	**Market failures:** The market is uncompetitive with barriers that prevent firms from entering	**Micro risks:** Local firms cannot compete within the Senegalese market and lack incentives to invest in productivity
Rice	Major constraint	Major constraint	Minor constraint	Minor constraint	Minor constraint	Major constraint
Maize	Moderate constraint	Minor constraint	Major constraint	Moderate constraint	Minor constraint	Major constraint
Tomatoes	Moderate constraint	Major constraint	Moderate constraint	Minor constraint	Major constraint	Major constraint
Onions	Moderate constraint	Major constraint	Moderate constraint	Minor constraint	Minor constraint	Major constraint
Green Beans	Moderate constraint	Major constraint	Moderate constraint	Moderate constraint	Minor constraint	Major constraint
Bissap	Moderate constraint	Minor constraint	Moderate constraint	Major constraint	Minor constraint	Major constraint
Baobab	Moderate constraint	Minor constraint	Moderate constraint	Major constraint	Minor constraint	Major constraint
Mango	Moderate constraint	Major constraint	Moderate constraint	Moderate constraint	Minor constraint	Major constraint
Groundnut	Moderate constraint	Minor constraint	Minor constraint	Minor constraint	Major constraint	Major constraint
Sesame	Moderate constraint	Moderate constraint	Moderate constraint	Major constraint	Minor constraint	Major constraint

Legend — Minor constraint | Moderate constraint | Major constraint

Source: Dalberg Private Sector Analysis [Unpublished)

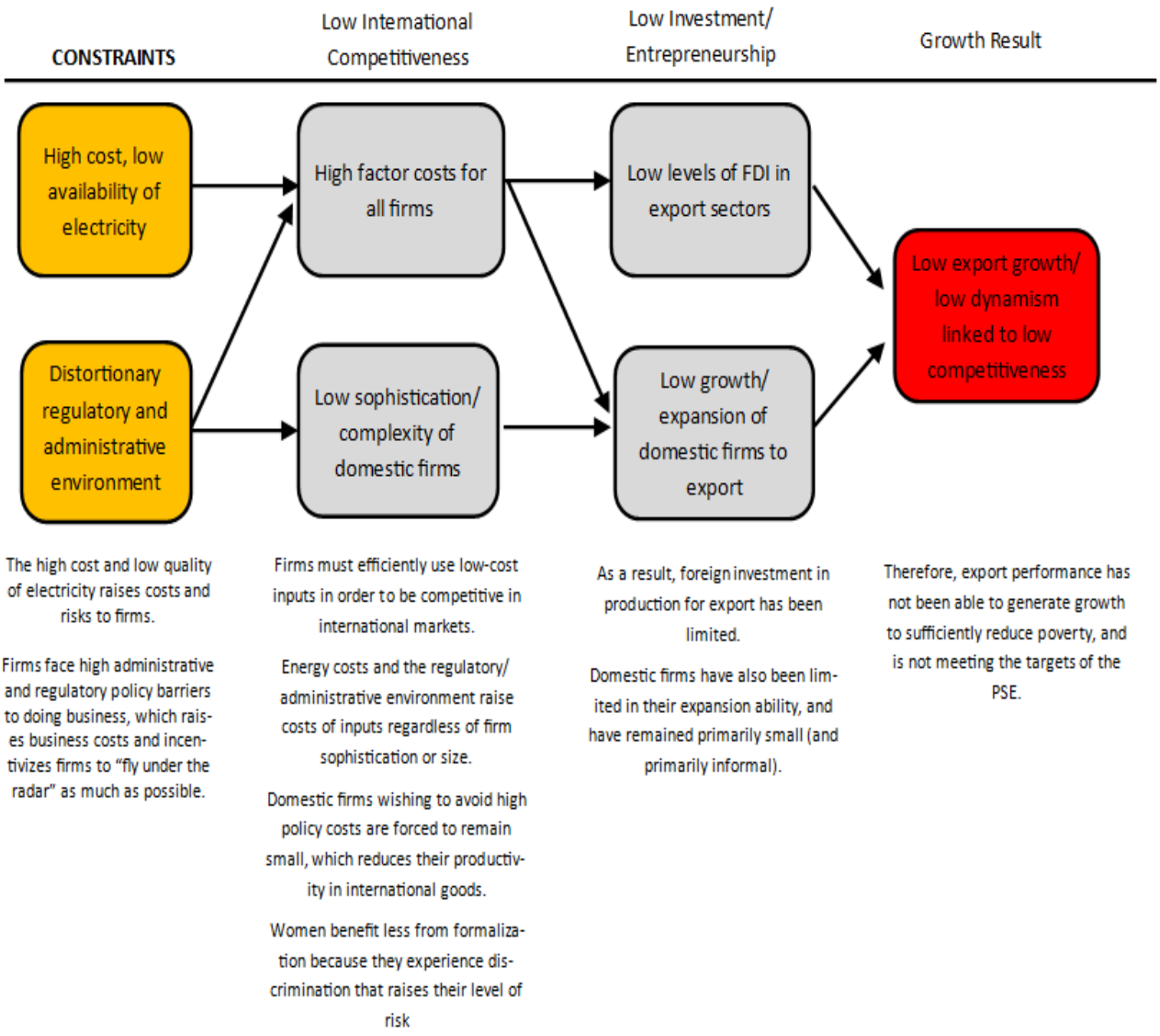
These sectors do not necessarily reflect sectors that MCC wishes to support. Rather, they were chosen so that the technical team could specify and contextualize the way in which constraint areas manifest themselves in sectors that have the potential to drive the kind of growth envisioned in the PSE and simultaneously reduce poverty. Dalberg Associates' analysis also identified the potential opportunities for women's inclusion in certain subsectors.

Overall, the Dalberg Associates analysis validates and adds context to the results from the HRV analysis, which take a more economy-wide perspective. Both analyses conclude that the logic of

[8] See Annex 3 for further details of the Dalberg Associates assessment findings.

the constraints is one in which high factor costs resulting from the low availability and high cost of electricity and the burden of legal, regulatory and administrative policy barriers reduce international competitiveness of foreign, exporting firms. In addition to high factor costs, the regulatory and administrative environment in Senegal encourage domestic firms to remain in the informal sector, and therefore less productive, which inhibits their growth and expansion either to direct export or to integration into larger supply chains.

Figure 1-2: Linking constraints to export-led growth and export dynamism in Senegal



Source: Authors

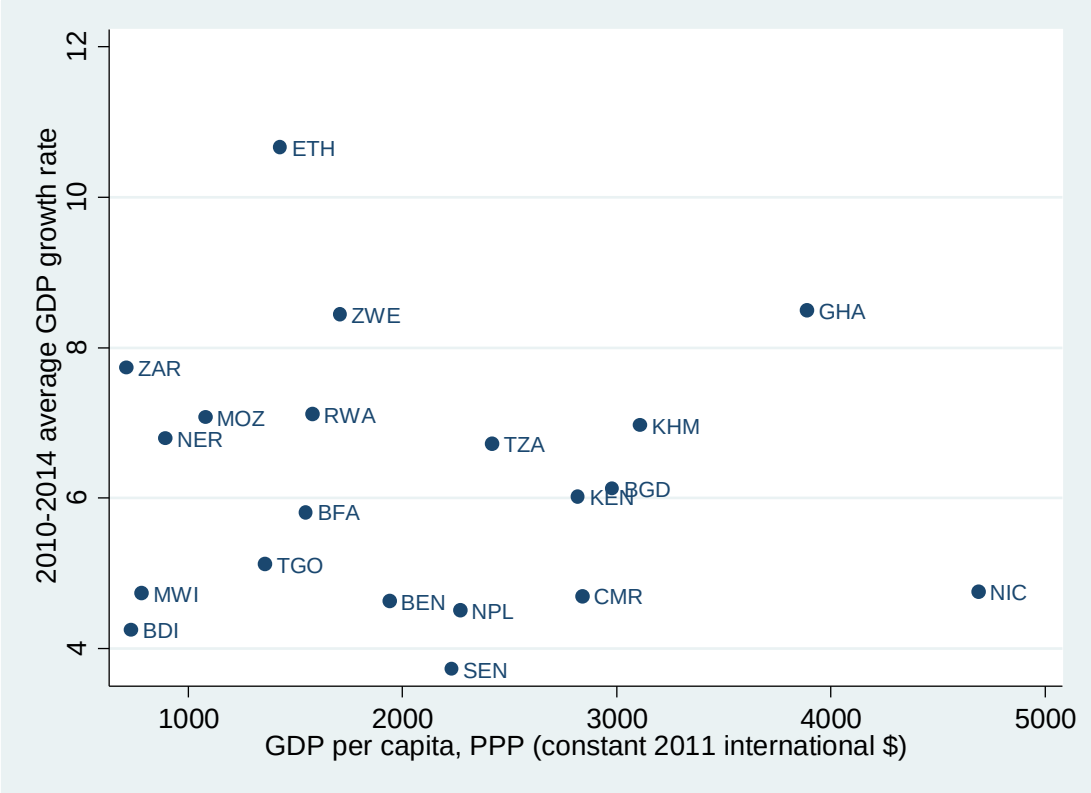
1.5.2 Choice of Comparators

The use of comparator analysis generally helps us to gauge the extent to which factors constrain private sector investments relative to countries that are somewhat similar to Senegal The technical team selected comparators (see the list in Annex 2) based on current levels of GDP per

capita, 5- and 10-year average GDP growth rates, and other dimensions of comparability. Annex 2 details the comparator list; the technical team agreed to compare Senegal against all low- and lower-middle income countries where data allowed, or use different comparators where warranted, such as with the West African Economic and Monetary Union (WAEMU) members, or other Sub-Saharan African countries.

One set of comparator countries that are mainly used in this report and which have generally a range of 5- and 10-year average GDP growth rate are shown in Figure 1-3 below.

Figure 1-3: Average GDP growth rate comparator countries



Source: WDI

1.5.3 Categorization of Constraints and Risks

Constraints are described as “Binding”, “Severe, but Non-Binding” and “Non-Binding”. Binding constraints are those which emerge from the four tests with generally strong positive results. A binding constraint should in theory significantly affect the long term growth of investment or employment and its relaxation should generally generate large impacts across sectors. The “Severe, But Non-Binding” constraints are those that may pertain to specific sectors, but not necessarily on the overall national economy (e.g. transport). Severe non-binding problems may also be areas for which there is strong evidence of major issues that affect the economy, but do not cause as much distortions as binding constraints (e.g. human capital or finance). Major binding constraints and those leaning to the binding-level constraints are those that remain significant in their impact on investment and/or poverty reduction.

1.6 SUMMARY OF EVIDENCE AND FINDINGS

The analysis carried out in this report seeks to present the evidence available from various data sources, to guide the diagnostic process. The differential diagnosis examines the data along the line of the four tests discussed in the Methodology Section 1.4 above. The following conclusions may be drawn from these analyses:

- Senegal has maintained a modest growth trajectory over the past decade averaging 3.7 percent in GDP growth over the period while population growth has averaged 2.9 percent, making real GDP per capita growth less than one percent on average during the last ten years. This trajectory needs to be dramatically increased to achieve the goal of the GOS Emerging Senegal Plan (PSE) which aims to increase the real GDP growth to an average of 7.1% from 2014 to 2018.

- Senegal's inputs are costly, and the business environment that firms operate in, at the economy-wide level, does not promote the efficient, productive use of resources. Senegal has high unit-labor costs which pose serious constraints to private investments and growth.

- Private returns to investments are generally low and vulnerable to a number of macroeconomic risks. Large companies have ways of insulating themselves against such risks.

- Social returns to private investments are low, particularly for domestic private enterprise with a large and growing informal sector. This is aggravated by poor access to and high cost of financing, a low level of supply of technical and entrepreneurial skills, a high level of transport costs, and a limited access to land.

- Administrative, regulatory and legal barriers are complex and burdensome, and they reduce foreign firms' profitability and competitiveness by raising the cost of inputs and increasing costs of regulatory compliance. Domestic firms are incentivized to remain small and unproductive rather than upgrade to modern and sophisticated modes of production.

- The business environment is notably hampered by poor investor protection, cumbersome procedures for paying taxes and registering property, inadequate supply of infrastructure, and difficulty accessing financing.

In addition to the **binding constraints** (**energy** and **microeconomic risks)**, the CA identifies quality of **human capital, finance, transport,** and **land** at the level of **severe but non- binding constraints** for growth in Senegal. The rest of the evidence suggests that electricity and microeconomic risks/business environment constraints may be more severe than transportation, finance and labor constraints. A summary of each constraint is provided below, with additional evidence presented for each of these constraints in their relevant chapter.

Areas such as macroeconomic and fiscal environment, import/export infrastructure, innovation (for market failures and communications), human capital (for health), water infrastructure (for irrigation), and crime and insecurity were identified as **non-binding constraints**.

1.6.1 Binding Constraints

The evidence reviewed via application of the Growth Diagnostics principles, identifies two binding constraints to broad-based private investments and economic activity in Senegal. These are the **high cost of energy** and the **microeconomic risks associated with Distortive Business Policy Environment.** Both of these constraints (1) reduce international competitiveness of foreign, exporting firms, and (2) encourage domestic firms to remain in the informal sector. Domestic firms are less productive, inhibiting their growth and expansion either to direct export or to integration into larger supply chains. The analysis also reveals four severe but non-binding problem areas – human capital, finance, transportation, and land.

1.6.1.1 Is a Lack of Adequate Energy Infrastructure a Binding Constraint to Growth?

Since the year 2000 electricity production has increased by approximately 7% annually and stood at 2.8 KW/h in 2012. As demand for electricity grows much faster than its supply, Senegal is facing serious problems. The national utility SENELEC lacks an efficient organizational structure and lacks access to funds for investments in power plants and transmission-lines in order to cope with increasing demand. Reserve capacity presently is insufficient, causing frequent (scheduled or unscheduled) outages of whole districts, while transmission losses, old thermal power plants and increasing oil prices result in high average production costs.

The cost of electricity is a binding constraint to economic growth in Senegal. The insufficient quantity and quality of electricity result in reduced productivity, output, and investment for businesses, less effective delivery of public and social services and diminished well-being and economic opportunity for households. The social costs are even higher when the subsidies the GOS provides to the sector are taken into account. Both price to consumers and social costs are high because more than 85% of energy supply in Senegal is oil based, with the remaining 15 percent obtained from hydropower. Access is also a problem but mostly in rural areas. The challenges facing the energy sector are related to growth as much as they are related to fiscal concerns. These challenges stem from an inefficient mode of electricity generation, transmission and distribution, coupled with controlled prices that mask the true costs of power generation. Benchmark electricity prices, or tariffs, are set below full cost recovery, giving rise to tariffs gaps and explicit producer and consumer subsidies.

According to the World Bank's 2016 Doing Business Report, getting a new electricity connection for a new business in Senegal requires seven procedures, takes 81 days, and costs almost 5700 times the average income.

1.6.1.2 Do Micro Risks and Distortions Pose a Binding Constraint to Growth?

The diagnostic tree examines risks to receiving returns on investment that occur at both the macroeconomic and microeconomic levels. At the macro level, risks may arise from fiscal or monetary policies that create imbalances and economic instability. Risks at the micro level arise from issues like insecure property rights, inability to access land, unpredictable and inefficient regulatory environment, high tax burdens, uncertainty in contracts, and high incidence of corruption. Whether at the macro or micro level, these risks all reduce an investor's expected share of overall investment returns, which the HRV Model terms *appropriability*.

The micro-level risks to appropriability are a critical binding constraint to investment and growth in Senegal. In particular, insufficient progress in policy reform implementation combined with strong expenditure pressures constrain investment and growth. The lack of adequate policies and institutional effectiveness (the ability of policies and government institutions to protect returns to

investment and promote the efficient provision of inputs to production) hinder attempts to remove these infrastructure constraints. They also create microeconomic risks that contribute to a large informal sector and constrain investment throughout the economy. The main domestic risk lies in insufficient progress in reform implementation combined with strong expenditure pressures. Senegal's government effectiveness, as measured by the World Bank's Governance Indicators, is slightly below average compared with lower and middle-income sub- Saharan countries and has been trending downward over the past decade. Senegal's micro risks revolve around taxes, import barriers, and labor market regulations. Despite significant recent reforms (see Table 1-2), according to the 2016 Doing Business Report[9] Senegal ranks 153/189 in ease of doing business.

Table 1- 2: The 10 top economies making reforms to ease doing business

Table 1-2 The 10 economies improving the most across three or more areas measured by Doing Business in 2014/15											
Economy	Ease of doing business rank	Reforms making it easier to do business									
		Starting a business	Dealing with construction permits	Getting electricity	Registering property	Getting credit	Protecting minority investors	Paying taxes	Trading across borders	Enforcing contracts	Resolving insolvency
Costa Rica	58			✔		✔		✔			
Uganda	122	✔		✔		✔					
Kenya	108	✔		✔	✔	✔					
Cyprus	47			✔		✔		✔		✔	✔
Mauritania	168	✔				✔			✔		
Uzbekistan	87	✔			✔	✔					
Kazakhstan	41	✔	✔		✔	✔	✔			✔	✔
Jamaica	64	✔	✔					✔			✔
Senegal	153	✔		✔	✔					✔	
Benin	158	✔	✔						✔		

✔ Areas of reforms
Source: Doing Business Report 2014/15, page 37

Table 1-2 above from the 2014/15 Doing Business Indicators (page 37) shows that Senegal is among the 10 top developing economies, showing the most notable improvement in performance. The other nine countries are Costa Rica, Uganda, Kenya, Cyprus, Mauritania, Uzbekistan, Kazakhstan, Jamaica, and Benin. Recently, Senegal has made starting a business easier by reducing the minimum capital requirement. SENELEC, the electricity utility in Senegal, has made getting a new connection less time-consuming by streamlining the review of applications and the process for the final connection, as well as by reducing the time needed to obtain an excavation permit. The utility also lowered the security deposit required. In addition, the GOS has made property transfers less costly by lowering the property transfer tax. Senegal also made enforcing contracts easier by introducing a law that regulates judicial and conventional voluntary mediation.

Despite these encouraging efforts, Senegal's import and customs regulations remain cumbersome and opaque, and they discourage the use of foreign inputs in production and limit international competition.

[9] Source: Doing Business Report (2016)
http://www.doingbusiness.org/~/media/GIAWB/Doing%20Business/Documents/Annual-Reports/.

Senegal ranks 187/188 in overall index of labor market regulation. Recent studies find strong links between labor market rigidity and allocative efficiency, firm size, and employment. One recent assessment communicated: *"Foreign investors have found it difficult to fire employees for just cause or malfeasance. Foreign firms are often sued in the Senegalese courts by terminated employees who are frequently awarded damages and placement in their former positions. Although these decisions are sometimes overturned on appeal, the appeals process is costly and time consuming. Foreign firms in Senegal often cite burdensome labor law and arbitrary rulings by courts on labor cases as their number one frustration in doing business in Senegal."* [10]

1.6.2 Severe, but Non-Binding Constraints

1.6.2.1 Does a Shortage of Human Capital Represent a Binding Constraint?

With regards to human capital, the study shows that unemployment patterns reflect poor internal education or imbalance between job supply and demand. According to the 2015 World Bank's Report, a remarkably large share of the working-age population (36 percent) is neither working nor attending school. This is observed among youth and adults, many of them educated, and both urban and rural populations are affected at a similar rate. The marginal economic autonomy of women contributes to, and is reinforced by, women's high fertility. High fertility rates (5.5 live births per woman) reduce women's labor force participation. Women's' inability to control economic decisions has impacts on human capital investments and access to credit. Education quality seems to be on par for Senegal's level of income. Regional test scores compare on average with other countries in the region. However, the formal education system is anecdotally focused on training future civil servants, bureaucrats and public officials. This translates to a low level of demand for schooling from individuals, but also results in a low level of entrepreneurial skill among those who attend. However, other indicators suggest Senegal's low level is adequate for current economic production. Though the supply of skilled labor in Senegal is low, this does not rise to the level of binding constraint because the demand for skilled labor is also low, given the country's level and sophistication of production.

1.6.2.2 Finance: Does Costly Finance Represent a Binding Constraint?

Senegal displays relative **financial** depth for its level of income, and is the most financially deep of the WAEMU member countries. Senegal has the lowest borrowing rate in WAEMU at 6.85% average and is second only to Cote d'Ivoire among WAEMU countries in terms of the average amount of new credit extended. Additionally, Senegal has seen a large expansion in credit to the private sector over time. Regarding access to finance, as the analysis shows, while there are significant asymmetries between access to credit for smaller, domestically-owned firms, no compelling evidence is found that access to finance is an overall constraint. This seems to be the result of the relatively low borrowing cost for firms that receive access and the weak relationship between indicators of financial access or depth and overall levels of investment or productivity.

[10] DOS Investment Climate Assessment, http://www.state.gov/e/eb/rls/othr/ics/2013/204727.htm

1.6.2.3 Is a Lack of Adequate Transportation Infrastructure a Binding Constraint to Growth?

Regarding **transportation infrastructure**, the analysis shows that much has already been done in this regard in Senegal in recent years. However, improvement has mainly affected international road quality, while the quality of the secondary roads remains insufficient. The analysis also has shown that the development of secondary roads is extremely important for regional development and for the decrease of disparities between the center and regions of Senegal. Nevertheless, some significant investments have been made in the development of road infrastructure, which may explain why less than 1% of firms surveyed cite the quantity or quality of road networks as the biggest barrier to their operations as reflected in the World Business Environment Survey (WBES). However, much of the problem related to high transport cost appears to be primarily policy-related, rather than infrastructure related. Despite these improvements, Senegal has not seen an overall increased level of investment or strong economic growth trends, indicating that, despite strong consequences for certain sectors (e.g., mining), domestic transport generally does not rise to the level of binding constraint. Overall, benchmark indicators show that roads in Senegal are of satisfactory quantity and quality, given the country's level of income, and do not indicate a binding constraint.

1.6.2.4 Does a Lack of Access to Land Represent a Binding Constraint to Growth?

About 30% of Senegal's arable land is devoted to cereals production. Studies indicate that this land is subject to a **poor land tenure system**. According to the 2016 World Development Indicators (WDI), when normalized by the size of the population, Senegal has relatively abundant arable land with an average of 264 hectares per 1000 inhabitants. This arable land per capita ratio in the last 5 years puts Senegal below the average within the Sahelian corridor. Against benchmark countries taken as a whole, the proportion of arable land in Senegal is well below the average. However, thin land markets in rural areas deter investment incentives, and poorly protected land rights for women contribute to major constraints they face in rural value chains. The WDI study shows that the number of enterprises perceiving land as a constraint is above the average. According to the 2016 Doing Business Report, Senegal scores worse than its comparators in cost of transfer and the quality of land administration. The analysis shows that, while being addressed by the GOS, there are critical issues in the land tenure system in Senegal. Issues that remain critical to rural land include high costs of land transfer and poor quality of land administration. However, large-scale horticulturalists and smallholder farmers surveyed recognized that they did not have formal and secure tenure to their land, but they felt safe in the security of their access to and use of the land under their control. In light of these reports, and given the low productivity of agriculture, the level of state involvement in key value chains in the agricultural sector, and the thinness of agricultural value chains in general in Senegal, land tenure and transaction mechanisms were not found to be binding.

1.6.3 Non-Binding Constraints

Areas such as macroeconomic and fiscal environment, import/export infrastructure, innovation (for market failures and communications), human capital (for health), water infrastructure (for irrigation), and crime and insecurity were identified as **not binding constraints**.

CHAPTER 2: OVERVIEW OF SENEGAL'S GROWTH AND DEVELOPMENT EXPERIENCE

2.1 COUNTRY SUMMARY

Senegal is a low income country located in West Africa on the Atlantic Coast. The country has about 14.3 million inhabitants, of which more than 60 percent are under 25 years of age, and only 3.5 percent are over 65. Comprising an area of 196,722 square kilometers and divided into 14 administrative regions, Senegal is highly urbanized: 43 percent of the population live in urban areas, and 49 percent of these are concentrated in Greater Dakar, the capital. Dakar has a concentration of about 4,545 people per square kilometer.

Senegal offers a stable political environment, relatively solid infrastructure, relatively strong institutions and a favorable geographic position with growing opportunities for foreign investment. The country has developed and implemented three successive Poverty Reduction Strategy Papers (PRSPs). Senegal is pursuing an ambitious development plan, the "Plan Senegal Emergent" (Emerging Senegal Plan or "PSE"), that includes a series of economic reforms and increasing private investment in strategic sectors with the goal of increasing real GDP growth to an average of 7.1% from 2014 to 2018. The vision under the PSE is to lead the country on a path that is intended to preserve the country's environment and natural resources, while at the same time working with the private sector to spur strong and inclusive growth and job creation. The Government of Senegal (GOS) is implementing reforms in the energy sector, higher education and the land tenure system, in order to improve Senegal's attractiveness for foreign investment. Senegal also has ambitions to build on its position as a regional business hub with relatively good transportation links to become a regional center for logistics, services and industry.

According to the latest World Bank's Country Overview on Senegal, *in the year 2015, Senegal's macroeconomic performance was strong with a 6.5% growth rate which was last achieved in 2003.*[11] *This performance is remarkable given the depressed global environment that has contributed to many African countries registering a marked slowdown in their economic activities. As a result, Senegal was the second fastest growing economy in West Africa, behind Côte d'Ivoire.*

The main drivers of growth were higher private sector demand, stimulated by lower energy and transport prices, as well as the ambitious public investment program carried out by the government, up by almost 0.4% of GDP in 2015. At the sector level, services remained the engine of growth, accounting for over one third of the economic expansion, while the industry's contribution increased to approximately 23% thanks to a solid performance in the chemical industry and construction sectors. The agricultural sector accounted for almost 34% of GDP growth in 2015 thanks to good rainfall and various targeted government programs in support of rice production and horticulture value chains.

Most recent studies conducted that have identified several constraints related to the "business environment" include: PSE (2014); IMF (2010, 2012, 2014, 2016); World Bank Doing Business (WBDB 2016, 2015, 2014). According to the World Bank's "2016 Doing Business Report" the average time required for a business start-up in Senegal in 2015 was 91 days. Senegal continues to deregulate and streamline business regulation with the assistance of the international donor community. The overall business environment improved slightly in 2016 (85 days to start up a

[11] World Bank, Senegal Overview, http://www.worldbank.org/en/country/senegal/overview, April 21, 2016 and accessed on October 24, 2016

business). However, an unfavorable investment climate, insufficient energy infrastructure, and weak governance systems have prevented the private sector from stimulating the economy. Despite these efforts, Senegal faces several major economic and social challenges as it attempts to create a more democratic, accountable political system and an economic policy regime that can foster greater prosperity for a broader segment of its population. With an average GDP growth not keeping pace with a population growth of 2.9%, Senegal urgently needs growth, jobs and the capacity to produce and manufacture a greater diversity of value-added goods.

There are severe challenges: liberalization is constrained by a large public sector, a strong pressure on social safety nets, and GOS services. Rapidly-growing Dakar, the capital, is a privileged city-state in a country where up to two-thirds of the people live in poverty. Nationwide, 50% of young men have no jobs, 60% of the people cannot read, 65% of girls are not in school, 74% of the countryside has no electricity, low access and high cost of finance, and wide disparities between urban and rural areas on standards of living have barely improved in 20 years. The young nature and the high level of population growth represent both a risk and an opportunity for growth and stability.

Most recently, short-term risks have emerged since the launching of the Emerging Senegal Plan (PSE) – in particular frequent strikes and social unrest due to pent-up economic demands of the population, and elevated macroeconomic fragility. These risks must be contained so that they do not undermine the economic and social progress already achieved. Thus, an essential ingredient of a successful Emerging Senegal Plan is a clear understanding and resolution of the most binding impediments to the country's broad-based growth.

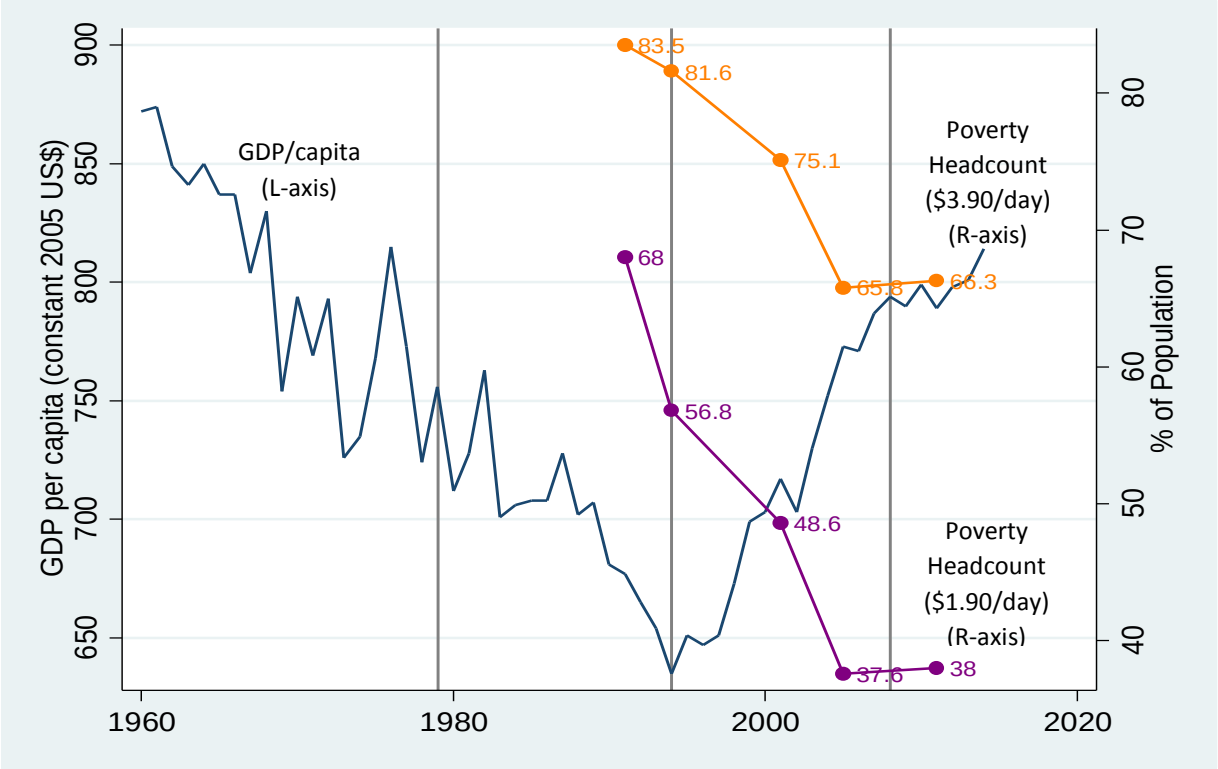
The present study attempts to identify these constraints, as they were manifested during the last several years leading up to the present reform efforts under the PSE. The methodology starts from the widely accepted achievable goals of the PSE, economic growth and structural transformation. These goals will depend upon improving the competitiveness of sectors directly and indirectly related to exports, and facilitating the alleviation of barriers to entry/exit of firms and the output of new sectors. This study assumes that private sector investment and entrepreneurship are ultimately the keys to sustained growth.

2.2 GROWTH HISTORY

This chapter sets the stage for the growth diagnostic by reviewing key trends in the Senegalese economy along with the economic strategies underlying these trends.

Four growth periods can be identified over the past twenty years. Economic performance was poor in the early 1990s, before the 1994 CFA franc devaluation. Senegal then recorded a period of strong growth in 1995–2005, with growth averaging 4.5 percent. This average masks relatively large fluctuations (although less than during the previous decades) reflecting volatility in agriculture output, with growth approaching or exceeding 6 percent certain years or dropping below 3 percent in others. Due to a series of exogenous shocks starting in 2006 (i.e., food and fuel global prices, global financial and economic crisis, and, more recently, the electricity sector crisis and drought in the Sahel), growth decreased to an average of 3.3 percent in 2006–2011.

Figure 2- 1: Per capita GDP and poverty in Senegal (1960-2014)



Source: World Development Index (WDI)

2.3 GROWTH PRE-1994

The period after Independence in 1960 was marked by the establishment of import-substitution policies designed to protect domestic markets from foreign competition. The government played a strong role in regulating and directing the functioning of key sectors, particularly agriculture. The government also granted a large number of monopolies to French companies and state-owned enterprises. In the late 1970s, international price shocks put heavy pressure on the government to reduce its expenditures and undergo a structural adjustment program (SAP) into the 1980s. The SAP focused on the liberalization of state economic policies including the privatization of several state-owned enterprises.

2.4 GROWTH POST-1994

WAEMU undertook a substantial devaluation of the CFA Franc (XOF) in 1994 which halved its price in international markets. The approximately eleven to thirteen year period after devaluation was Senegal's strongest and longest-lasting growth spell since Independence.[12] Post-1994 growth was driven by an initial expansion of export goods and services, and then by large amounts of remittances and foreign direct investment (FDI) and government investment in large

[12] The period from 1994-2005 is characterized as "post-devaluation growth", although others GOS staff consulted mark the end of this period at 2008.

infrastructure projects.[13] Exports jumped from 21% of GDP in 1993 to 32% of GDP in 1995. Since 1995, exports have ranged between a high of 28% in 2001 and a low of 24% in 2008.-. Remittances grew from 3% of GDP in 1998 to 11% in 2009, and gross fixed capital formation, from 19% of GDP in 1995 to a high of 27% of GDP in 2009.[14]

Since the 1980s, Senegal has reduced the involvement of state-owned enterprises in most sectors as the country has shifted towards promotion of private investment to drive national development objectives. The government has privatized companies involved in the airline, water, finance, real estate and telecommunications sectors with no restriction on the participation of foreign investors. Several state-owned firms privatized in recent years were sold in part or in whole to foreign entities. In the energy sector, the state-owned electricity company, SENELEC, operates transmission and distribution networks while the government has encouraged private companies to take an increasing share of electricity generation under power purchase agreements. The government has maintained involvement in ports and infrastructure projects but granted a private concession for container ports. Also the government has used a public-private partnership to complete a toll road connecting the Dakar peninsula with interior roads.

The 2000-2011 period was marked by the fact that economic performance was insufficient for poverty reduction. The GDP growth rate stood at an annual average of 3.9%, yielding a ratio that was slightly higher than demographic growth (2.6%). This mixed performance, which is less than the average of 5% registered between 1995 and 2005, was partly due to external shocks and a slow pace of business climate reforms.

Since the end of the 1994-2005/7 expansion period, economic growth has barely kept up with population growth. Between 2005 and 2014, GDP growth averaged 3.7% while population growth averaged 2.9%, making real GDP per capita growth less than one percent on average during the last ten years. According to the IMF, *"growth in Senegal has been driven mainly by public investment and remittances-fueled private consumption. 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. Private sector expansion has not been a growth driver. Public investment also grew substantially, particularly during the 1995-2007 growth period, averaging 12 percent while private investment only registered a 6 percent average growth."* Page 8 [15]

To encourage growth and provide employment for a growing young population, as well as to modernize the efficiency of public administration for the more effective provision of public services, the GOS has developed the Plan Senegal Emergent (PSE) as its strategic development plan. The PSE favors export-led growth and diversification in manufacturing and services. This type of growth implies aggregation of resources and the scaling up of existing firms, the development of new sectors, and a strong movement away from smallholder agriculture pulled by higher productivity activities centered on urban areas. The IMF believes that the PSE goal of over 7% average annual growth per year is achievable, but would require greater progress on reforming the business environment than the current rate.[16] Excerpts from an IMF 2013 Report titled *Senegal, Achieving High and Inclusive Growth While Preserving Fiscal Sustainability* read:

[13] Between 2005-2009, 75% of all gross fixed capital formation was in construction of infrastructure that does not directly increase productivity – housing, roads, buildings. (Senegal National Competitiveness Report 2011, available at: http://www.cepod.gouv.sn/sites/default/files/RNCS%202011%20version%20anglaise.pdf)

[14] World Development Indicators

[15] IMF staff report, Article IV consultations August 2016, page 8

[16] IMF Staff Report, Article IV Consultation, 2016

> *"Growth has been factor-intensive. A growth accounting exercise suggests that growth is mostly explained by factor accumulation. Total factor productivity (TFP) was low before the mid-1990s, and again during 2008-2013. It only grew modestly during the decade of relatively strong growth (1995–2007) and the recent growth uptick. A number of factors could explain this poor productivity performance. 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, 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)." Page 5* [17]

The results of the CA analysis are consistent with the IMF's assessment. Overall, the economy is currently in a low-growth equilibrium marked by a lack of structural change or increasing macro-level productivity.

2.5 STRUCTURE OF THE ECONOMY

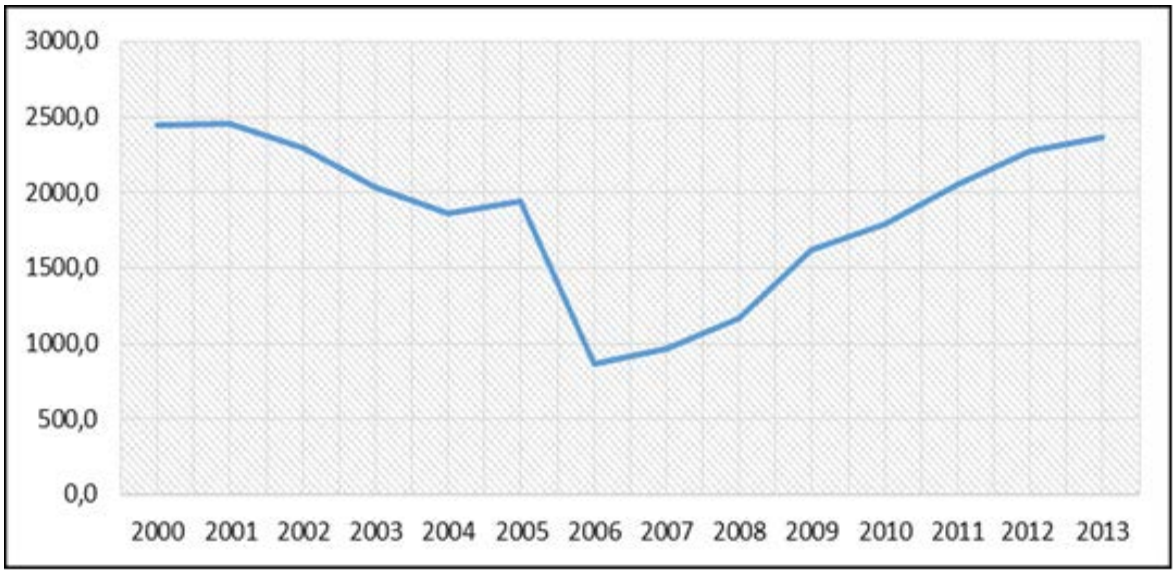
2.5.1 Analysis of Senegal's public debt

Between 2000 and 2006, as a result of Senegal's debt relief cancellations under the Heavily Indebted Poor Countries (HIPC) initiative and the Multilateral Debt Relief Initiative (MDRI), the public debt followed a downward trend, from 78% to 20.9%. These cancellations have opened other possibilities of borrowing for Senegal, especially in the international financial market. The stock rose from 1022.7 billion (20.9% of GDP) to 3341.7 billion (45.7% of GDP) between 2006 and 2013, an average increase of 18.4% over the period.

Indeed, external public debt fell by 4.6% on an annual basis over the period 2001-2006, but it rose rapidly with an average annual increase of 18.9%, from 864.4 billion To 2367.7 billion between 2006 and 2013. Investments in road infrastructure and the energy sector caused massive borrowing on the international financial market in 2009 and 2011 (bonds).

Figure 2- 2: Trend in outstanding public debt in 2000-2013 (in billions of CFA francs)

[17] Salifou Issoufou, Andrew Jewell, Alexei Kireyev, and Gaston Mpatswe, IMF (2013) "Senegal: Achieving High and Inclusive Growth While Preserving Fiscal Sustainability", page 5



Source: GOS Ministry of Finance, MEF/DGCPT/DDP

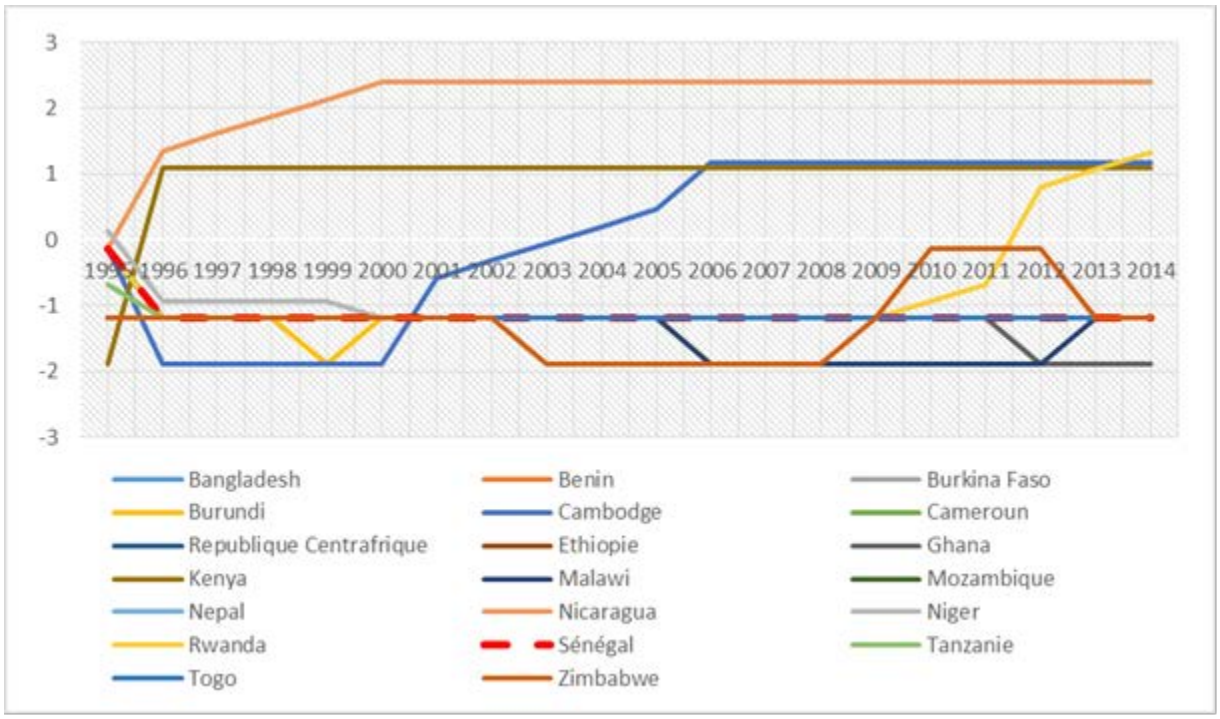
The stock of public debt stood at 3341.7 CFAF billion, of which 2367.7 CFAF billion in foreign debt and 974 billion in domestic debt, compared to 3076.2 billion in 2012 (an increase of 8.3%), or respectively 71% and 29% of shares. Between 2012 and 2013, the stock of public debt increased by 265.7 CFAF billion. The public debt ratio stood at 45.7%, including 32.4% for foreign debt and 13.3% for domestic debt, compared with 42.9% in 2012.

Consequently, Senegal like most low-income countries has progressively opted for an opening of their capital account and the liberalization of their financial sector following the debt crises of the 1970s, the latter having demonstrated the risks Linked to the almost exclusive use of external public debt to finance deficits in the current account of the balance of payments. Senegal then undertook profound structural reforms designed to promote international openness, both commercial (through the reduction of tariff levels, the abolition of quantitative restrictions and the adoption of free trade agreements); and financial, in order to modify the incentive system, to widen the opportunities for economic actors and to diversify the sources of foreign exchange.

It was a question of putting an end to the policies of "financial repression", that is to say the restriction of the development of the financial sector via a set of administered measures generating distortions of markets (capping of the credit, Interest rates or restrictions on entry and exit of capital). The reforms implemented also led to the privatization of financial institutions (mainly for the benefit of Western banks).

Capital flows from abroad can take many forms, with very variable effects on economies, notably foreign direct investment (FDI), portfolio investment on local exchanges, and short- and long-term debt flows. FDI is invested over the long term in the context of business strategies that are unlikely to undergo sudden changes in approach. On the contrary, short-term debt flows are much more volatile.

Figure 2- 3: Evolution of the KAOPEN Financial Index or degree of financial openness



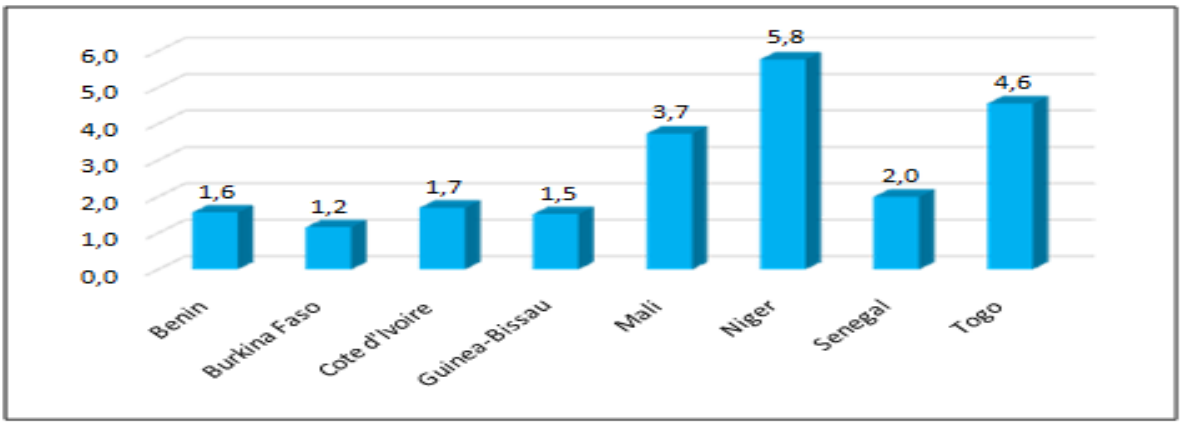
Source: Chinn-Ito index website, 2016

The Chinn-Ito index (Chinn and Ito (2008) estimates the degree of de jure financial openness of economies from the restrictive measures to international financial transactions listed in the IMF Annual Report on Exchange Arrangements and Exchange Restrictions. Figure 7-9 shows the evolution of Senegal's financial openness and the comparator countries from 1995 to 2014. Overall, the KAOPEN index shows that Senegal fell from 1995 to 1996 along with some countries such as Niger, Tanzania, Togo, Ghana, etc. It rose from -0.13 to -1.19 to stabilize just after the devaluation of the CFA franc until 2014. However, Countries such as Kenya, Cambodia, Nicaragua and Rwanda have seen their degree of financial openness increased since 1996. Kenya has started and stabilized its Chinn-Ito index with 1.35, before stabilizing in 2000 with 1.33 and 2.39 respectively. As for Rwanda, a lot of efforts have been made for this index from 2012 onwards, where it stands at 0.81. This shows a weak financial openness for Senegal but remained stable after the devaluation.

2.5.2 Analysis of Foreign Direct Investment (FDI)

Access to international credit markets is problematic for Senegal, as evidenced by the low level of FDI between 2000 and 2013, estimated at 2% of GDP. The most attractive countries are Niger (5.8%), Togo (4.6%) and Mali (4.20%) respectively. The dominance of FDI in Niger is explained by the discovery of uranium and these FDI are oriented in the mining sector.

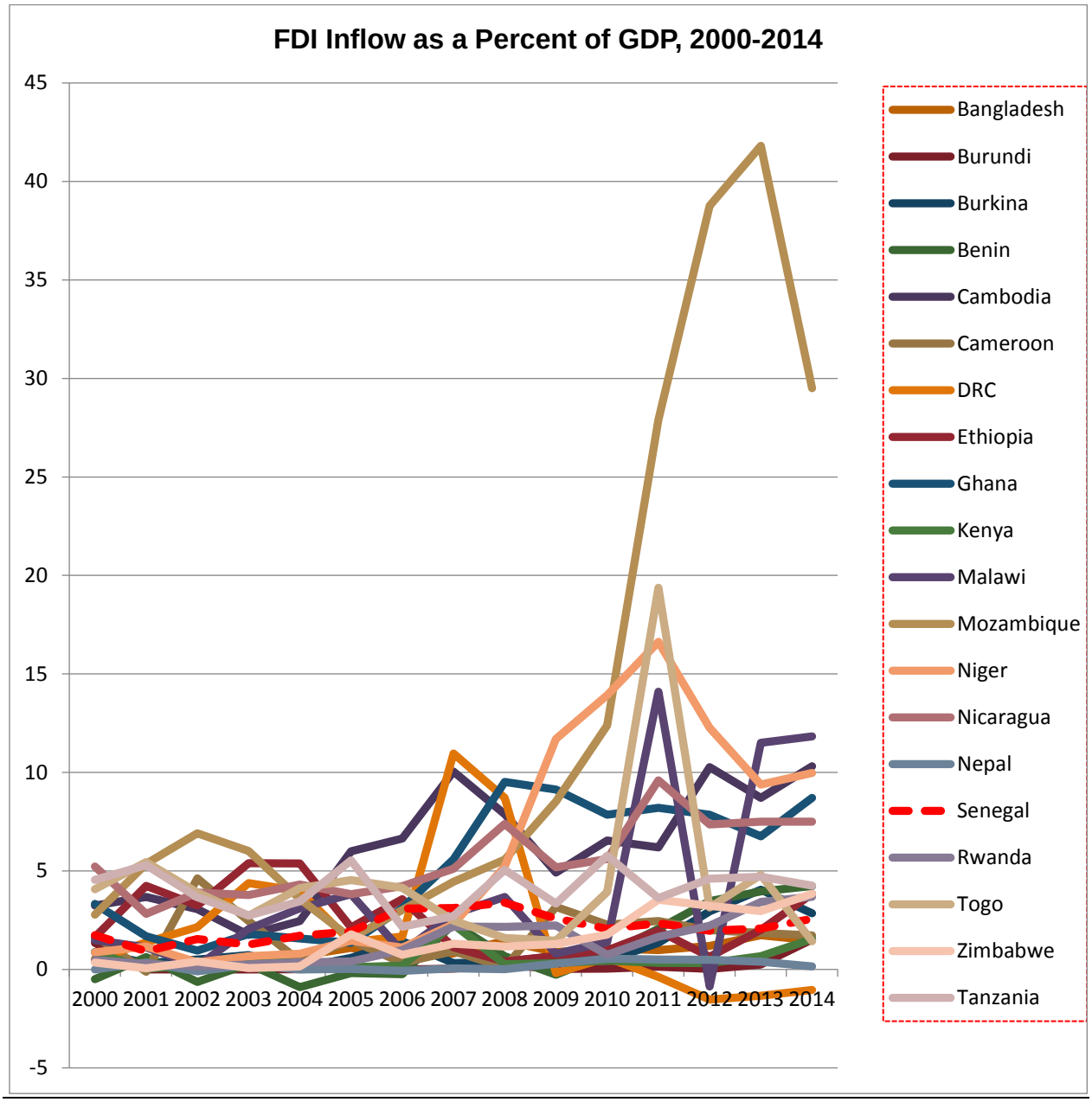
Figure 2- 4: FDI inflows (% GDP) within WAEMU between 2000 and 2013



Source: World Bank, WDI, Authors' calculation

An analysis of the flows of FDI shows a relatively stable pattern of inflows of FDI between 2000 and 2014 in Senegal. This reflects a certain lack of attractiveness with the partners compared to the study sample; Senegal's FDI flows are below average, exceeding only Côte d'Ivoire among the countries in the sub-region, while Ghana's discovery of oil in 2007 is at a rate of about 8% of GDP.

Figure 2- 5: FDI inflows (% GDP) within comparator countries 2000-2014



Source: WDI, Authors' calculation

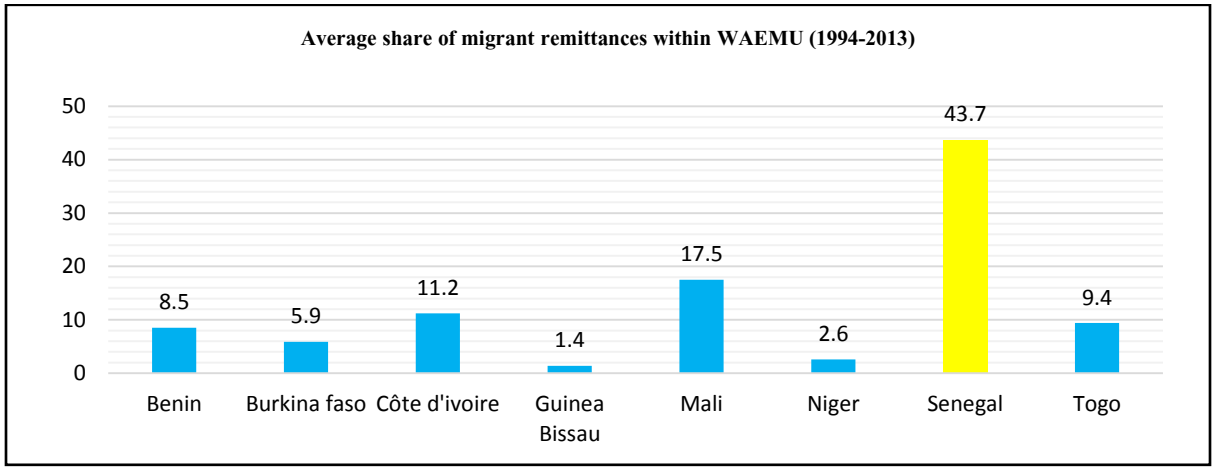
2.5.3 Remittances

Senegal is characterized by a relatively large migratory flow across Africa and the world. In this regard, remittances are a source of income for part of the population. Migrant remittances are very important. They represent, in fact, CFAF 459.1 billion in 2007 compared to CFAF 936 billion in 2011.

The flow of transfers increased considerably in recent years. These transfers could constitute an important source of external financing for the country, in the same way as FDI and ODA. There is a growing recognition of the important role of migrant remittances in raising domestic savings. They represent a complementary source of financing for savings if they are intended for productive investment.

In the WAEMU zone, Senegal is the country with the largest share of migrant remittances. Between 1994 and 2013, Senegal, Côte d'Ivoire and Mali accounted for 72.4% of the funds; with Senegal holding 43.7% (see figure below).

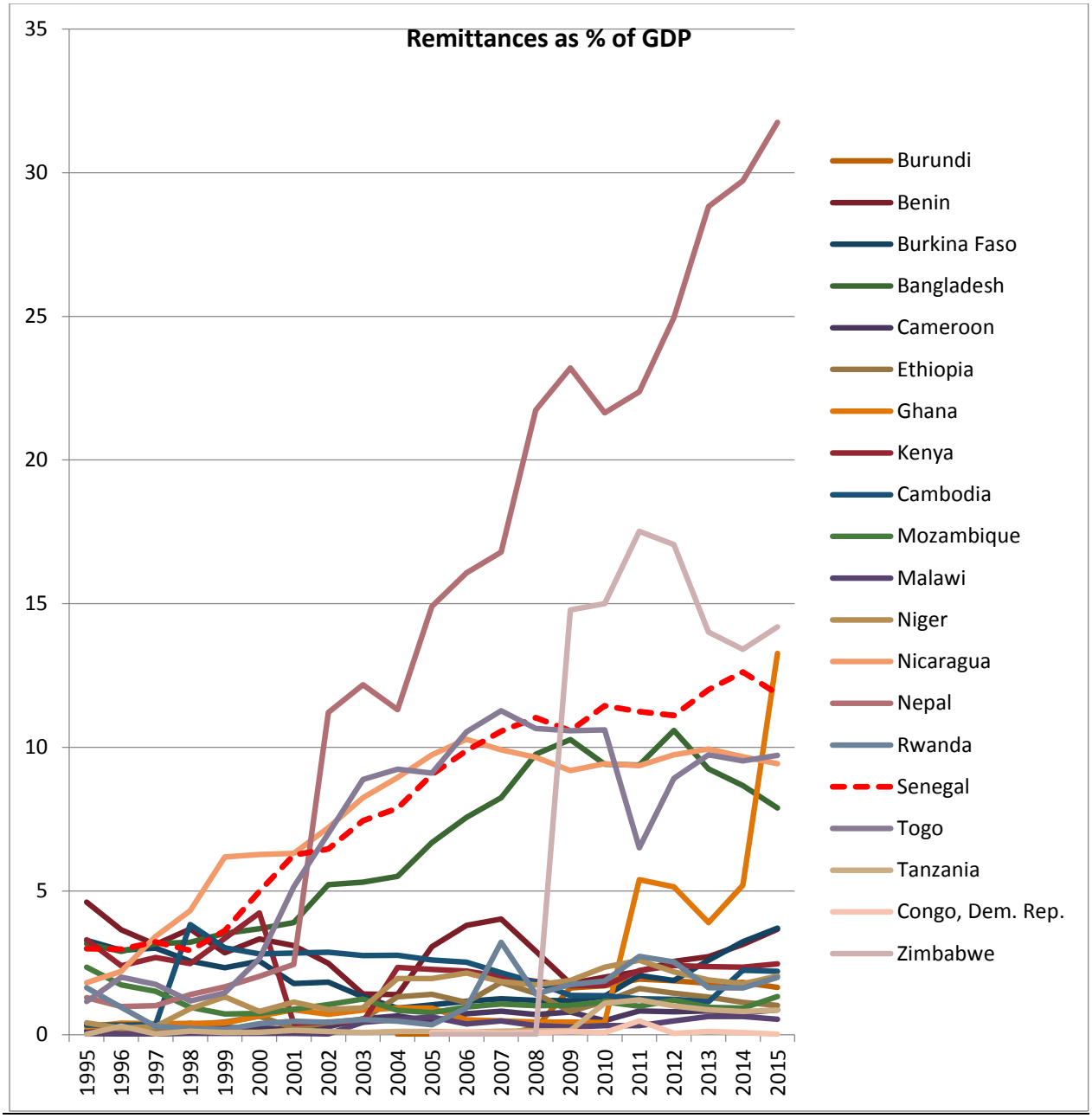
Figure 2- 6: Average share of remittances within WAEMU 1994-2013



Source: BCEAO

According to the World Development Indicator (WDI), remittances are around 11.8% of GDP in 2015, up steadily from 2.9% in 1998. An analysis of the graph below shows that migrant remittances have increased significantly since 1998, from 2.9% in 1998 to 10.5% of GDP in 2014. However, they remain vulnerable to external revenue shock because they depend heavily on remittances from Senegalese in the diaspora. Senegal ranks second among the comparator countries in terms of remittances relative to GDP, behind Nepal.

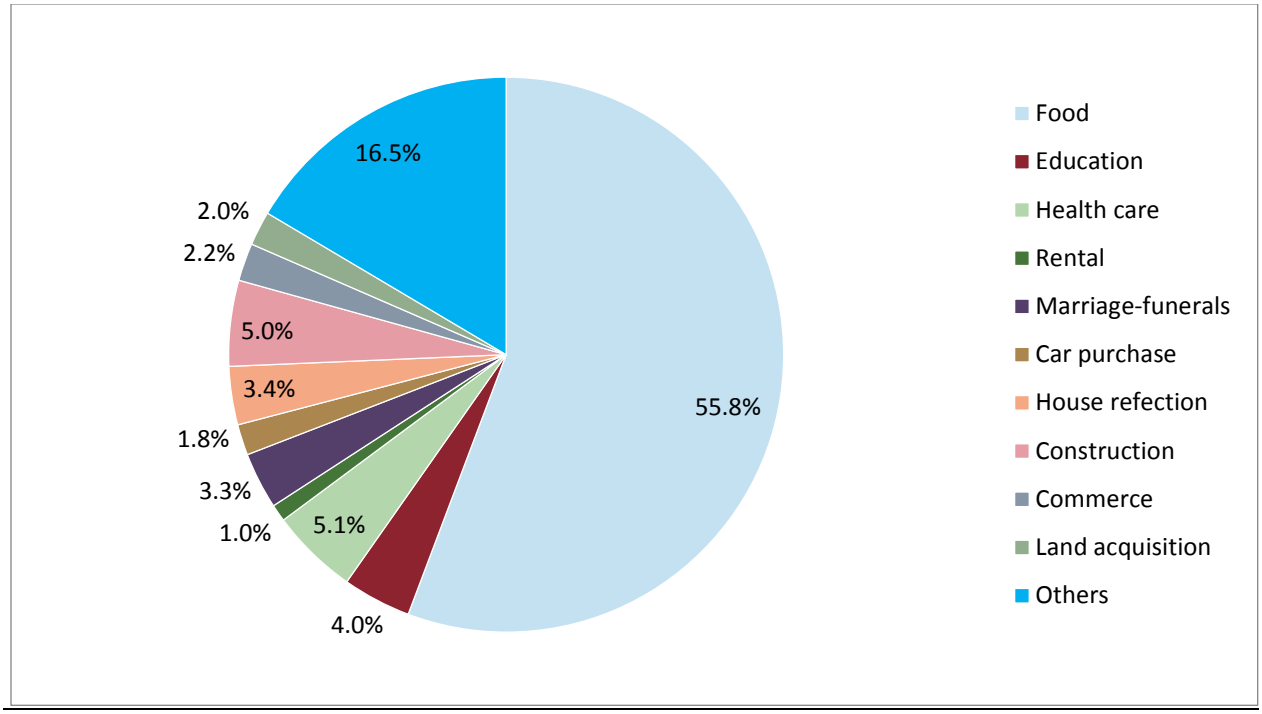
Figure 2- 7: Remittances as % of GDP among comparator countries



Source: WDI

The effects of migrant remittances on economic activity depend on the use of the resources by beneficiaries. The graph below shows that 56% of transfer funds are for consumption. Thus, the majority of households use funds for consumption, health and education.

Figure 2- 8: Spending of remittances by activities (%)



Source: Survey of Migrant Remittances in Senegal 2013, by GOS Department of Money and Credit (DMC)

The remittances are mainly allocated to social sectors (social assistance, real estate) to the detriment of investment. The low allocation of resources to productive investment could be partly explained by the low level of education of the beneficiaries and the lack of entrepreneurship skills. Thus, to enable transfers of funds to have positive effects on growth, it is essential to redirect transfer flows towards productive investments. This measure includes: (i) strengthening the banking sector on behalf of migrants by offering them financial services (savings products and entrepreneurial loans); (ii) improving the saving and investment capacity of migrants, (iii) setting up support mechanisms (Investment Fund for Senegalese foreign investors) for migrant investment projects.

2.5.4 Export Structure

Senegal's performance in innovating and diversifying its export products has been real, if not disappointing in some aspects. The sophistication of its products and the complexity of the economy are fundamental to effective structural transformation. Both aspects seem low compared to reference countries. The market failure in innovation seems to be a reality, but it is difficult to ascertain whether it is a constraint for growth in Senegal.

By some measures of export sophistication or product uniqueness, Senegal has fallen short of its potential to export products which contain higher value added. Diversification and structural transformation of the economy may have been hampered by other factors such as issues of asymmetric information and lack of coordination between different actors (public, private, external partners), and the weak management of innovation externalities for supporting infrastructure such

as roads, electricity, ICT, etc. Entrepreneurs need information to invest in profitable sectors. This information must be available and accessible, in that it creates a self discovery process (Hausmann et al, 2003). Innovation externalities, for instance, arise when the returns to innovation are not fully captured by the innovator, but also shared by others who copy or learn from them. Thus, without effective government intervention to correct these failures, investments in innovation would not take place at the efficient level, thus reducing growth (See e.g., Romer, 1986). [18] Based on the evidence available, Senegal has been weak in addressing market failures in innovation to a great extent, particularly in the management and coordination of asymmetric information by several agencies and private sector entities, including: APIX, DASP, DPME, ADPME, ASEPEX, NOC MDES, GES, etc. Clearly, efforts to accompany the investor are weak. To address these market failures, the government has adopted a new legislation to set up PPPs to provide better services to the general public and to Senegal's private sector. Efforts were also made to valorize the results of Senegal's Institute for Food Technology (ITA) on the transformation of some local products (fisheries, fruits, and vegetables).

Faced with the challenges of globalization, openness to foreign markets is a lever to claim a better economic situation for a given country. In this sense, reflections have been conducted leading to the removal of trade barriers no less indispensable for long-term economic growth. The latter are identified as an obstacle to economic emergence. Senegal adhered to all the reforms of free movement of goods and services (trade liberalization) within the framework of ECOWAS. These reforms contribute to better trade expansion and sustainable integration into the global economy.

In 2014, 48% of Senegal's exports went to Africa against 9% of its imports; followed by the European Union with 41% of imports and 17% of exports. The rest of the exchanges are shared with the countries of Asia and America (United States and Brazil). Thus, African countries and the European Union remain Senegal's main trading partners.

In the context of intra-regional trade, the main client country of Senegal is Mali. These exchanges account for almost all exports from Senegal to the ECOWAS countries.

Moreover, since 2000, Senegal has been a member of the customs union set up by the WAEMU thanks to the introduction of a common external tariff (CET). This accession allows Senegal to export to the other seven member countries of the WAEMU duty-free. On the other hand, the numerous trade agreements signed by Senegal led to a sharp reduction in tariffs. This decline is more pronounced in minerals and metals with 0.4 points between 2001 and 2014.

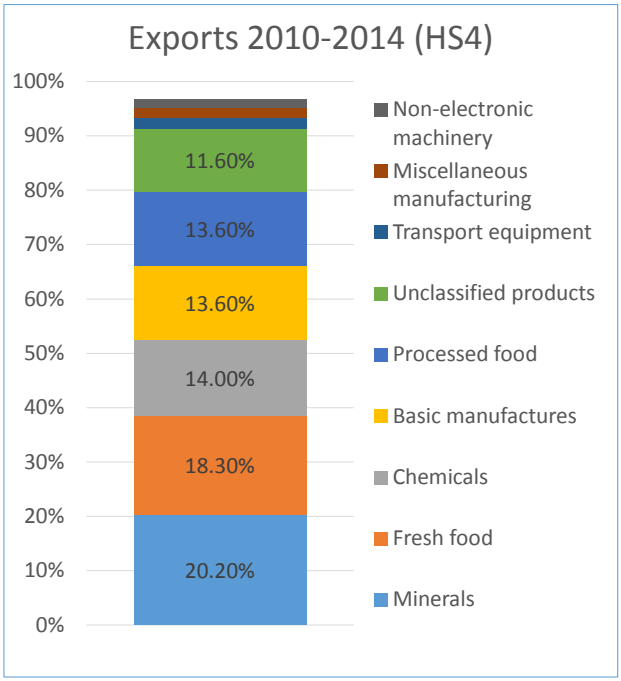
Senegal's export climate suggests a much greater potential for export growth than has been realized to date. The country enjoys a favorable geographic location, with a major seaport and easy access to the large European and North American markets. In addition, it has the benefit of a stable regional currency and a political environment with democratic institutions. The country also offers a relatively competitive export framework, including no taxes on exports, low shipping costs, easy repatriation of capital and income, abundant semiskilled and unskilled human resources, and a relatively solid telecommunications infrastructure. Senegal is also a party to a range of agreements that provide it with privileged market access, including bilateral agreements with several large economies (in particular China and the United States), and is also signatory to the Cotonou Agreement, which provides (reciprocal) duty-free access to European Union (EU) markets for African, Caribbean, and Pacific country exports.

[18] Romer, P. (1986) "Endogenous Technological Change" Journal of Political Economy 98, S71-S10

Senegal has good opportunities to industrialize based on the country's strategic position and stability, 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 the United States African Growth and Opportunity Act (AGOA) and the EU via the Economic Partnership Agreements.

Senegal's exports are largely composed of primary products and low-value added manufacturing. Overall, Senegal's product sophistication and the complexity of exports are normal for its level of development.

Table 2- 1: Exports 2010-2014 (HS4)



Concentrated exports are diversifying; less concentrated exports are consolidating

Sector	Share of top 3 detailed products (HS6) in sector's exports		
	2010	2014	Change
Minerals	90.0%	83.5%	↓
Fresh food	43.0%	49.3%	↑
Chemicals	73.2%	58.5%	↓
Basic manufactures	77.7%	64.1%	↓
Processed food	58.8%	52.9%	↓
Unclassified products	99.9%	99.9%	
Transport equipment	47.3%	50.1%	↑
Miscellaneous manufacturing	37.1%	60.9%	↑
Non-electronic machinery	22.3%	29.6%	↑

Sources: Intracen http://www.intracen.org/country/senegal/sector-trade-performance/ & Agence Nationale de la Statistique et de la Démographie (ANSD 2015)

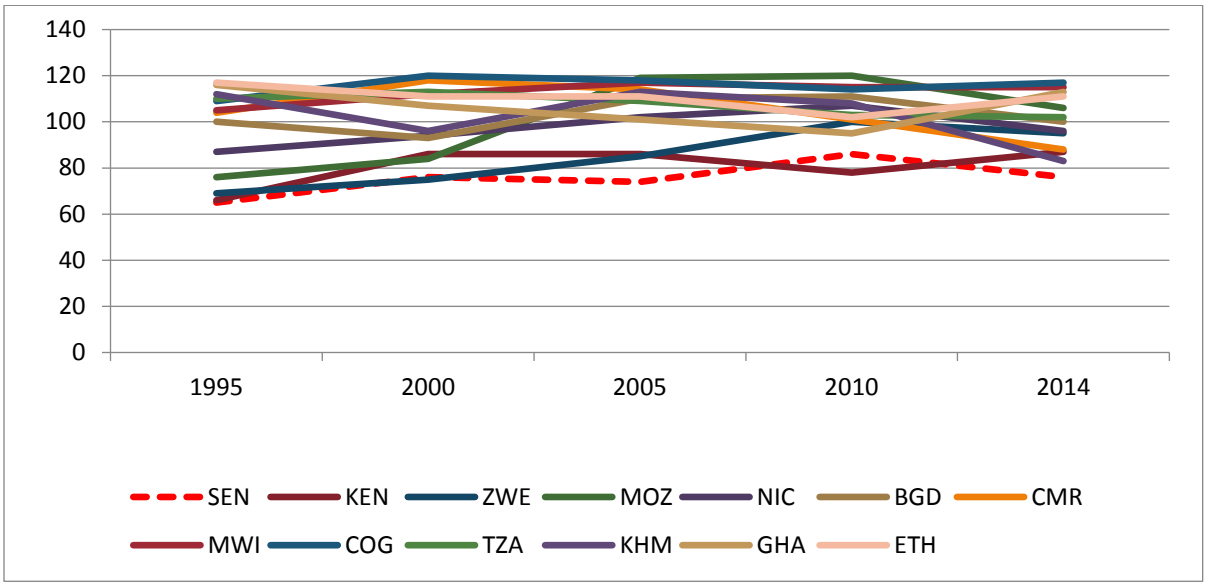
According to the DOS 2013 Investment Climate Statement, Senegal today trades more with emerging markets than with developed ones; most of the foreign direct investment (FDI) the country has received recently has come from emerging nations (China, Brazil, India and the Middle East). Foreign Direct Investment (FDI) increased to around an annual average of 186 million Euros between 2006 and 2010 (or 2.1% of GDP, up from 0.8% of GDP 2000-2005).

Overall, the private sector's role in stimulating the economy has been limited due to a weak investment climate underpinned by weak governance systems and poor implementation of reforms. Senegal's private sector activity has deteriorated since about 2005, as evidenced by the country's export performance. Exports as a percentage of GDP fell from 31 percent to 24.5 percent of GDP between 1995 and 2010. Although the export basket of the country has moved away from its former exclusive reliance on Europe due in part to increased intraregional trade, Senegal still has a relatively few trading customers. The top five destination markets in 2011, which accounted for almost 50% of total exports, were: Mali (15.8%), India (14.8%), Switzerland

(9.2%), Guinea (4.8%), and France (4.6%). This concentration has made Senegal vulnerable to specific shocks. The top foreign exchange earner is tourism, followed by exports of fish products, petroleum oils, phosphoric acid, gold and cement.

Growth since 1994 has been primarily in existing products rather than discovery and growth of new products. Table 2-1 above shows the limited expansion into new sectors; some products appear in each time period, but none are able to establish a firm hold and develop into major export sectors. This potentially indicates a fault in the ability of Senegal to support domestic firms' entry and expansion to export, or the facility of FDI in targeted manufactures, due to low competitiveness of products being exported. Competitiveness occurs when firms are able to produce goods and services at an attractive price and quality relative to their competitors. This CA finds that, overall, Senegal's inputs are costly, and the business environment that firms operate in, at the economy-wide level, does not promote the efficient, productive use of resources.

Figure 2- 9: Rankings of Senegal's Exports based on a country's economic complexity, 1995-2014



Source: Atlas of Economic Complexity
http://atlas.cid.harvard.edu/explore/stacked/export/sen/all/show/1995.2014.2/

The private sector in Senegal faces a number of constraints. Some of Senegal's key weaknesses in terms of global competitiveness (Figure 4-1) include *infrastructure* (especially the quality of electricity supply), and *institutions* (business environment). The most important constraints for doing business include infrastructure (mainly electricity), human capital, access to finance, transportation, land, the high rates of taxation, and the complexity of tax regulations.

2.5.5 Export Sophistication

Circumstantial and anecdotal evidence suggest high levels of collusion between the GOS and large or powerful firms to limit market entry and create rents through a system of protectionism.

These are market failures to a large extent, but this section focuses on innovation and coordination failures, which do not in-and-of themselves, appear to rise to the level of binding, but for which there is significant room for improvement.

Senegal's exports have remained at the periphery of the product space since 1995, notwithstanding a moderate expansion of goods exports after the 1994 devaluation. Senegal's overall product diversity and sophistication matches with its level of income, although both have stagnated in recent years as growth has been driven by public investments. That is to say, Senegal used to perform slightly above its income level, but now performs on average. This fact also points to the idea that exchange rate devaluation can drive growth and diversification in Senegal for potentially long periods (1995-2005),), although Senegal's inability to control its exchange rate limits Senegal's policy alternatives to encourage growth in this way.

Although it is generally agreed that market failures in innovation are a reality, testing whether they pose a binding constraint to growth in a given country is difficult. One way to approach this question is to assess the strength of government efforts to address such market failures. In addition, one can examine whether a country's performance in innovation is poor relative to its overall investment and growth performance—if so, this could be a drag on an otherwise stronger growth. Finally, one can assess the strength of other explanations for any lack of innovation. Innovation is complementary to many of the factors considered in the growth diagnostic tree and a weakness in these areas could contribute to any failure to innovate and grow. A high cost of financing, low skill levels, or lack of key infrastructure, for example, would make innovation less profitable. In addition, barriers to competition—especially through international trade—a key determinant of innovation (Grossman and Helpman 1990) [19] would impede innovation as would other appropriability issues, such as corruption or macro risks, which tend to reduce the incentives to innovate.

Like policy failures discussed in Chapter 11 and macroeconomic risks discussed in Chapter 10, market failures surrounding innovation can directly reduce the appropriability of returns to investment. Notwithstanding recent losses in terms of innovation and product diversity, Senegal appears to have the ability to innovate and increase the diversity and sophistication of economic production if given the chance (e.g., exchange rate devaluation). Therefore, innovation and coordination failures do not appear to rise to the level of binding constraint.

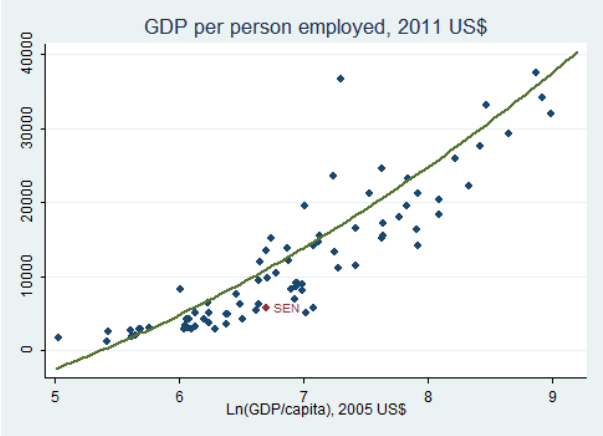
2.5.6 Employment

Most of the much needed job creation will have to come from the private sector as the state cannot sustainably create stable and secure jobs. In Senegal, in addition to traditional artisanal and agricultural activities, the private sector is composed of a modern formal sector and an informal sector. In the period 2000-2005, the Senegalese private sector included about 1700 modern formal firms. Nearly 56 percent of these firms operated in services and 43 percent in industry. Data show that after public administration, the main activities contributing to growth in Senegal are all in the private sector: the telecommunications, commerce, construction, financial services, real estate, agriculture, energy and livestock. Agriculture, while it contributes only 3 percent to growth, employs over 60 percent of the population; however, over 75 percent of the jobs in this sector are not secure. In the fisheries sector, another high employment sector, which employs 28 percent of the poor, over a third of the jobs are not stable.

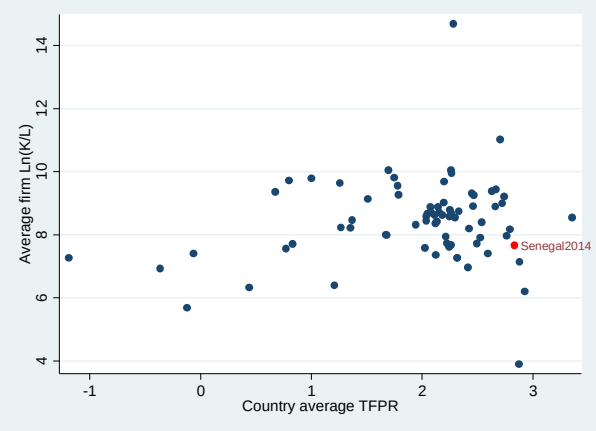
[19] Grossman and Helpman (1990), "Trade, Knowledge Spillovers, and Growth," NBER Working Paper No. 3485

Senegal's average labor productivity, per person employed, is low. This is because (a) relatively few people are fully employed, and (b) the overwhelming majority of the working population is engaged in informal, small-scale, low-productivity work (discussed below). Larger, more formalized firms tend to have internationally competitive levels of factor productivity.

Figure 2- 10: GDP per person employed, 2011 US$



Source: World Development Index (WDI)



Source: WBES Multi-Country Combined Firm-Level Data

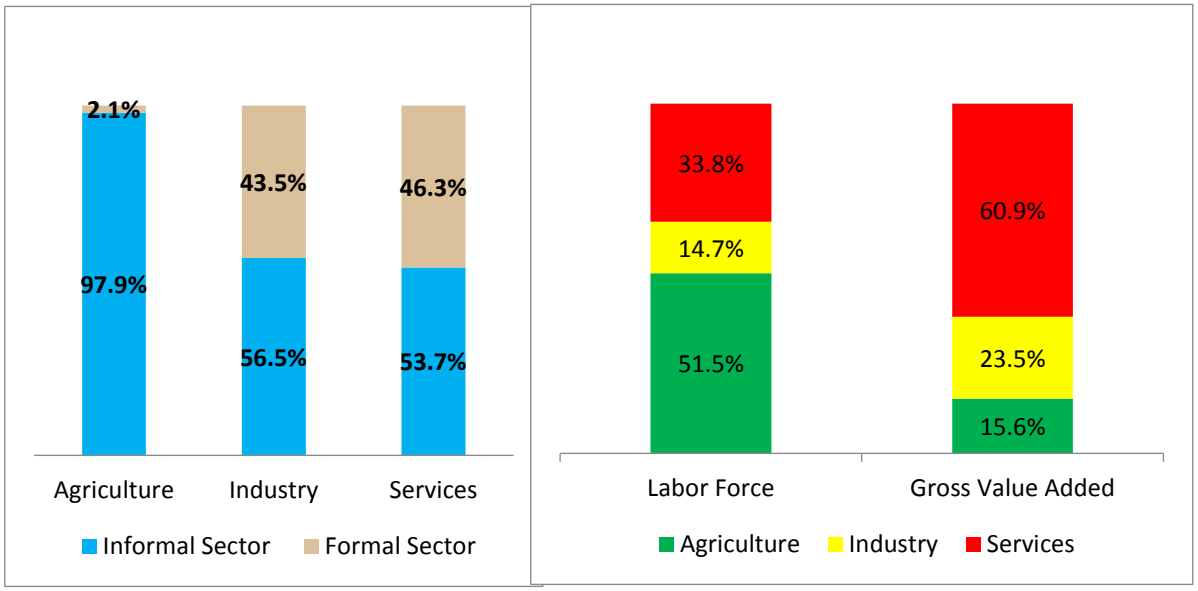
Somewhere between 90-95% of employment is said to be informal, depending on the source. Total employment in the private formal sector is only around 400,000, while working age population is close to nine million (see Figure 2.11). Figure 2.12 below shows the large differences in both the scale and sources of employment between the formal and informal sectors in Senegal. Informal activity is estimated to contribute approximately 40-45% of GDP, depending on the source. There are more labor market entrants in Senegal annually than there are new formal sector jobs, driving the relative expansion of informal economic activity in Senegal over time.

According to a 2012 Dalberg Associate study[20], *the private sector in Senegal has an atypical profile with the economy heavily dominated by its manufacturing and services sectors. Between 2000 and 2009, on average, these sectors accounted for less than half of Senegal's workforce but 84 percent of total GDP, while the 51 percent employed in agriculture collectively accounted for only 16 percent of GDP (see Figure 2-11). The low levels of agricultural productivity can be explained by high levels of informality in the sector (see Figure 2-12), a low degree of mechanization and a high dependence on irregular rainfall.*

[20] Dalberg Associates, Assessment of Impact, Investing policy in Senegal (2012)

Figure 2- 11: Formal and informal sector contribution total value-added, 2005-2009 average

Figure 2- 12: Output and employment composition to % of total employment, % of GDP



Source: WDI

2.5.7 Poverty

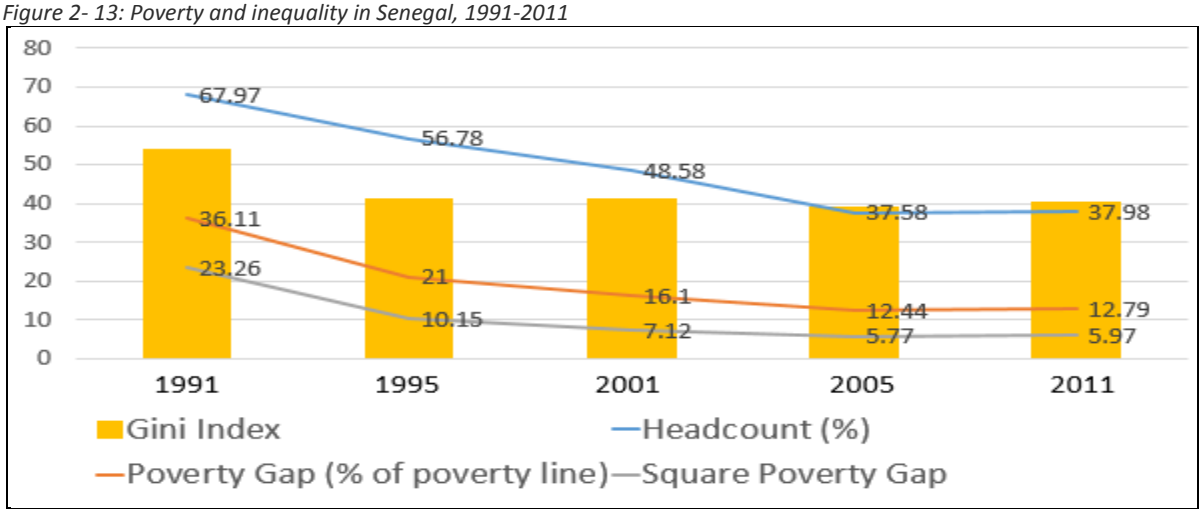
Poverty has declined significantly in the last 20 years, but progress has stagnated since 2011. Currently, Senegal's poverty headcount stands around 38% of the population, with large regional variations. Overall, poverty is shown to be strongly responsive to economic growth in Senegal, with large decreases in the poverty rate observed during the 1994-2005 growth spell (see Figure 2-13). Poverty elasticity of growth during this period has been measured at -2.62, meaning a 1% increase in GDP per capita is associated with a 2.62% decline in the poverty rate.[21] Poverty elasticity varies significantly over time in Senegal. Poverty elasticity from 2001-2005 has been estimated somewhere between -1.55 and -2.78, while elasticity from 2005-2011 is estimated at -0.71.[22] Recent growth appears to reduce poverty less than the growth that occurred during the 1994-2005 export expansion. Rural poverty is concentrated in the southern and eastern areas. Urban poverty is concentrated in areas outside of Dakar (see Figure 2-13 below).

Senegal has made progress in poverty alleviation, but the poverty incidence remains high, and households are vulnerable to shocks (see Figure 2-14, *c. Households remain vulnerable to shocks*, top left panel). In 2001–11 poverty rates declined by 8.5 percentage points, with the largest decreases observed in Dakar, but almost half of the population continues to live below the poverty line. The poorest households are particularly vulnerable to idiosyncratic shocks, such as the loss of livestock or harvest, or external shocks—for example, to the prices of such major imports as oil, rice, and wheat.

[21] https://www.banque-france.fr/uploads/tx_bdfdocumentstravail/DT-538.pdf, THE ELASTICITY OF POVERTY WITH RESPECT TO SECTORAL GROWTH IN AFRICA, Nicoletta Berardi and Federica Marzo, February 2015

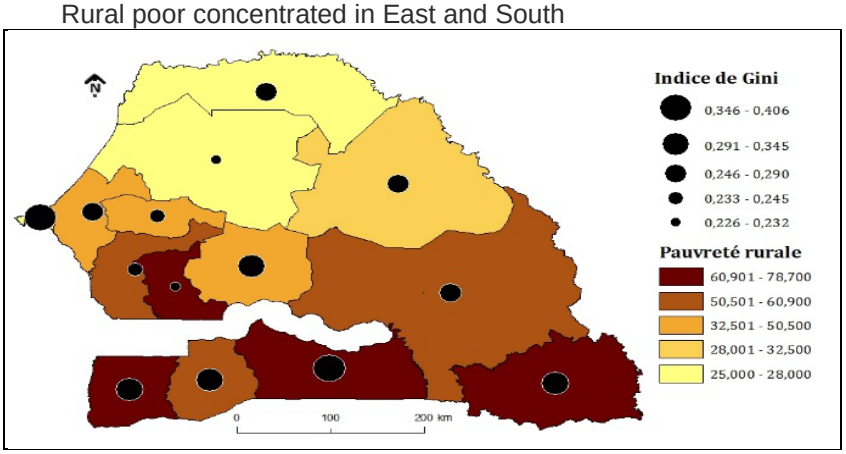
[22] https://www.imf.org/external/pubs/ft/wp/2013/wp13215.pdf, Inclusive Growth and Inequality in Senegal Alexei Kireyev, October 2013

Figure 2- 13: Poverty and inequality in Senegal, 1991-2011



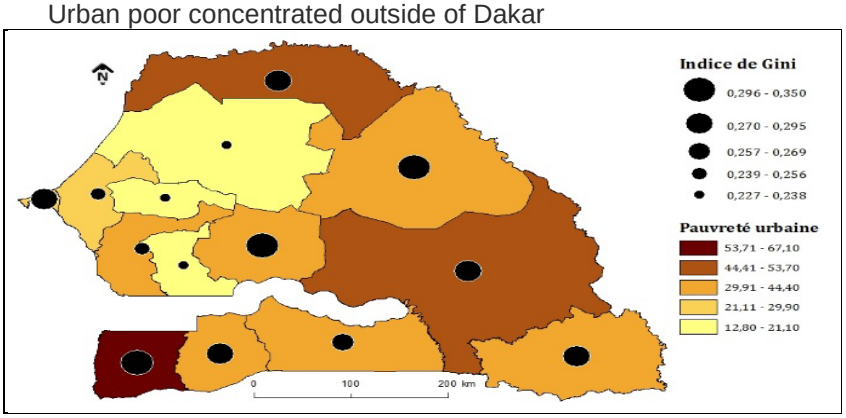
Source: WDI

Rural poor concentrated in East and South



Rural poverty incidence (2011)
Source: Authors

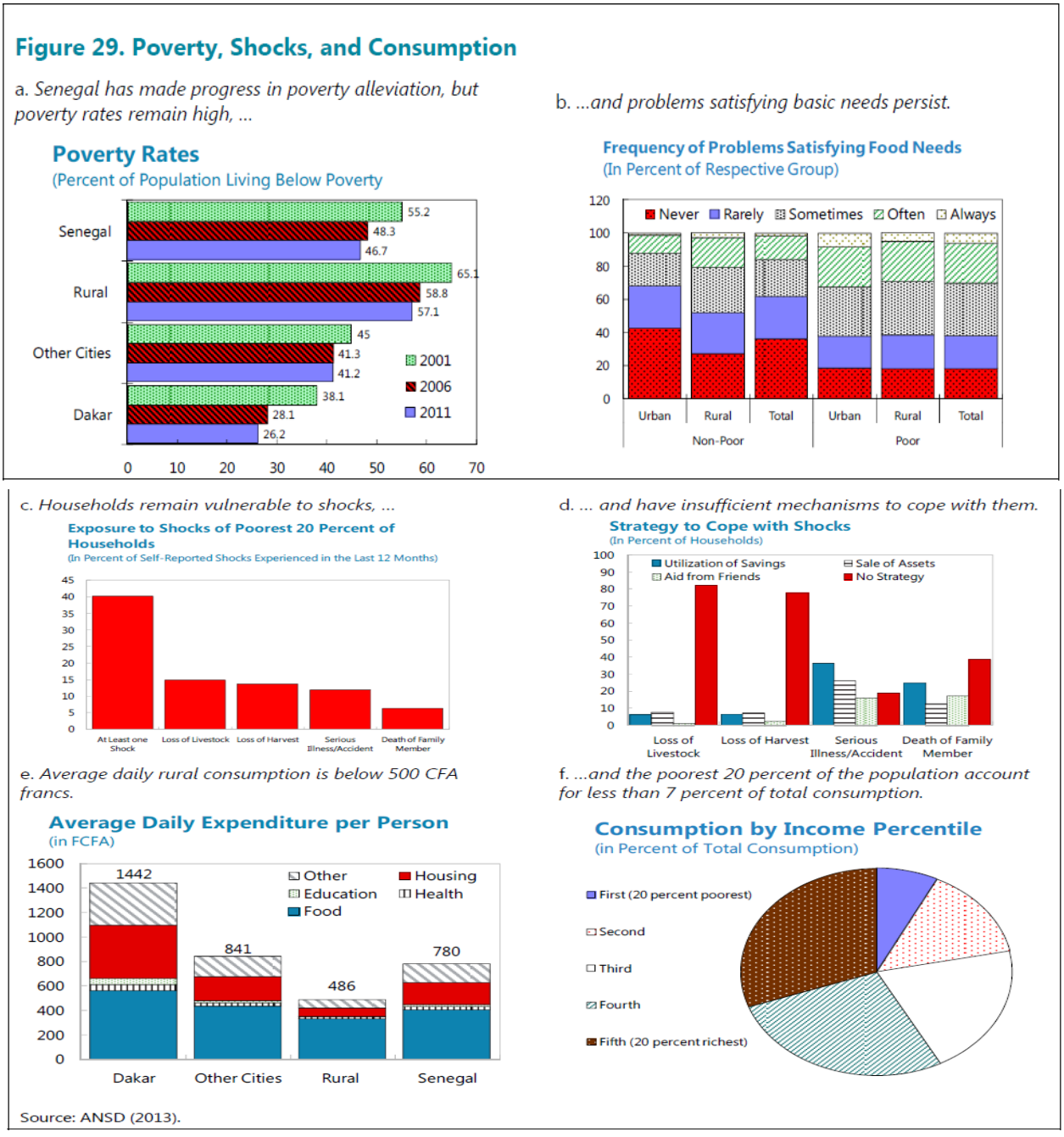
Urban poor concentrated outside of Dakar



Urban poverty incidence (2011)
Source: Authors

The majority of households do not have mechanisms to mitigate the impact of such shocks, resulting in their often tapping into savings and selling assets in response to shocks, with the risk of being locked into long-term poverty

Figure 2- 14: Poverty, Shocks, and consumption



Source: IMF, Making Senegal a Hub for West Africa, 2015 (Kireyev & Mansoor), pages 70- 71

Overall, inequality in Senegal is moderate, and slightly lower than the Sub-Saharan African average. However, geographic disparities are very pronounced, with almost 2 out of 3 residents

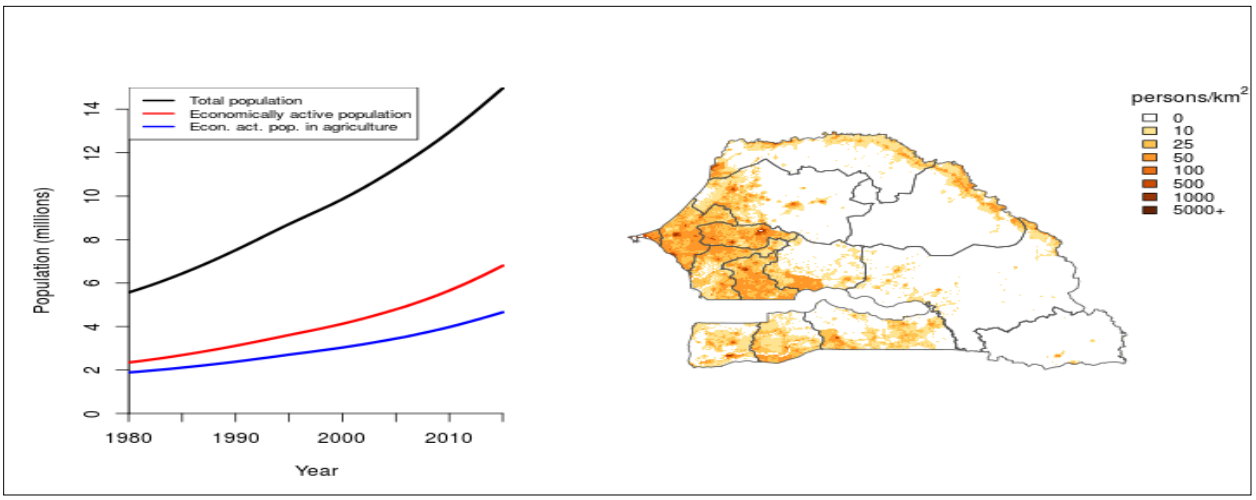
poor in rural areas, especially in the south, versus one in four in Dakar. Progress has been made on access to education, but a significant number of youth only go to Koranic schools that are not aligned with the public school curriculum. Child begging related to some of these schools remains a problem, notably in Dakar.

While Senegal has been successful in decreasing poverty rates, the share of the population living below the poverty line and its exposure to shock remains high, emphasizing the need for safety nets. Most recently, Senegal has taken the innovative step in the African context of establishing a national household allowance program—*le Programme National de Bourse de Sécurité familiale* (PNBSF)—and developing Universal Medical Coverage (UMC). Over the year, the program will provide households living in extreme poverty with quarterly allowances of CFAF 25,000. The pilot phase covered some 48,000 households and, starting in 2014, the program was scaled up to reach 250,000 vulnerable households in 2017. Through the household allowance program, a fresh thrust is being launched to achieve universal schooling, improve child healthcare and, thus, reduce child mortality. In the context of UMC, the government has set itself the objective of reaching a minimum of 75 percent coverage by 2017.

2.5.8 Demography

The Senegalese population grew from 3 million inhabitants in 1960 to about 14 million inhabitants in 2016. Total population increased by more than 270 000 persons per annum, i.e. a demographic growth of 2.7% - 2.9% (depending on the source). The overall labor force participation rate is 54.4%. The sizeable population increase is due to the considerable decline in mortality and the high fertility level. Over 60% of the population is under the age of 25. The majority of the population lives in the rural areas and is highly concentrated in the North and West of the country.

Figure 2- 15: Population growth and population density in 2015 in Senegal.[23]

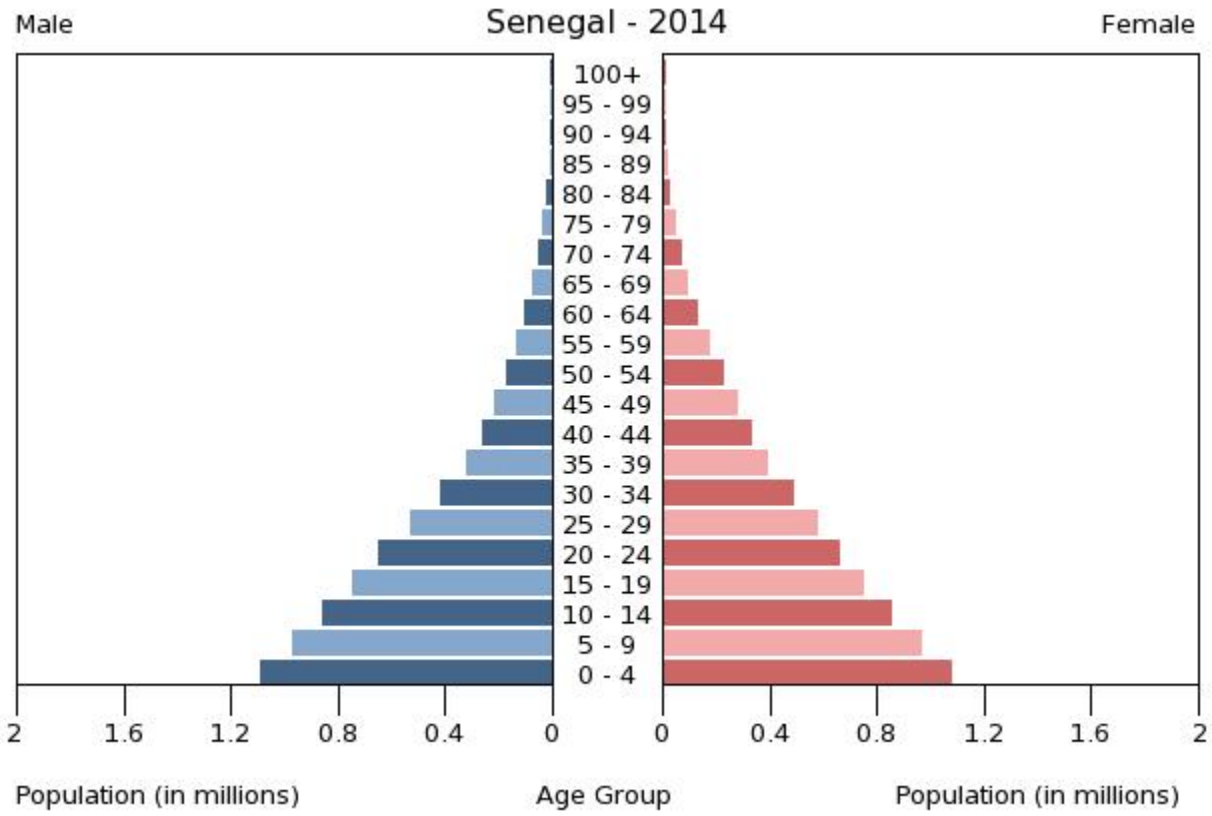


Sources: FAO and World pop.

[23] The Geospatial and Farming Systems Research Consortium (GFC) & University of California, Davis, http://gfc.ucdavis.edu/profiles/rst/sen.html, Country Profiles, Senegal

With regard to human resources, the high rate of unemployment and under-employment are the most obvious signs. Actually, only one out of five people are working full time in Senegal. Such a situation appears to suggest a high dependency rate which, among other things, translates into constant pressure on working individuals who run the risk of falling into monetary poverty.

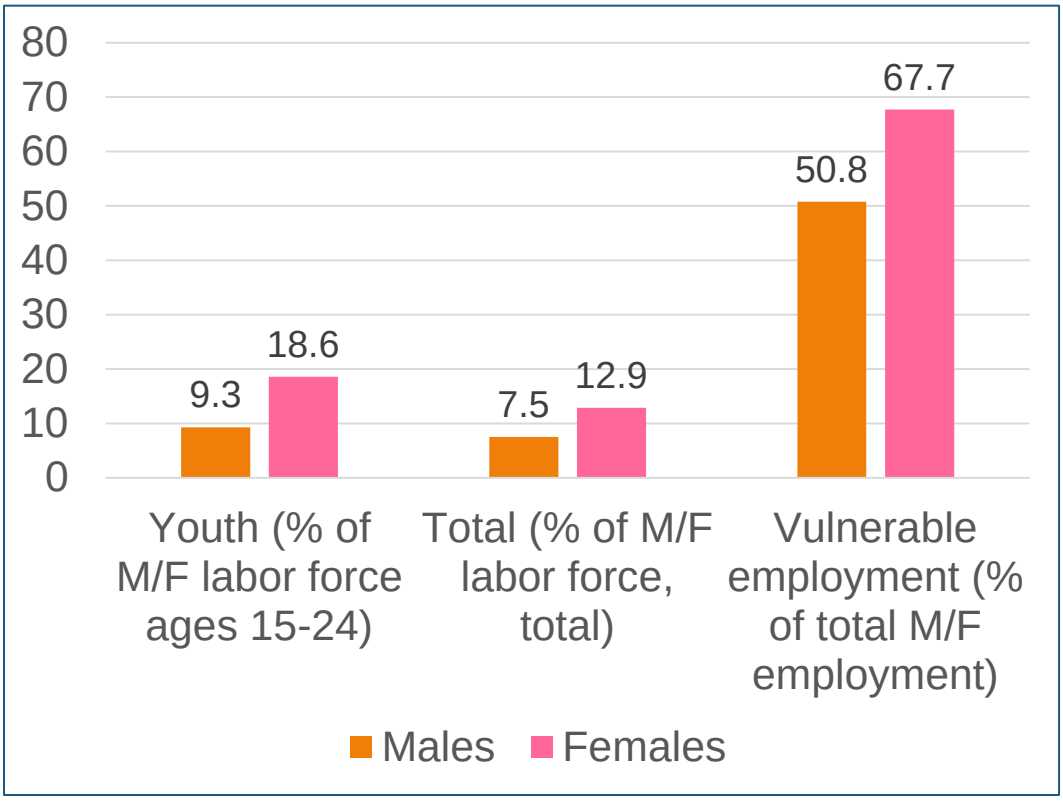
Figure 2- 16: Population pyramid



Source: CIA World Factbook 2016

Over 97% of Senegal's population is under the retirement age. The youthfulness of the population has significant social repercussions, notably tensions on the labor market. The majority of the population are women (52% of the total population) who represent 65% of the economically active population.

Figure 2- 17: Demographic transition in Senegal



Source: WDI

The 2016 CIA World Factbook reports that because of the country's high illiteracy rate (more than 40%), high unemployment (even among university graduates), and widespread poverty, Senegalese youths face dim prospects; women are especially disadvantaged. [24] The World Bank adds that 57.1% (2010) of rural Senegalese belong to that portion of the population under the poverty line. [25] Women, in particular, make up a large share of the poor in Senegal. Though it is difficult to measure exactly what percentage of Senegal's poor are women, several indicators suggest that poor female to male primary and secondary enrollment rates, literacy rates, and employment rates contribute to the gender inequality of the distribution of wealth.

Women overwhelmingly work in the informal economy, with less education and generating lower incomes than men. Depending on the economic sectors, employment presents geographical and gender disparities. In the rural areas, women are primarily engaged in agriculture, livestock production and fisheries. In the urban areas, women consider the informal sector as an interesting alternative since it requires less skills and specialization, but is also more flexible and more

[24]CIA World Factbook 2016

[25]World Bank data, http://data.worldbank.org/indicator/SI.POV.RUHC?locations=SN&view=chart

adapted to their financial capacities and their schedule of activities. They are thus underrepresented in the formal sector.

The capacity of the formal economy to absorb new entrants in the labor force is much more limited than that of the informal economy. In Senegal the size of the job pool in the formal economy has stagnated over the past 15 years. As a result, there is a large cohort of young people joining the informal economy even after completing secondary and tertiary education. [26]

The IMF Senegal Poverty Reduction Strategy Paper (PRSP) (2013-2017) states that "*The informal sector contributes 55% to GDP and is considered as a refuge sector which attracts all job creating initiatives. This makes it an attractive lever for most youths, struggling with the restricted absorption capacities of the formal sector. According to the 2016 World Development Indicators (WDI), informal employment, which absorbs more than 60% of non-agricultural jobs, is increasing with urbanization.*

The PRSP reveals "*the persistence of major social and gender disparities in Senegal. The disparities between regions concern access to basic infrastructure: safe drinking water and sanitation, transportation infrastructure, infrastructure for the storage, conservation and processing of local products, electricity and large-scale irrigation activities. These elements are perceived as major sources of inequality and inefficiency with regard to contribution to economic growth.* Page 8 [27]

2.5.9 Social Structure and Inclusion

Senegal is a strongly hierarchical and patriarchal society where customary and religious structures have produced unique and powerful religious institutions, most notably the Sufi Brotherhoods, which deeply influence the political economy through their networks and culture of obligation. Women's agency and opportunities as economic and social actors is delimited by law, policy, and by social institutions and practices. In order to ensure that investments in growth-focused projects reach the poor and achieve some equity of opportunity, MCC must ensure a clear understanding of this complex social context.

The reach of the state has been highly centralized in Dakar since independence. There are strong regional differences in Senegal- particularly with the southern Casamance region that until recently experienced a separatist conflict from 1982-2014. The Casamance region has experienced historical underdevelopment as a result of the separatist conflict.. New GOS policy aims for greater inclusion of the Casamance region and a greater sharing of economic growth dividends.

2.5.9.1 Women in Society and the Economy

In terms of social status, women in Senegal are strongly disadvantaged. Senegal ranks 118/188 on the UN's Gender Inequality Index (GII), and 170/188 on the Gender Development Index (GDI).[28] Average male Gross National Income (GNI) per capita is 65% more than female GNI per capita and men have twice the level of schooling that women have (1.8 versus 3.2 years,

[26]Results for Development Institute, Skills for Employability: The Informal Economy (2012), Pina, Kotin, Hausman, & Macharia, Dalberg Global Development Advisors (DGDA), page 15
[27] Ibid, page 8
[28] UNDP Human Development Report 2015, http://hdr.undp.org/en/content/gender-inequality-index-gii

respectively).[29] According to Freedom House, "some elements of Islamic and local customary law, particularly regarding inheritance and marital relations, discriminate against women. Rape, female genital cutting, and domestic abuse persist, and reports of violence against women more generally are on the rise."[30]

Women have distinct roles in the economy, including the majority of agricultural labor and small-scale trading. Women are engaged more in agriculture for household and domestic consumption (millet, e.g.), while men are more likely to be engaged in cash-cropping and export-oriented agricultural production (groundnuts, rice, tomatoes, e.g.). Land allocation laws and practices reduce the likelihood that women will have access to a quality plot and also that she will have stable claim to that plot. Overlapping formal and cultural systems for land transfer compound this issue, though to what extent is not fully known.

Traditional patriarchal structures are intertwined with Islam as practiced in Senegal, subordinating women to men and limiting their agency in all socioeconomic classes. Polygamy persists and shapes the dynamics of poverty. One-eighth of urban men and one-sixth of rural men in Senegal report having more than one wife; 28.2% of urban women and 36% of rural women report having one or more co-wives. Polygamy creates insecurity and competition for assets among wives and families, particularly when customary and inequitable inheritance practices apply. Rights to make household (HH) decisions are made de facto among husbands and male relatives. The impacts of polygamy on women's welfare and poverty are unknown but will require further analysis as programs develop to ensure that programs are designed to fit within these social structures and avoid policy failures.

Concentration of formal economic and moral authority with men over household and community resources reduces a woman's access to economic resources and control over economic assets, as well as her own person. People in Senegal frequently choose to follow traditional rules and laws that result in women's economic marginalization. For example, though the formal law system does not discriminate between men and women in inheritance, traditional customs recommend that women inherit ½ of what men inherit, and their "word" does not have equal social value. A study (Case Study 1, Women's Land Rights in Senegal) published by the Proceedings of the National Academy of Sciences (PNAS) of the United States note that [31] "*In Muslim West Africa, the customary law provides that women do not inherit land, even though the Quran explicitly demands that women inherit half the share of their brothers, and the statutory law, inspired by the Napoleonic Code, prescribes equal inheritance shares for men and women (the testator may write down a will but his ability to modify the rule is limited) (34). In the Senegal River Valley, the custom was applied strictly until recently. Women never thought of invoking the Islamic law to advance their interests lest they should antagonize their male relatives and be compelled to forsake the social protection that they have traditionally enjoyed. Under the customary land tenure system, indeed, women are ensured against various contingencies, in particular the prospects of*

[29]UNDP Human Development Report, 2014 Data, http://hdr.undp.org/en/composite/GDI; http://hdr.undp.org/en/composite/GII. The GDI is calculated as the ratio of female HDI to male HDI. The GII is constructed by taking the differences between males and females across health, empowerment, and the labor market and combining into a composite index

[30] Freedom House Senegal 2014 report, available at https://freedomhouse.org/report/freedom-world/2014/senegal#.VMZa13B4qs4

[31] Source: Aldasheva and al , Legal reform in the presence of a living custom: An economic approach, Case Study 1, Women's Land Rights in Senegal, PNAS, 2011

separation/divorce, widowhood, and unwed motherhood. In such circumstances, they typically have the right to return to their father's land where they are allowed to work and subsist until they find a new husband. In terms of our theory, this feature means that the cost of appealing to the Islamic law (considered here as the formal law) and of resorting to the local marabout (considered here as the formal judge) was too high in terms of (insurance) benefits foregone".

Although value depends on other mitigating factors, women's *de facto* lack of agency over economic resources results in an inability to control economic decisions, such as investments in physical or human capital. This has second-order implications on their ability to participate equitably in markets because they are *de facto* less credit-worthy, less educated, or less experienced than men. Other studies recognize that Islamic law and, a fortiori, the statutory law had no impact on women's welfare. [32] "*Over the last decades, however, as shown by a study of 16 villages located in the delta area (department of Dagana) and the middle valley (departments of Podor and Matam), the cost of being excluded from the community life has fallen as a result of an increase in women's education and an expansion of their nonagricultural employment opportunities (34). Moreover, women who have completed their primary schooling and those who have a nonagricultural occupation (or are engaged in the marketing of agricultural products) have a tendency to manifest their opposition against customary practices such as the levirate system (whereby a widow has to marry a brother of her deceased husband). Interestingly, the custom has recently evolved toward enhancing women's rights.* However the study concludes that *there is no evidence that the custom has adjusted to the point of following the Islamic prescription or the statutory law provision. Instead, what we find is an evolving practice of transfers aimed at compensating women for their de facto exclusion from inheritance of a portion of their father's land".*

Women are disproportionately represented in the informal sector, even after accounting for their large share in agriculture. While it would not be correct necessarily to say that the reasons firms choose to remain informal are equivalent to the reasons female-owned firms choose to remain informal, it is reasonable to imagine that the benefits to formalization of female-owned businesses are lower and the costs or disadvantages of formalization are higher for women due to a number of social, legal and institutional issues that are covered elsewhere in the analysis.

The Fertility Challenge: In Senegal, a woman's socio-cultural value is centered on her reproductive role and in the most conservative contexts, birth control is not allowed. The high fertility rate (5.5 children born per woman) reduces women's labor force participation, and the percentage of women over the age of 15 that are employed has remained almost static for over 20 years (54% in 1991 and 57% in 2013). Senegal's average fertility rates mask significant regional and socioeconomic differences. For example, the fertility rate of women in urban areas is 4.0, while that of women in rural areas is 6.3. The fertility rate for women in the highest income quintile is 3.4, and in the lowest it is 7.3. Thus, the lack of economic autonomy for women contributes to, and is reinforced by, women's high fertility rates.

Legal and other discriminatory practices that affect gender equality in Senegal:

[32] Source: Aldasheva and al , Legal reform in the presence of a living custom: An economic approach, Case Study 1, Women's Land Rights in Senegal, PNAS, 2011,

- According to the 1973 Family Code, the father is legally the head of household and the parental authority, is responsible for administrative procedures and expenses regarding the household and children. As well, the right to choose a family's place of residence is solely granted to him. A woman can become a recognized head of household if the man renounces his authority in court. [33] This has significant negative impacts on women's empowerment. The exact impact on women's economic empowerment needs to be explored more fully.
- Though the family code provides a minimum age of marriage (16 for women and 18 for men), practices of levirate and sororate are legal and early marriage is common. (DHS 2010-2011).
- Customary law is not recognized as a valid source of law in the constitution, but polygamy is legal and up to 35% of women are in polygamous union.
- The father is legally the head of household and the parental authority, and the right to choose a family's place of residence is solely granted to him.
- Two inheritance systems are legal (civil system and sharia). Although the default system is the civil system that grants equal rights to women and men, in rural areas practices vary from one region to another and customs prevail in many regions.
- The constitution grants to women and men equal property rights to land ownership and the default marital property regime is the separation of property as per the family code. Yet, in practice very few women (4%) have any land to transfer to their heirs upon death. [34]
- Women and men have the same equal rights to bank accounts and bank loans, but women have a hard time accessing credit because they often do not own collateral such as land.
- A law on sexual harassment exists, but the law is not effectively enforced. [35]
- The law on rape and domestic violence allows a woman's sexual history to be used as evidence to defend men accused of rape. [36]

2.5.9.2 Socioeconomic Power and the Role of Religious and Social Networks in the Economy

MCC's mandate to reduce poverty through economic growth strongly implies a need to understand the dynamics of poverty and socioeconomic inclusion in-country. Senegal is a strongly hierarchical society, with deference to position and social standing with an acceptance that power is unevenly distributed and power is centralized. [37] The extensive use of informal contacts, contracts, and the high degree of reliance on social networks and personal connections is fundamentally important to understand how business is currently done in Senegal. Business transactions among domestic firms are heavily grounded in informal networks and personal relationships through business associations, familial connections, community networks, and

[33] U.S. Department of State. Senegal 2015 Human Rights Report. https://www.state.gov/documents/organization/252933.pdf

[34] Lambert, Sylvie, Ravallion, Martin and Domnique van de Walle (2011) Is It What You Inherited or What You Learnt? Intergenerational Linkage and Interpersonal Inequality in Senegal. Policy Research Paper 5658. The World Bank Development Research Group & Poverty Reduction and Economic Management Network Gender Group. Quoted by OECD gender Index Senegal.

[35] U.S. Department of State 2015 Senegal Human Rights report. https://www.state.gov/documents/organization/252933.pdf

[36] Ibid.

[37] Senegal, Professor Geert Hofstede, Comprehensive study of how values in the workplace are influenced by culture, https://geert-hofstede.com/senegal.html

religious organizations.[38] As a result, social relationships and connections define economic ones. While social connections are economically important everywhere, it's hard to understate the fundamental importance of these social networks in governing and directing economic relationships in Senegal. [39]

Despite Senegal's reputation as a secular state, a complex mix of culture and religion permeates all aspects of social and economic life and has contributed to peace and religious tolerance which is unique to Senegal. The strong reliance in Senegal on social norms, social contacts, and the influence of cultural practices in determining de facto economic "rules of the game" will be important to keep in mind to ensure that programming is sensitive to these factors, and, to the extent possible, leverages them to improve development outcomes.

A complex mix of culture and religion, mediated by the Sufi brotherhoods, permeates all aspects of social, political and economic life in Senegal. They have long been recognized for their economic power, especially in agriculture, but less is known about their contemporary influence. A comprehensive study of faith and development in Senegal, published in May 2016 by the Berkley Center for Religion, Peace and World Affairs at Georgetown University, [40] concludes that no development intervention can ignore these unique institutions: *"Senegal's deliberate and parallel secular and Islamic traditions can complicate policy decisions, and there are tensions between them (as well as creative complementarity) reflected in the constitution, as well as in various laws and regulatory mechanisms. Senegalese, especially among the elite, highlight and support Senegal's commitment to secularism. However, Senegalese secularism is distinctive, a unique "social compact" that inter alia implies that Islamic values are respected and understood as fundamental to national identity."* Page 13[41]

The religious brotherhoods, as well as kinship, community, and other social networks are major organizers of economic production. In the absence of formal state mechanisms, these networks offer services that facilitate economic transactions and production. These services include searches for potential transaction partners, identification of potential opportunities, access to finance, guarantors for transactions, conflict resolution mediation and adjudication, access to finance, among others. As such, a considerable amount of economic power flows through these networks, and any development program must be cognizant of these dynamics. This also means that cultural norms heavily influence the structure of economic transactions that occur within these networks, with unknown implications for equality of access and inclusion. This also implies that these networks are key actors in the political economy of economic decision-making, reflected – for example - in Table 1-1 (page 20) produced by Dalberg Associates in an assessment of key drivers of decision-making in agricultural policies, and must therefore be included in stakeholder analyses and assessments as program development and implementation progress.

These dynamics are critical for understanding economic inclusion in Senegal. For example, recent studies on the role of social networks in the absence of formal contract enforcement mechanisms

[38] Ibid.

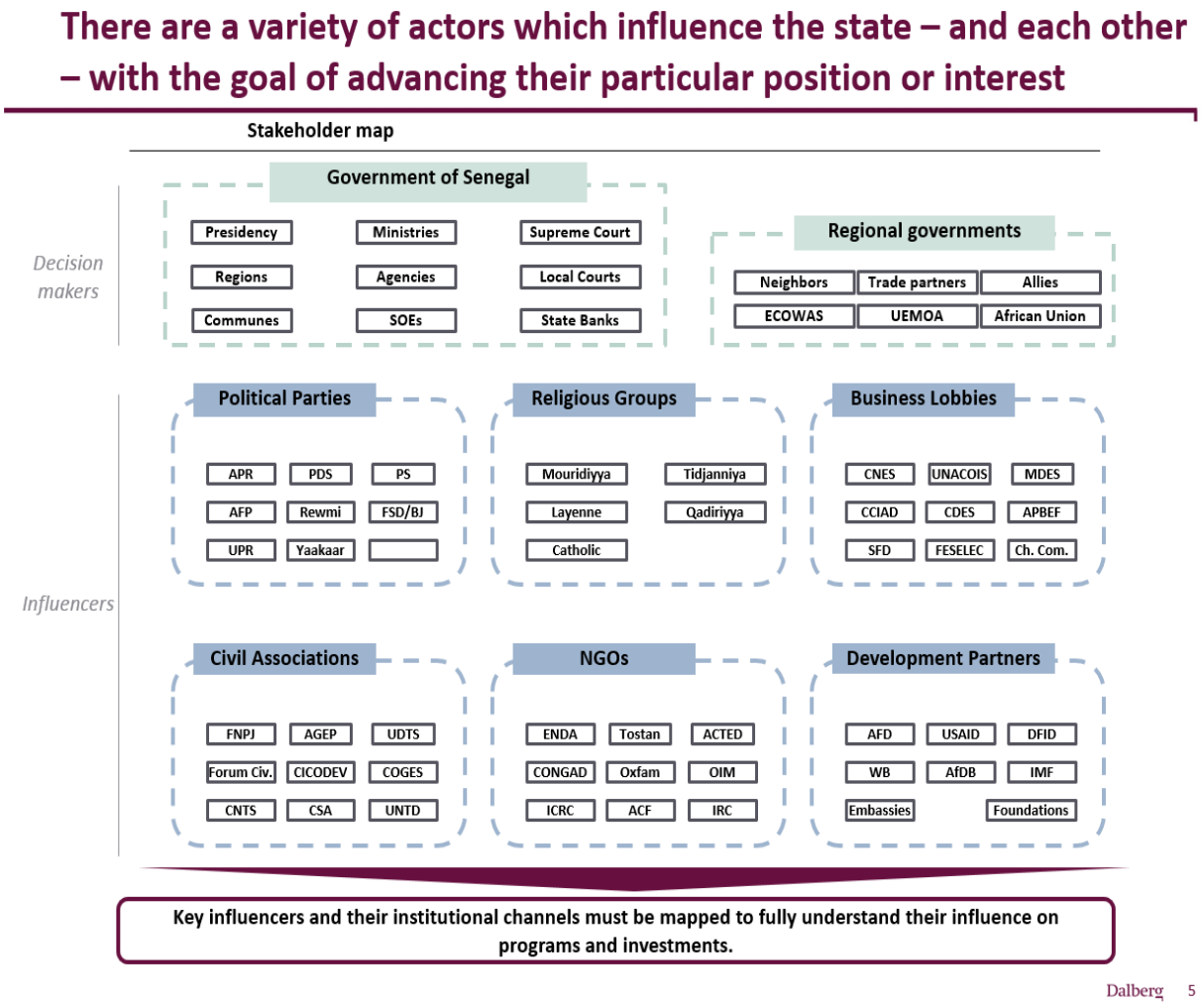
[39] See Granovetter (1985) for a discussion of the economic importance of 'weak' ties. Informal Trading Networks in West Africa: The Mourides of Senegal/The Gambia and the Yoruba of Benin/Nigeria By Stephen Golub and Jamie Hansen-Lewis, https://www.swarthmore.edu/sites/default/files/assets/documents/user_profiles/sgolub1/Chapter%208%20final.pdf

[40] https://berkleycenter.georgetown.edu/publications/faith-and-development-in-focus-senegal

[41] Idib, page 13

indicate that mutual cooperation and informal contract enforcement does not work well when parties to the agreement are not of equal social status. In a hierarchical society such as Senegal, this implies that without stronger contract enforcement mechanisms, economic transactions fostered through informal contracts takes place primarily among people with comparable socioeconomic status, limiting the potential for economic mobility and inclusion. This disproportionately affects women, given their a priori diminished social status relative to men. [42]

Figure 2- 18: Political economy map of Senegal from Systems Analysis Exercise conducted in August 2016



Source: Collaborative Dalberg Associates, Core Team, and MCC product

Senegal's dominant informal sector relies, at least in part, on the strength of social, ethnic and religious networks and institutions, particularly the brotherhoods, and their emphasis on entrepreneurship and obligations. They can provide access to information, resources, cooperation, and the ability to conduct business transactions grounded on trust rather than formal

[42] See Social Networks as Contract Enforcement: Evidence from a lab experiment in the field, Arun G. Chandrasekhar, Cynthia Kinnan, and Horacio Larreguy https://stanford.edu/~arungc/CKL.pdf

structures. They may also serve as gate-keepers with political as well as economic influence, which needs to be understood to avoid elite capture of the benefits of MCC investments. Their power is more complicated for women entrepreneurs who may benefit through association with the male-dominated brotherhoods, as long as they maintain conservative positions on issues of gender inequality and women's autonomy.

The gender and social inclusion issues in Senegal are extremely complex and nuanced, and depend on sex, religion, class, education, ethnicity and geographic location. Looking forward, gender and social inclusion will need extensive research in each binding constraint in order to fully inform the concept note, design documents and compact.

2.6 Environmental and Climate Change Considerations for Sustainable Growth[43]

With the rise of desertification, decreasing rainfall and agricultural yield, poverty has increased in rural areas forcing the youth to seek new opportunities in the urban areas, where most of the government investments have been concentrated. Climate change in Senegal is predicted to manifest as a decrease in the amount of rainfall—however with increased event intensity, increased temperatures, and sea-level rise. Drought and saline intrusion threaten water supplies, while sea-level rise along with coastal erosion threaten infrastructure. Meanwhile, ongoing migration to urban-coastal areas and degraded natural resources are already aggravating development challenges. The impacts of climate change and the options for adaptation will vary according to the biophysical and socioeconomic factors prevailing in each of Senegal's seven agro-ecological zones: River, Niayes, North Groundnut Basin, South Groundnut Basin, Sylvo-pastoral zone; Eastern Senegal and Upper Casamance; and Lower and Mid Casamance. In general, changes in precipitation are characterized by a meridional distribution of relative decreases on rainfall. The South will get drier than the North. Reductions in rainfall will be more marked in the South West and less noticeable in the North West.

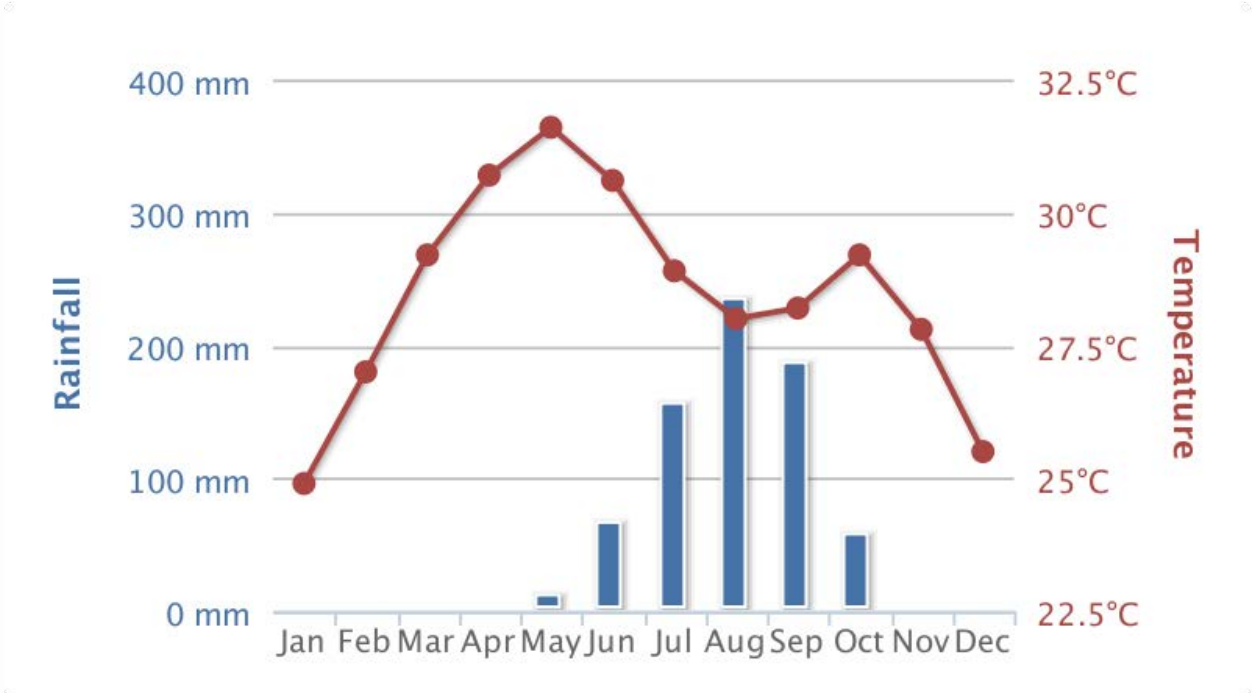
The Senegalese government has been responding and paying very close attention to climate change and its effects.

Climate Trends:

- Mean annual temperature has increased by 0.9℃ since 1960.
- Statistically significant rainfall decreases of around 10mm to 15mm per decade have been observed in the southern regions of Senegal in the wet season (July-September) between 1960 and 2006.

[43] Sources:
http://www.preventionweb.net/files/21861_13379pana1.pdf
https://www.undp-aap.org/countries/senegal
https://undp-adaptation.exposure.co/a-glimpse-of-climate-change-in-senegal
http://www.unep.org/regionalseas/publications/otherpubs/pdfs/Mangroves_of_Western_and_Central_Africa.pdf
http://community.eldis.org/.5b9bfce3/SEN-00-02-Senegal-CCVA_CLEARED.pdf
http://www.fao.org/africa/publications/nature-and-faune-magazine/
http://www.culturalpractice.com/site/wp-content/downloads/3-2010-31.pdf
http://www.greatgreenwallinitiative.org/sites/default/files/publications/harmonized_strategy_GGWSSI-EN_.pdf
https://www.thegef.org/gef/great-green-wall
http://www.lse.ac.uk/GranthamInstitute/legislation/countries/senegal/

Figure 2- 19: Average monthly temperature and rainfall for Senegal from 1990-2012



Source: World Bank
http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_historical_climate&ThisCCode=SEN

Downward trend in rainfall and depletion of the natural resource base[44]

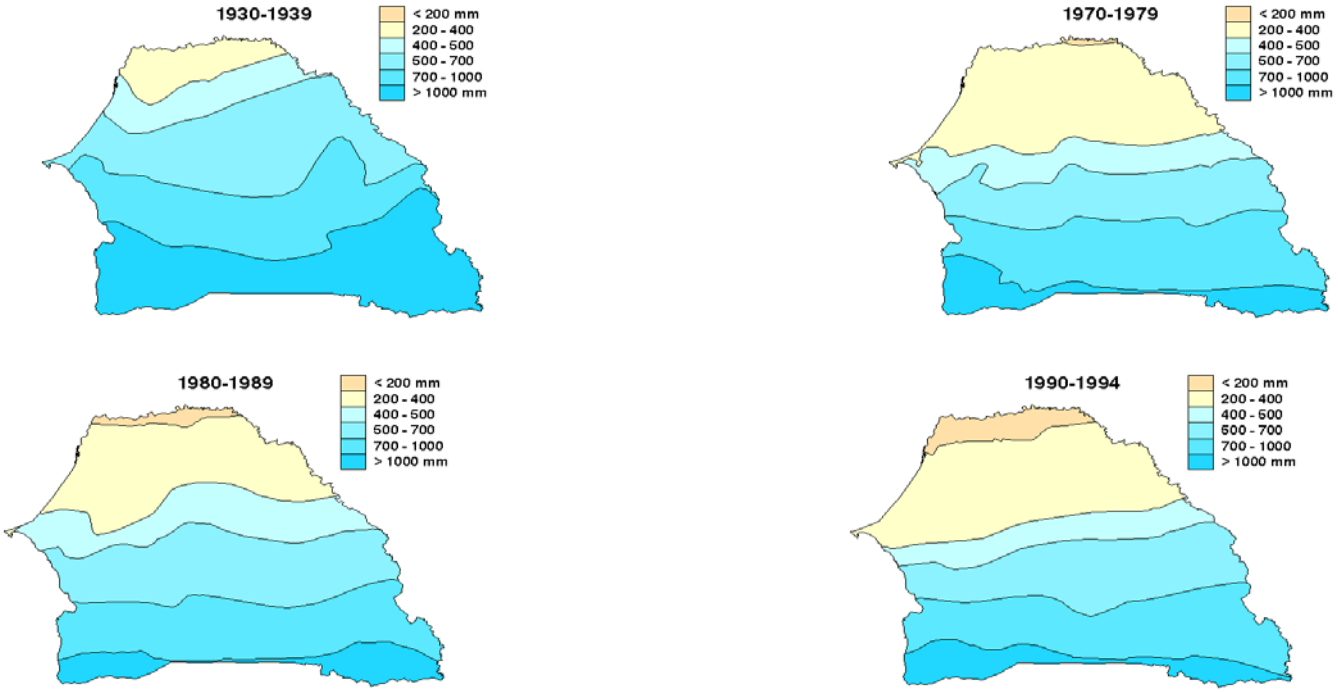
- Annual loss of forest areas estimated between 100,000 ha and 250,000 ha respectively for humid and dry forests
- The Sahelian ecosystem is vulnerable to erosion, droughts, deforestation and locusts
- Overall decline in rainfall over the past 30 years, as well as the fact that 57% of energy needs is supplied by fuelwood and charcoal, translate into extreme pressure on natural resources.

Future Projections:

- The mean annual temperature is projected to increase by 1.1℃ to 3.1℃ by the 2060s, and 1.7℃ to 4.9℃ by the 2090s. The projected rate of warming is faster in the interior regions than in areas closer to the coast.
- A wide range of rainfall changes are possible for Senegal but the likelihood is for decreases, particularly in the July-September wet season.

[44]USAID/Senegal MCA Jumpstart Briefing, February 2004

Figure 2- 20: Rainfall Evolution 1930-1994

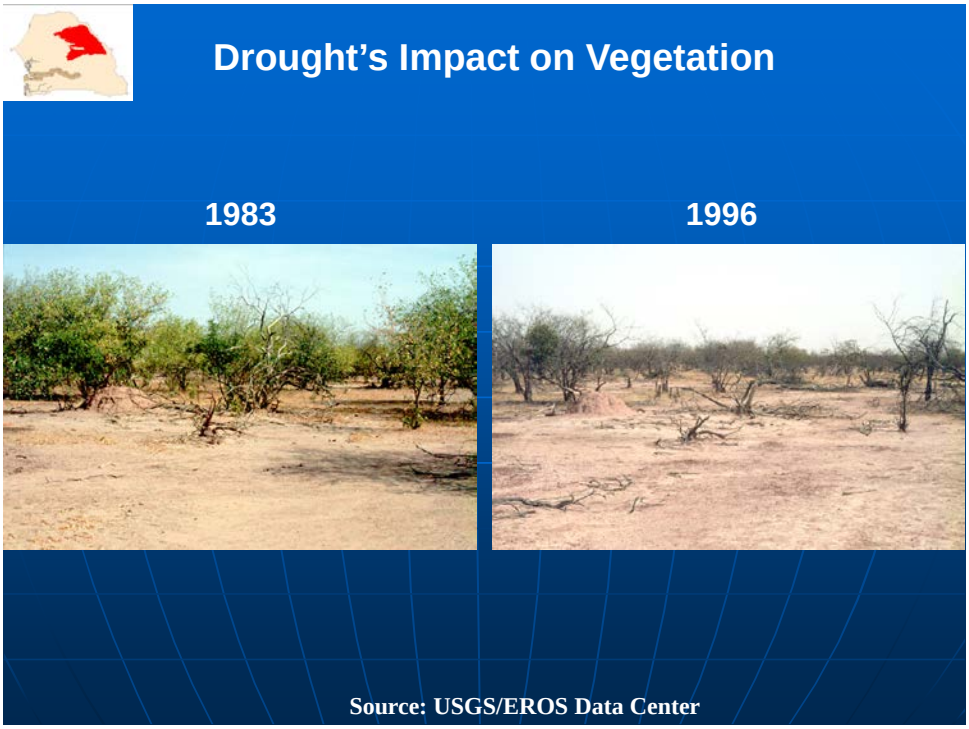


Source: U.S. Geological Survey, EROS Data Center

Spatial Variability:

Senegal is divided from North to South into seven agro-ecological zones: River Basin, Niayes, North Groundnut Basin, South Groundnut Basin, Sylvo-pastoral zone; Eastern Senegal and Upper Casamance; and Lower and Mid Casamance. The impacts of climate change and the options for adaptation will vary according to the biophysical and socioeconomic factors prevailing in each of these zones. In general, changes in rainfall are characterized by a meridional distribution of relative decreases of rainfall. The South will get drier than the North. Reductions in rainfall will be more marked in the South West and less noticeable in the North West.

Figure 2- 21: Ecosystem vulnerable to drought and soil degradation 1983-1996



Drought and population pressures have placed intense strains on Senegal's present agriculture and natural resource management (NRM). Much of Senegal's agricultural land has been degraded and is further constrained by substantial variation and an overall decline in rainfall. Improved conservation and more effective use of limited agricultural resources thus remain key to sustaining rural livelihoods. [45]

2.6.1 Key Sector Vulnerabilities (Economic, Social and Gender implications)

The 2006 National Adaptation Program of Action (NAPA) highlights the three priority areas for climate change adaptation: coastal zones, water infrastructure, and agriculture sectors. It also outlines the following priority adaptation responses: restoration of mangrove swamps, reforestation, biological stabilization of sand dunes, and protection against beach erosion, salinization prevention measures, irrigation and water conservation projects, soil fertility restoration, crop alternatives, and education.

Agriculture, Livestock and Food Security

Currently at 13.8% of GDP, agriculture remains vitally important to the Senegalese economy and to its inhabitants, encompassing 77.5% of the work force. Currently, over 65% of Senegal's arable land is cultivated, and it is expected that by 2050, almost all arable land will be cultivated. The sector consists primarily of rain-fed agriculture, which is especially vulnerable to increases in temperature, changes in timing and amount of rainfall, and increases in the frequency of dry spells

[45] USAID/Senegal's Country Strategic Plan 1998-2006

and droughts. The consequences of this rainfall variability are: more evaporation demand in plants; slowdown in the growth of crops that affects yields; negative effects of salt water intrusion in traditional rice-growing areas that are already heavily affected by soil salinity.

According to the scenarios used by the scientific community, an increase of one degree in temperature on the surface of the earth in West Africa will promote flooding and lead to a decline by 2030 of more than 15% in the yields of rain-fed crops. General lowering of yields and production is compounded by a decrease in suitable land area. Farmer incomes will therefore continue to drop, exposing them to more acute levels of poverty. Climate change will have disproportionate effects on Senegalese women. They make up 70% of the rural workforce, yet have less access to credit, extension services and factors of production. Despite having smaller areas of land, because of the sex-segmented character of agricultural production, FAO reported that women manage 56% of the total area of rice cultivation, 49% of the area under hibiscus *(bissap)* cultivation, 27% of the area under bean cultivation, and 17% of the area under groundnut cultivation.

Livestock raising is primarily of the extensive type, particularly in semi-arid areas and savanna. The carrying capacity is linked to the length and severity of the dry season. Desertification is a major threat. Increasing temperatures favor drier conditions which affect pastoral activities due to the reduction in the availability of both water and biomass, which lead to increased animal mortality. Pastoral activities contribute up to 32% of GDP. Differences in the level of household dependence on crop farming and livestock raising correlate with levels of adaptive capacity, as measured by the assets households own, control, or access. Households in the North with mixed crop/livestock systems prove to be the wealthiest, followed by households in the South that depend primarily on livestock raising. Crop-dependent households in the South are poorest. In the North, where agricultural risk is greatest, households with access to cash spread their risk across the two systems — crop farming and livestock raising. In the South, where risk is less significant, wealthier households invest more heavily in livestock; conversely, poorer households are unable to invest in livestock.

Coastal Areas, Fisheries and Aquaculture

Senegal has over 700 kilometers of the Western Atlantic coastline. Climate change will have economic and social effects related to the contribution of fishery to employment and income, which constitutes 2.5% of total GDP. The fisheries resources potential is estimated to be 430,000 tons and fishing provides about a quarter million jobs of which 90% are in artisanal fisheries. Though their role is not often recognized, women are very active in fish processing and marketing. Women also derive significant incomes from shellfish collection, particularly in mangrove areas.

Coastal and estuarine zones are particularly nutrient-rich areas constituting nursery grounds for the development of juveniles of commercially exploited species. Four main rivers contribute to the enrichment of these coastal waters and also support the development of inland fisheries and aquaculture. However, climate change is contributing to a long term transformation at local, national and regional scales as manifested by parameter changes; temperature, wind and rainfall, with consequent effects in the frequency and intensity of extreme weather events (drought, flooding, heat waves, rising sea level). The rise in sea level due to polar ice melting is responsible and sea surface temperature increases leads to alterations in the distribution of fishing resources and the degradation of marine and coastal biodiversity, potentially devastating fish stocks. Senegalese dependence on fish is considerable (given between 45 and 60% of all animal protein intake by various studies). Therefore the impact of climate change on food security will be grave.

Rise in sea level also threatens human settlements and economic activities in coastal areas of Senegal. Some 67 per cent of the national population live in the Dakar coastal area. About 74% of Senegal's coastal housing is vulnerable. Coastal erosion in turn may result in destruction of infrastructure, businesses, natural resources, and ecosystems. The loss of coastal land due to a projected rise in sea levels of 0.5 to 1 m would undermine important agricultural land, infrastructure, and most population centers, leading to displacement and material losses. Between 55 and 86 square kilometers of beaches are at risk of disappearing due to sea level rise, storm surges, coastal erosion, with negative impact on tourism, and other economic sectors. "Green infrastructure" like wetlands and mangroves are under threat while at the same time they are key to address climate change. Senegal has unique and well-developed mangrove resources, all of which have suffered some decline since the 1980s. If not in a healthy condition, they cannot absorb and buffer the impacts and damage of higher tides, storm surges, and flooding.

Water Resources

There has been a decrease in rainfall since the 1960s with rainfall deficits ranging from 20 to 40 percent. Also observed are depletion trends of groundwater resources with falling water levels ranging from 5 to 10 meters. The consequences are, among others, more difficult access to water for household needs. Demands for domestic and non-domestic water (not including irrigation) are expected to increase by 32% between 2000 and 2020, further illustrating the need for long-term water management initiatives in Senegal.

Agriculture is the most water-consuming sector in Senegal with 1435 million cubic meters in 2000, representing 93% of total use. The predominance of flood and furrow irrigation combined with low irrigation efficiency contributes greatly to the waste of resources. On the other hand, excess water due to climate change in the form of flooding has an equally negative impact. For example, for the 2013-2014 season, more than 1400 planted hectares were lost to flooding. In Dakar, flooding has worsened over the years and high water can block entire streets, making it impossible for people to leave their houses. Public utility services such as potable water and electricity are suspended for days.

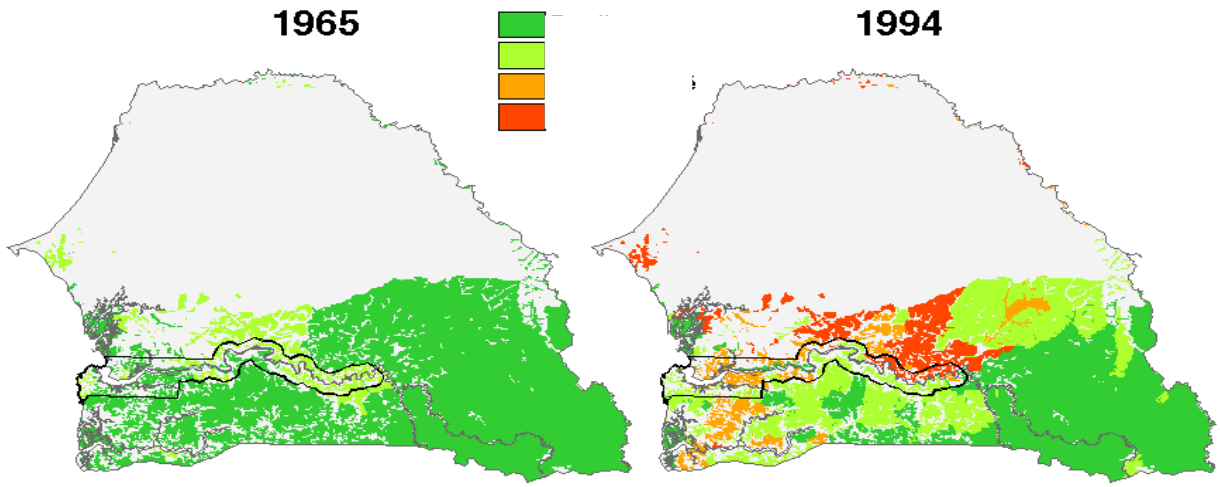
Tropical and Woodland Forests

Climate change has already begun to affect tropical and woodland forests in Senegal, which are important economically, ecologically, and scientifically. Increases in temperature, droughts, bush fires, and long-term declines in rainfall significantly affected vegetation and soil quality in two-thirds of northern Senegal, leading to high mortality rates of woodland vegetation and reducing biodiversity. Fourteen thousand people are directly employed in forestry, according to 2011 FAO data, and the sector contributed USD 161.5 million to the economy in 2011, which is approximately 1.3% of the GDP. Yet, the country is critically dependent on woodlands. Some 58% of households rely on firewood for fuel while 26% use charcoal produced from wood. While charcoal production is a male dominated sector, women are increasingly engaged in briquette making and other charcoal value chain activity. The government has decentralized the oversight of the forests and now community-driven forest management committees oversee forest management plans in the participating regions, where some 80% of the country's forest stand is located.

Forty five percent of Senegal is forested. Of this, a little more than 18% is considered pristine primary forest—one of the higher rates in West Africa. To slow the encroaching Sahara desert, Senegal announced in 2005 that it planned to promote a "Great Green Wall" of trees), from Dakar to Djibouti along the Sahel. In June 2010, Burkina Faso, Chad, Djibouti, Eritrea, Ethiopia, Mali, Mauritania, Niger, Nigeria, Senegal and Sudan signed a convention in Ndjamena, Chad, to create

the Great Green Wall (GGW) Agency and nominated a secretary to further develop the initiative. The Initiative is backed by the World Bank, EU, FAO, UNEP and many regional and international organizations. When completed, a 15 kilometers wide and 7,775 kilometers long tree swath will stretch from Senegal to Djibouti. Senegal remains the project's biggest champion, and so far has been able to plant over 12 million trees traveling up 150 kilometers and covering 40,000 hectares worth of land. Eventually, the Government of Senegal intends to extend it to 545 kilometers covering 800,000 hectares of the country. Countries and donors do not see it merely as financing a tree planting initiative, but as an investment in agriculture, rural development, food security, sustainable land and water management.

Figure 2- 22: Forest state 1965-1994



Source: U.S. Geological Survey, EROS Data Center

As a result of the decentralization of policy-making implemented in 1996, local authorities have a high degree of autonomy over the management of land use and natural resources, including forests. Thus, policies formulated at the national level provide guidelines for the development of local initiatives. The National Forest Service plays a crucial role in supporting local communities, advising on the management and financing activities of forest and land use issues. As part of these initiatives, in 1998 the Ministry of Environment launched the National Action Program Against Desertification, developing a long-term plan with measures to tackle the issue.

The National Forest Policy 2005-2025 provides the basis for national plans and programs in these areas. Grounded on the principle of decentralization and the fight against poverty, the main objective of the plan is to contribute to poverty reduction by promoting sustainable management and conservation of biodiversity and forest resources, reaching a socio-environmental balance, but also meeting the needs of the population.

2.6.2 Implications for the Energy Sector and Institutional Responses

Energy supply is dominated by biomass (47%) and oil (48%), with the remaining 5% provided by coal, natural gas, hydropower, and solar. All fossil fuels are imported, leaving the country highly vulnerable to price increases. The significant dependence on biomass, specifically wood and charcoal, has also taxed the native forests, contributing to their degradation.

Despite the negligible amount of installed renewable energy generating capacity, Senegal has significant solar energy potential, providing a strong opportunity to develop photovoltaic solar power. Wind energy potential is also significant between Dakar and Saint Louis and hydropower potential is estimated to be as high as 1,400MW. In 2012, the International Renewable Energy Agency (IRENA) prepared, in collaboration with the government, a Renewable Readiness Assessment (RRA). In the foreword to the RRA, the Minister of Energy and Mines stressed that the country's energy policy aims to increase the proportion of renewable energy and bio-fuels in the energy mix by 15% by 2020.

Senegal has been very active in taking part in global climate governance, especially at the UN level. The country released both a National Adaptation Plan (2006) for the UNFCCC and a National Strategy for Sustainable Development (in 2005), as part of the regional initiative of the UN Economic Commission for Africa.

At the national level, the foundation of the National Committee on Climate Change (COMNACC) in 2011 contributed to creating a central platform for co-operation on climate change. One of the key roles of the Committee is following the activities developed at the UNFCCC, thus reinforcing the link between global and national climate politics.

CHAPTER 3: IS LACK OF ADEQUATE ENERGY INFRASTRUCTURE A BINDING CONSTRAINT TO GROWTH?

3.1 SUMMARY ANALYSIS

Limited access to affordable electricity is a significant impediment to private sector development. Electricity is generated primarily by oil-fired plants. As a result of this limited access to electricity, Senegal suffers from one of the highest production costs in sub-Saharan Africa: about US$0.30 a kilowatt-hour (kWh). To illustrate how bad this is, power tariffs in most emerging market areas fall in the range of US$0.04 to US$0.08 a kWh. Even relative to sub-Saharan Africa, Senegal scores badly; its tariff is more than twice the average tariff of US$0.13 a kWh. In parallel, its electricity prices are among the highest in sub-Saharan Africa, set at about 30–40 percent below cost recovery. Overall, access to electricity remains low because of high costs and insufficient generation.

The energy sector in Senegal, electricity especially, is dominated by one big public firm, SENELEC. Ninety nine percent of firms reported SENELEC as their main provider of electricity. Table 3-1 summarizes data on electricity and electricity-related issues. According to a survey of firms in Senegal in 2013, *Productivity of Small and Medium Enterprises in Senegal: the Effects of Power Outages*[46]*: Fifty seven percent of total firms reported electricity as a major concern; considering size, 57.4 and 66.7 percent of SMEs and large firms, respectively, were affected. In a typical month, power outages occurred 26 times on average for the Small and medium-sized enterprises (SMEs), and 15 times for the larger firms, with an outage lasting more than 2 hours on average. Consequently, firms faced a certain number of challenges, leading to some adjustment or coping costs. For instance, 41 percent of SMEs and 50 percent of large firms reported that production stopped during power outages. Firms that continued operating during outages had their capacity reduced to around 80.5 percent for SMEs and 90.5 for larger firms. The immediate consequence following this problem was related to whether or not wages were paid for idled workers. Ninety-nine percent of SMEs, among those for which activities stopped during power outages and all of their larger counterparts reported paying wages for workers in electric outage time. That was probably because most workers were, and still are, paid on a monthly instead of an hourly basis in Senegal. This could be a major source of inefficiency since more output could have been reached for the same cost.* [47] *For firms in agriculture and food processing, losses could take other forms such as losing stocked outputs that are heavily electricity-dependent, dairy products for instance. Respectively, 27.4 and 16.7 percent of SMEs and large firms reported their product quality being affected by power outages.* [48]*. In the end, SMEs reported losing around 34 million FCFA on average, which amounts to a total loss of 51.4 billion overall; the average loss was 349 million FCFA for large firms, amounting to 44.2 billion FCFA in total. In relative terms, these figures amount to about 5 and 8.3 percent of their total sales in 2011, respectively.*

[46] Cissokho (April 2015), Productivity of Small and Medium Enterprises in Senegal: the Effects of Power Outages, https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=CSAE2016&paper_id=242, p. 8

[47] Note that the policy solution is not necessarily to move towards hourly or daily wages for workers, as this could have its own costs in terms of increased employee turnover or unavailability of trained employees if workers search for other work to supplement a decrease in overall earnings.

[48] The indicators show the extent to which firms are faced with failures in the provision of electricity and the effect of these failures on sales. Inadequate electricity supply can increase costs, disrupt production, and reduce profitability. International Finance Corporation, Enterprise Surveys, Senegal (2014) https://www.enterprisesurveys.org/~/media/GIAWB/EnterpriseSurveys/Documents/Profiles/English/Senegal-2014.pdf

3.2 BACKGROUND AND BENCHMARKING

According to the latest report of the World Bank Doing Business, Senegal ranks 170th of 189 countries for the "Getting Electricity" indicator. Getting a new electricity connection for a new business in Dakar requires seven procedures, takes 81 days, and costs almost 5700 times the average personal income.[49] [50]

The severity of Senegal's electricity problem has eased significantly in the last several years. In the 2007 WBES, 41.2% of firms noted electricity as a major obstacle to their business; in 2014, this was reduced to 8.1%. In the same period, the number of outages per month dropped from 11 to 6, and the duration of those outages diminished from 6.2 to 1.8 hours. Even though back-up generator ownership by firms has increased from 55.4% to 64.2%, the share of power coming from those generators has dropped almost two-thirds, from 13.5% to 4.7%.

Despite significant progress in terms of access, quality, and reliability, firms, individuals and studies continue to complain of access to electricity as a major barrier to operating profitably in Senegal. In Senegal's WBES 2014, 8% of firms cite electricity as the biggest constraint to doing business and 48.2% say it is a major constraint. Fieldwork also revealed strong complaints about the cost of energy. Complaints seemed to be particularly acute for medium-sized and smaller firms, although a large proportion of large firms in the WBES complain about electricity.

The main problem firms face with respect to electricity appears primarily to be cost, given recent improvements in reliability of service. The subsidized average rate that firms face is 22.7 cents per Kwh, and does not reflect the social cost of generation in the form of recurring subsidy costs paid by the GOS to SENELEC.

Electricity has been a recognized barrier to economic growth in Senegal for several years. One AfDB report estimates that in the short run, a 1% increase in access to electricity increases total factor productivity by 12%, and by between 21-29% in the long run, depending on the calculation method used.[51]

Overall consumption per capita remains lower than would be expected given Senegal's income level; despite relatively good access rates (see Figure 3-1). This suggests curtailed consumption in the face of high prices.

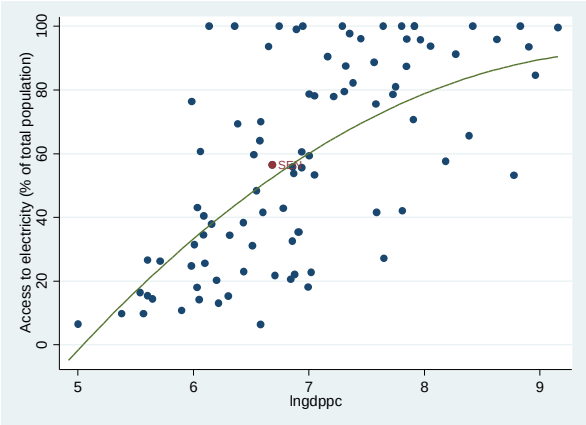
[49] http://www.doingbusiness.org/data/exploretopics/getting-electricity

[50] World Bank, Doing Business, Getting Electricity, Methodology used to calculate the cost of an electrical connection , http://www.doingbusiness.org/methodology/getting-electricity

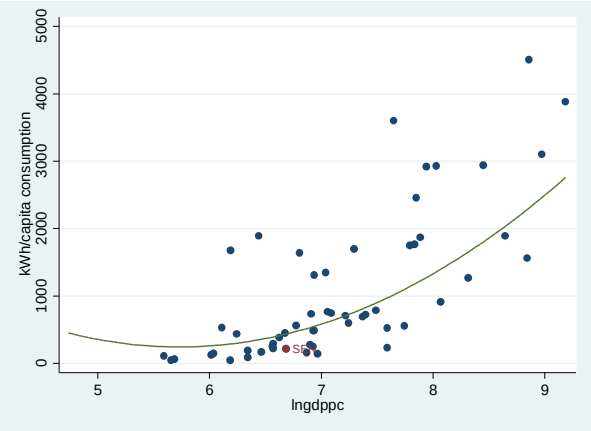
[51] African Development Bank Group, The Main Obstacles to Firms' Growth in Senegal, Implications for the Long Run (No 208, August 2014) http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/

Figure 3- 1: Indicators of an energy issue

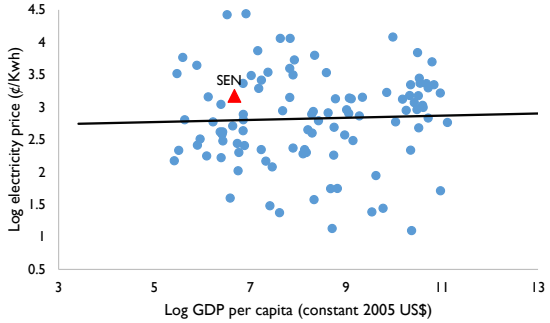
National access levels are relatively good.



However, utilization per capita is weak. This suggests curtailed demand – consumers are self-limiting their consumption due to high costs.

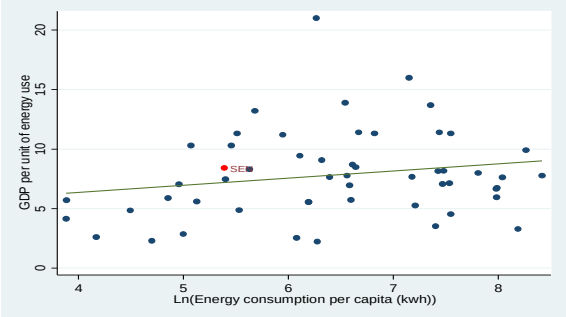


Price per kwh is relatively high; also high among comparators. Suggests high social value of energy consumption.



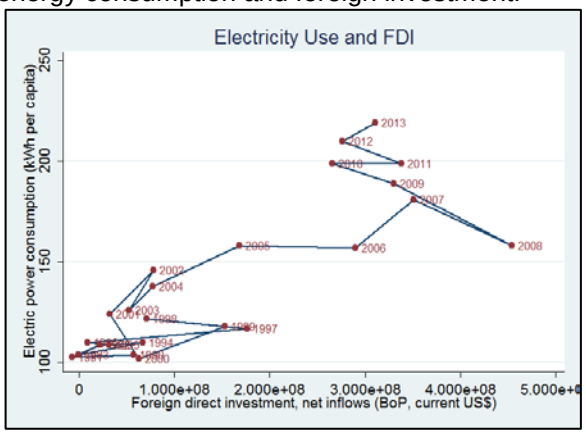
Source: WBDB; WDI

Senegal has a relatively high productivity of energy, indicating that firms are using energy intensively, which is consistent with a constraint on quantity or price.



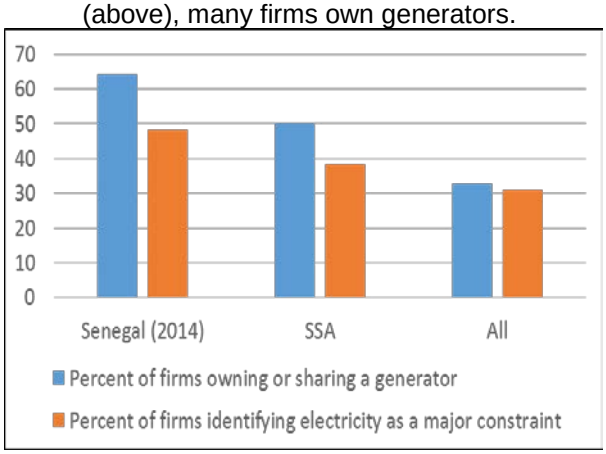
Source: WDI

There is a relatively strong correlation between energy consumption and foreign investment.



Source: WDI

In addition to substitution away from energy use (above), many firms own generators.



Source: WBES, Senegal 2014

A survey of firms in Senegal in 2013 shows that energy factors heavily into a firm's decisions (see Table 3-1 below).[52] Despite the fact that they have fewer and shorter outages, large firms consider energy a major concern more often than smaller firms. One-third of firms reported that the availability of power affects their hiring decisions; one-quarter reported effects on hiring decisions. Electricity shortages disproportionately affect medium-sized firms, which experience more supply and delivery delays, longer outages, and lower capacity utilization than small or large firms.

Table 3- 1: Firms' perception of electricity in Senegal

	Small	Medium	Large	*Total*
Electricity is a major concern	55.8	63.3	66.7	*57.6*
Number of outages in a typical month	25.5	26.9	15.0	*25.5*
Typical duration (hours)	2.2	2.4	1.6	*2.3*
Does production stop? (% yes)	38.5	49.5	50.0	*41.0*
Do power cuts affect hiring decisions? (% yes)	22.5	34.7	16.7	*24.8*
Do power cuts affect investment decisions? (% yes)	30.5	45.9	33.3	*33.6*
Average capacity utilization b/c of outages	80.9	79.2	90.5	*80.8*
Delivery delays from/to suppliers/customers? (% yes)	46.1/52.8	52.5/68.8	50.0/62.50	*47.5/56.3*

Source:

Source: CSAE Conference 2016: Economic Development in Africa

Overall, Senegal has a fiscally unsustainable mix of energy sources. The domestic markets for electricity generation, transmission and distribution are primarily controlled by a state-owned monopoly, SENELEC.[53] Biomass accounts for around 37% of energy consumption; 63% of total consumption is electricity generated through the burning of imported fossil fuels.[54] Senegal's fuel imports comprise almost one-quarter of total import value. Transportation and industry jointly consume 45.5% of the country's total energy.[55] Dependence on imported fossil fuels leaves Senegal highly vulnerable to international price increases due to increased fiscal burden of partially subsidizing the increase. Until the end of 2014, the per annum subsidies for the electrical sector was pegged at more than 110 billion CFA, close to 191 million USD, or about 2-4% of GDP,

[52] Lassana Cissokho (April 2015), Productivity of Small and Medium Enterprises in Senegal: the Effects of Power Outages, https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=CSAE2016&paper_id=242, p. 8

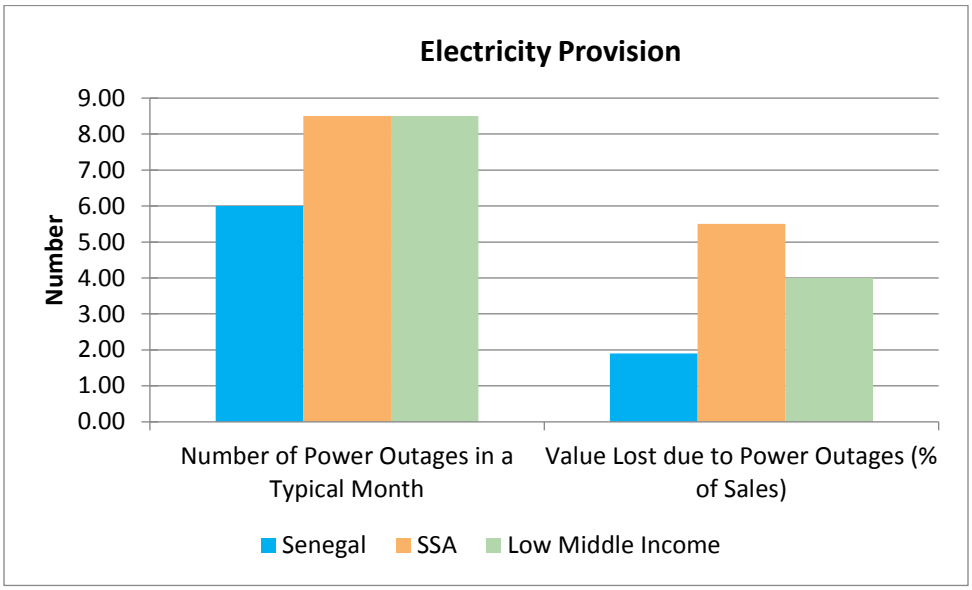
[53] SENELEC has concessional transmission and distribution in rural districts, where tariffs are higher and closer to cost-reflective. Information on rural tariff rates was not available in time for publication.

[54] International Energy Agency, Senegal (Balances for 2013)
https://www.iea.org/statistics/statisticssearch/report/?country=SENEGAL&product=balances&year=2013

[55] https://www.iea.org/statistics/statisticssearch/report/?country=SENEGAL&product=balances&year=2013

depending on the year[56]. Though low global oil prices have reduced pressure on the budget to provide these subsidies, energy costs remain high, and the GOS remains vulnerable to future shocks.

Figure 3- 2: Indicators on failures in electricity and their effect on sales



Source: IFC Senegal Country Profile

Notable recent investments to increase power include the addition of 250 MW reaching a power output of 821 MW with a target objective of 1,264 MW by 2019. From 900 hours of outages in 2011, the average of outages fell to 80 hours in 2016. Despite these improvements, the cost per KWh is very high. The social costs are even higher because of the subsidies the GOS provides to the sector. Senegal allocates a significant portion of its budget to support the electricity sector, which represents a major opportunity cost in terms of forgone development spending. In order to limit the pass-through of production costs to retail prices, the government subsidizes the electricity sector, which results in an explicit tariff compensation of about 1–1½ percent of GDP in recent years. Finally, subsidies to the electricity sector divert important resources needed to finance pro-poor and priority spending. For example, annual transfers to SENELEC were comparable to or higher than the resources allocated for capital spending in the health or education sectors. As a result, the budget finances the electricity sector, which leaves fewer resources for poverty-reducing expenditures.

However, the electricity sector represents an opportunity for Senegal, as investment in more efficient plants will eventually solve these issues. The authorities have adopted an investment plan to reduce production costs and increase capacity, but recurrent delays and changes to the plan hamper its effectiveness. The plan relies on more efficient power plants (Sendou, Tobène, and Contour Global) and imports from Mauritania. Eventually, electricity production would combine coal, natural gas, hydropower, and renewable energy. This program would not only

[56] IMF Country Report No. 15/15, Selected Issues paper on Senegal, January 2015: https://www.imf.org/external/pubs/ft/scr/2015/cr1515.pdf

increase production but also substantially reduce unit production costs. As a result of these delays, three issues mentioned above (electricity cost, lack of generation, and high budgetary costs) continue to weigh negatively on Senegal's growth potential. Against this backdrop, successful experiences in implementing energy sector reforms in some other sub-Saharan African countries could help Senegal ensure that reforms move forward and, subsequently, make the PSE growth objectives a reality.

Low access, high costs, and unreliable supply plague much of the continent, so although Senegal is among the outliers, it is not the only African country to face this challenge and can build on the experience of other countries' past reforms. Successful reforms incorporate price adjustment, investment in cost reduction, proper outreach to users, and a strategy that includes social safety nets. Investing to reduce cost and increase generation is the right strategy. All successful cases of energy reforms have indeed implemented investment to improve the energy mix, thus reducing electricity costs, improving generation capacity, and phasing out budgetary costs. What is peculiar about Senegal's situation are the recurrent delays in implementing its energy investment plan. An avenue that could be explored is finding ways to strengthen credibility in the plan by demonstrating commitment to implement it.

In 2015, the World Economic Forum ranked Senegal's electricity supply 107th $_{out}$ of 140 countries in its sample (WEF, 2014). [57] Electricity generation in Senegal is inadequate to meet the country's needs. Overall, this study confirms that the availability of electricity in Senegal is a binding constraint to investment and growth in the economy. Senegal needs the MCC's support in the energy sector to secure the affordable, reliable, and sustainable energy supply necessary to end poverty and promote shared prosperity. In so doing, the MCC will be assisting the GOS to pursue environmentally, financially, fiscally, and socially sustainable sector development.

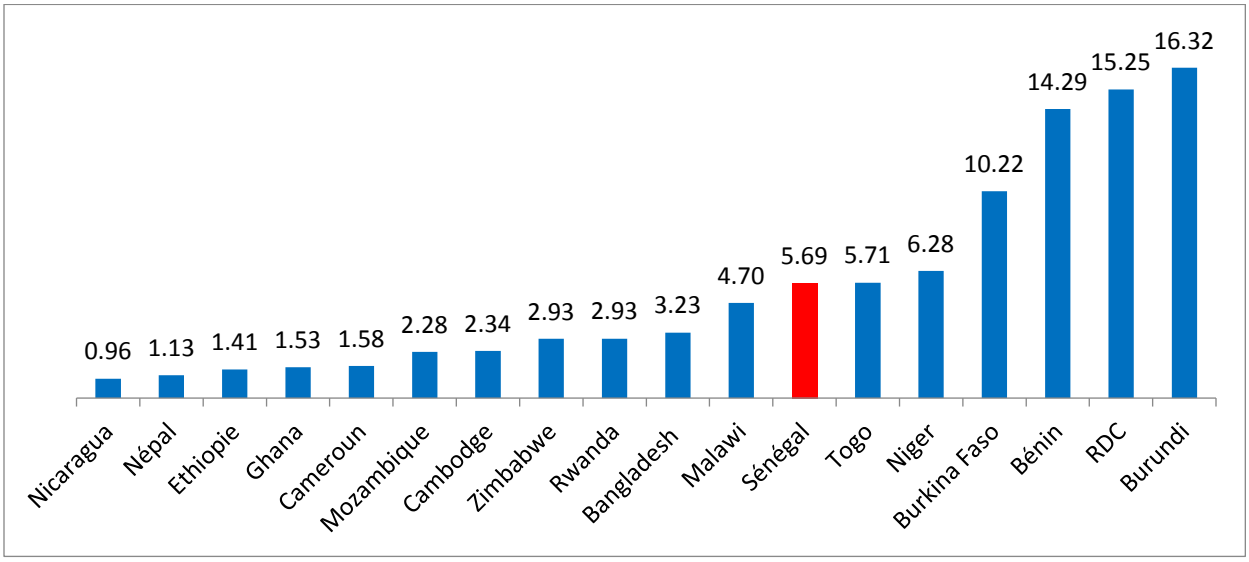
Power outages and the high cost of electricity, the low access to electricity outside of Dakar, and to a lesser extent, the reliability of power supply, reduces firms' cost-effectiveness by increasing costs and uncertainty of production.

Access to electricity is essential to the development of private investment and entrepreneurship. In Senegal, not only the connection is costly but also the price of kwh is the highest compared to the comparator countries. The level of circumvention also reveals the severity of the constraint of access to electricity even though in recent years there has been a significant improvement in the supply of electricity.

The high cost of electricity is the driver to the potential barrier to economic activity**.** High cost, and low reliability of electricity reduce firms' cost-effectiveness.

[57] The WEF asked, "How would you assess the quality of the electricity supply in your country (lack of interruptions and lack of voltage fluctuations)?"

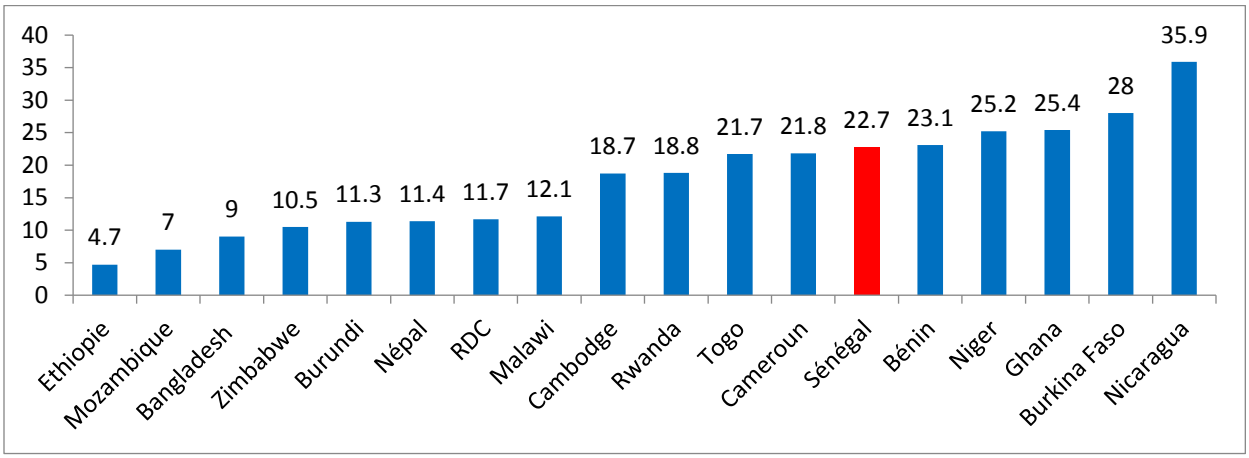
Figure 3- 3: Cost of Electricity as (% of GDP)



Source: Doing Business, 2016

It is found that economies in which the grid connection is simpler, faster and less costly are generally those where the supply of electricity is more reliable. In this respect, the Republic of Korea is the world's economy where the connection procedure is the simplest and fastest. In Senegal, SENELEC reduced the amount of the bond[58] by modifying the calculation formula (Doing Business 2016). Beyond the costs incurred in procedures and deadlines for connecting a user to the electricity grid, it is important to see whether the price of electricity is a major obstacle to economic activity.

Figure 3- 4: Electricity prices (in US $ cents per kWh)

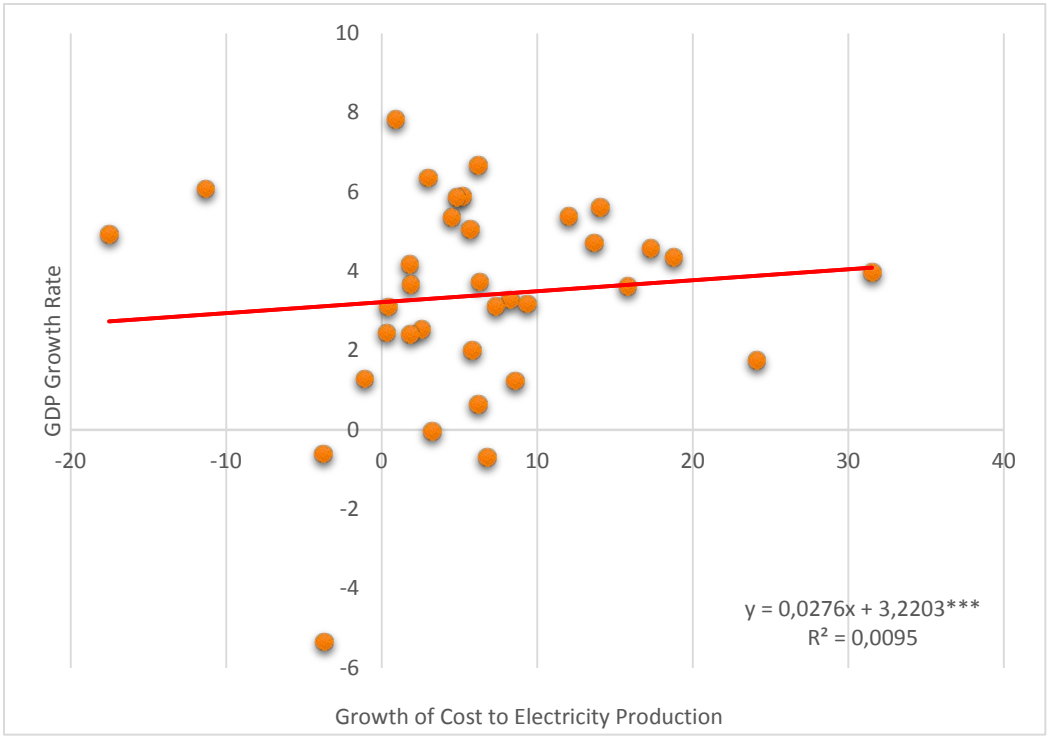


Source: Doing business, 2016

[58] A security deposit put up in the form of a bond: the customer pays the deposit in cash to the utility. The company does not lose ownership control over the full amount and can continue using it.

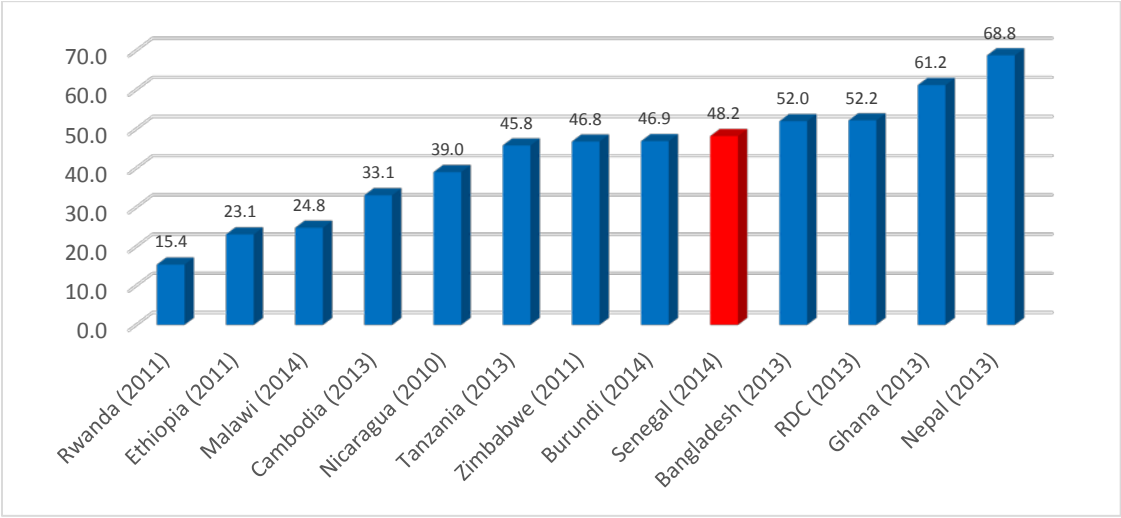
To calculate the price of electricity charged to users, Doing Business uses the total amount of the monthly electricity bill from a typical warehouse that stores its goods and operates in the largest business metropolis of the economy.

Figure 3- 5: Cost of electricity production is associated with GDP growth



Source: Doing business, 2016

Figure 3- 6: Percentage of firms identifying electricity as a major constraint

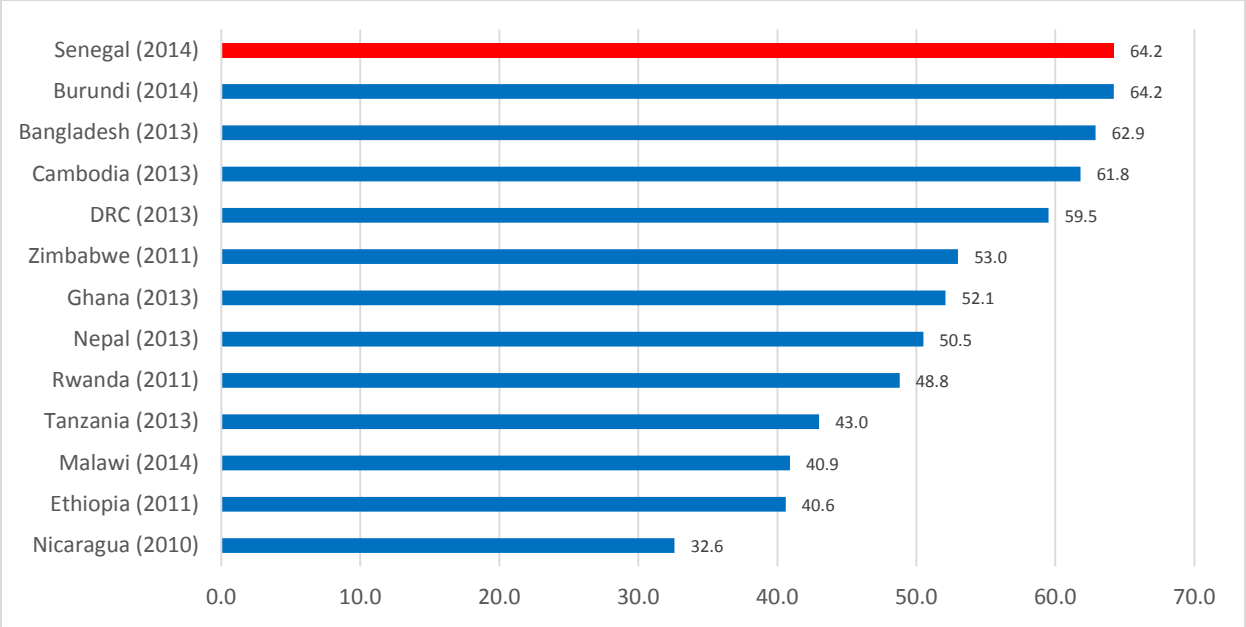


Source: Enterprise Surveys, 2014

By referring to comparator countries, electricity is a constraining factor for businesses in Senegal. Almost half of the firms consider electricity to be their major constraint. To offset this barrier, companies use other sources of energy such as generators that provide a means of bypassing the supply of electricity.

The Figure 3-7 below shows that 64.2% of companies have electric generators. This rate is the highest when compared to comparator countries.

Figure 3- 7: Proportion of firms owning or sharing an electric generator



Source: World Bank, Enterprise Surveys, 2014

Considering that the industrial sector requires more electric power than services, it is expected that industry components will be weak compared to service sector units in the event that access to electricity is a constraint. Senegal experienced an energy crisis that affected companies at great length. However, even if companies have suffered from this situation, other factors have also contributed to the modest performance of the industrial sector.

CHAPTER 4: DO MICRO-LEVEL RISKS AND DISTORTIONS POSE A BINDING CONSTRAINT TO GROWTH?

4.1 INTRODUCTION

This chapter examines risks to receiving returns on investment that occur at the microeconomic level. The macroeconomic level is discussed in Chapter 10. At the macro level, risks may arise from fiscal or monetary policies that create imbalances and economic instability. Risks at the micro level arise from issues like insecure labor market regulations; import barriers, contracts and property rights, and high tax burdens. Whether at the macro or micro level, these risks share the feature that they reduce an investor's expected share of overall investment returns, which HRV terms appropriability.

This chapter shows that micro-level risks to appropriability are a critical binding constraint to investment and growth in Senegal. In particular, ineffective bureaucracy and delays in implementing policy and regulatory reforms constrain investment and growth. For example, Senegal does well on various aspects of Doing Business Indicators, with an overall ranking among the 10 economies showing the most notable improvement on the Doing Business, 2014-15. Below we examine the most relevant aspects of micro-economic governance and the business environment.

To examine appropriability risks, we first review previous studies. Next we examine information on firm perceptions (Box 4.1) and complement this with quantitative data based on the four tests proposed by *Hausmann et al. (2008)*. In examining micro level risks to appropriability, the application of the tests determines them to be binding constraints. This chapter also examines aspects of appropriability risks from macro-economic stability and finds them not to be binding constraints.

Weak micro-appropriability arises through government policy and institutional failures which create risks and distortions at the micro level and drive a wedge between intrinsic economic returns and private returns to investment. Effective micro policies and supportive institutions are critical for fostering secure property rights; a predictable, transparent, and efficient regulatory environment; a relatively modest, non-distortionary fiscal burden;

Text Box 4-1: KPMG's Investor Profile for Senegal

"Both foreign and domestic firms tend to cite the same problems in doing business in Senegal – inefficient regulation and bureaucracy, ineffective commercial courts, high factor costs, labor laws that make it difficult to fire for just cause (permanent employees), and occasional disputes over customs classification, valuation, and taxation (p. 7)."

"Foreign firms in Senegal often cite burdensome labor law and arbitrary rulings by courts on labor cases as their number one frustration in doing business in Senegal (p. 8)."

"Senegal offers investors a relatively stable political environment, democratic institutions, two-day business registration, a relatively strong telecommunications infrastructure, an advantageous geographic location, a major seaport, a stable regional currency - the CFA franc (pegged to the Euro and guaranteed by the French Treasury), easy repatriation of capital and income, and abundant semi-skilled and unskilled human resources. Despite these obvious strengths, overly rigid and demanding labor laws, high factor costs, lack of clear title to property outside the greater Dakar area, an inefficient and inconsistent judiciary, and constraints in obtaining long-term credit from commercial banks have restrained private, foreign and domestic investment. Judicial, tax, customs, and regulatory decisions are frequently slow to be issued, influenced by political considerations, and non-transparent (p. 8)."

Available at: KPMG Country Profile, Senegal
https://www.kpmg.com/Africa/en/KPMG-in-Africa/Documents/Senegal.pdf

access to markets and information; relatively inflexible labor market regulation and high payroll taxes; and flexible factor markets—all of which are important to potential investors assessing their prospective returns. This chapter presents empirical evidence that weak micro policies and institutional failures represent binding constraints to growth in Senegal.

4.2 EVIDENCE OF CONSTRAINTS

The main challenges for Senegal are to accelerate, broaden, and deepen reforms. Unleashing Senegal's growth potential would require strong action on supply constraints, such as the regulatory framework and cultivation of a business climate friendly to FDI and small and medium enterprises (SMEs) expansion and upgrading, together with investment in human capital and infrastructure; reduction in inequality by expanding private employment opportunities in the formal sector and broader access to education and health services; and planning for adverse shocks to ensure adequate fiscal space to sustain the PSE investment plan.

Complex and burdensome administrative, regulatory and legal barriers reduce foreign firms' profitability and competitiveness by raising the cost of inputs and increasing costs of regulatory compliance. Domestic firms are incentivized to remain small and unproductive rather than upgrade to sophisticated modes of production. There are few real legal barriers to foreign investment. The Senegalese Investment Code provides equitable treatment of foreign firms. It also offers tax holidays and tax-free export processing zones. There are few barriers regarding total ownership of businesses by foreigners.

Despite Senegal's many advantages for investors, the fundamental weaknesses in the business policy environment hinder both foreign and domestic investment. Box 4-1 provides illustrative language that enumerates many of the problems in the business policy environment in Senegal. It is by no means unique in its assessment. These weaknesses have been noted in multiple investor guides and country profiles.[59] The PSE itself identifies the weak business environment as a major barrier to achieving the growth envisioned in the strategy.

In team consultations, a number of informal firms noted that they had tried to formalize at some point in time – mainly to benefit from improved access to finance, but compliance with the large number of regulatory and administrative hurdles pushed them back into the informal sector because the costs of compliance made them unprofitable and uncompetitive relative to their peers. In a culture where informality and evasion is commonplace, adhering to regulatory and administrative requirements can significantly impact a firm's bottom line. Compliance with opaque and steep regulatory requirements related to customs, tax, and labor regulations is a large risk for firms' expansion and subsequent formalization. Enforcement of regulations and requirements is seemingly arbitrary, and power is concentrated with state officials to make demands of firms with little transparency or accountability.[60]

[59] KPMPG, Country Profile, Senegal https://www.kpmg.com/Africa/en/KPMG-in-Africa/Documents/Senegal.pdf; http://www.state.gov/documents/organization/241941.pdf
BTI 2016, Senegal Country Profile Report, http://www.bti-project.org/fileadmin/files/BTI/Downloads/Reports/2016/pdf/BTI_2016_Senegal.pdf;
[60] Ibíd.

4.3 INFORMAL SECTOR

Many recent informal business surveys point to limited access to finance and limited education as major structural problems in the informal sector. According to the AfDB, Senegal's economy is comprised of about thirty major enterprises that provide the bulk of tax revenue, 250,000 small and medium enterprises (SMEs), of which about 33,000 are registered, and the remainder operates in the informal sector."[61] In the Senegal National Competitiveness Report for 2011, the GOS recognizes that the high level of informality is one of the main reasons for the country's low levels of productivity which are insufficient to reduce poverty. The extent and prevalence of informal activity in Senegal appears to be the direct result of a business policy environment that incentivizes smallness, invisibility, and low productivity over expansion, upgrading and investment. It therefore deserves some attention here.

The World Bank Enterprise Surveys (WBES) noted that competition from informal firms is the number one constraint to doing business, after access to finance; 23.2% of all firms in the survey state that the practices of informal competitors are the larger obstacle for their business, and 55.2% of all firms say it is a major constraint.

Informality is a poorly defined concept, and definitions of informality are not standard across surveys and other quantitative measures that seek to measure informality. Because the focus of this CA exercise is not informality per se, the technical team did not see a need to adopt a precise definition of informality. Generally, the team considers as informal any economic activity that is not reported or is underreported to relevant government authorities and/or which remain hidden, either partially or fully, from the state.[62] [63] [64].

Firms choose the extent of their formalization with respect to advantages and disadvantages to formalization of their activities. The main disadvantage to formalization occurs through increased visibility whereby firm activities become more easily identifiable by the state and therefore can be more easily made to comply with state legal, regulatory and administrative requirements. While there are advantages to formalization, notably greater access to finance and the ability to enter into formal contracts or more complex contracts with larger firms as part of larger or more sophisticated supply chains, the weakness of these services in Senegal lowers the return to formalization. Further, the extent to which formalized firms compete with informal firms lowers the

[61] Dalberg Associates, Assessment of Impact Investing Policy in Senegal, December 2012, .f. AfDB Senegal Country Strategy Paper 2010-2015, p.23
http://dalberg.com/documents/Impact_Investing_Senegal_Eng.pdf

[62] Note that informality may be visible to people who work for the state – public functionaries or elected officials, e.g. – but if those activities are not reported to or recorded by relevant state entities, they are considered informal. That is, officials may know about informal activities, even if those activities are not fully documented or reported to the state.

[63] The report containing data on informality use the term as defined by the producing organization. E.g., data on informal firms from ANSD use the data as coded by ANSD. Therefore, the reader should not consider that the use of the term informality is consistent across all uses in this report. Rather, the term is a useful concept to reflect, to a greater or lesser extent, the concepts of visibility and accountability to the government. Virtually all definitions of informality share this characteristic.

[64] This may be because firms are not productive enough to comply with those costs and maintain profitability, or because even productive firms can do better by failing to report their activities. The team takes the position that both are true: informality reduces productivity, and low productivity (in addition to a burdensome regulatory environment) incentivizes informality.

benefit to increased formalization due to additional legal and regulatory requirements that their competitors do not face. Anecdotally, the team heard from several firms during consultation which had tried to formalize in order to gain access to credit, but the cost of regulatory compliance was too much for them to bear in the interim period until they were able to access additional financing, and they were undercut by their informal competitors, so they slipped back into informality to survive.

The presence in Senegal of many medium- and large – informal firms suggests that the informal sector is not, as it is in many countries, merely a safety valve for formal employment wherein individuals become entrepreneurs for survival, not by choice.[65] Rather, the informal sphere contains many firms that are more complex, larger, and more productive – similar to more formalized firms. These larger informal firms are of particular interest because they demonstrate entrepreneurial potential, yet they choose to remain in the informal sector, with limited expansion potential, and therefore achieve size and turnover levels significantly below those of their formal counterparts. [66] While the focus of the CA exercise is not in identifying and remedying informality, the phenomenon of informality is analytically important for Senegal because of the relationships between size, productivity, and visibility. A lower level of detectability is an advantage of informality, although it is also limited by size. The larger informal firms become, the less able they are to hide their activities through a lack of reporting. As such, the benefits of informality are inversely related to size. On the other hand, firm size is positively related to productivity. Herein lies the catch-22 nature of the business policy environment in Senegal. The burdensome administrative, legal and regulatory environment incentivizes smallness, but small firms are significantly less productive than large firms. [67] Informal firms are also less able to enter into and engage in contractual agreements, both because they lack credible signals about their trustworthiness not to renege on an agreement, and because they are less able than more formalized firms to utilize formal administrative and judicial means to rectify the reneging of others.[68] Informality restricts the options of firms to organize their production. Because firms desire to "fly under the radar," and because of their limited contract enforcement capabilities, informal firms have strong incentives to limit the number and extent of partnerships with outside parties. They also have incentives to maintain reduced work staffs and rely on a single person or a few people in the firm to do even highly specialized administrative tasks. These factors together result in the lower productivity and lower value-added of informal firms.[69]

Furthermore, from a poverty standpoint, the strong associations with measures of informality and low productivity have important impacts on social inclusion and poverty. Jobs with informal firms are more likely to be precarious, risky, low-wage, and with limited protections for workers. Formal jobs at higher productivity firms are preferable in this respect, but the economy has not been able to add enough formal jobs annually to even keep up with population growth.

[65] The team affirms that this is undoubtedly also true. The majority of the informal sector, even in Senegal, seems to be "masked unemployment.",

[66] Benjamin and Mbaye (2012), The Informal Sector, Productivity, and Enforcement in West Africa: A Firm-level Analysis

[67] This hypothesis is supported by Cissokho (2015, unpublished) who suggests that informal firms are substantially less efficient than formal firms and that this is primarily due to inefficient scale (size) rather than to differences in pure technical efficiency (e.g. managerial characteristics).

[68] This is true not just for regular contracts, but for finance in particular. Access to finance is noted as the largest constraint by 38% of firms in the WBES.

[69] Benjamin et al (2012)

Dalberg Associates notes in a study on investment impact that "productivity in all sectors of Senegal's economy is hindered by the degree of informality. In agriculture, labor productivity of the informal sector – which comprises 98 percent of producers - is 10 percent of that of the formal sector. Moreover, between 2000 and 2009, the labor productivity of the formal agriculture sector grew more than 10 times faster than that of the informal agriculture sector."[70]

The problem in Senegal appears to be that the business environment incentivizes firms to adopt many practices and characteristics that are bad for economic growth and poverty reduction – that is, to remain small, rely primarily on informal and personal relationships, minimize documentation, and control as many operations in-house as possible. Modern economic production requires complexity and sophistication, and the Senegalese business environment strongly discourages both.

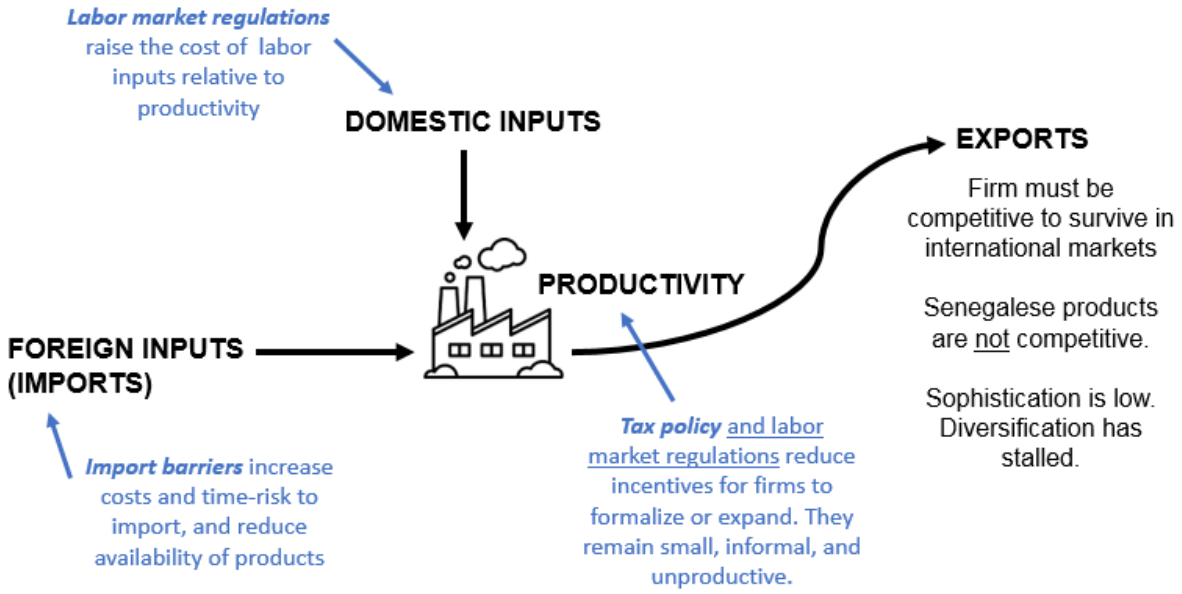
In this sense, it is not just that low-productivity firms decide to be informal – although that certainly is true in Senegal, like other countries – but rather that informality reduces productivity by reducing the ability of firms to engage in more sophisticated modes of organization and economic production.

The extent of informality in Senegal, and the presence of a relatively large section of the informal sector that seems truly "entrepreneurial," is analytically relevant, as it can be interpreted as the result of a business environment that incentivizes the expansion of small-scale, unsophisticated and low-productivity economic activity over larger, more complex, and higher-productivity modes of economic production. The African Development Bank comments on the informal sector in West Africa in general that "*Beyond poverty and social issues, the prevalence of informal activities is closely related to an environment characterized by weaknesses in three institutional areas, namely taxation, regulation and private property rights*,"[71] aspects which align closely to the findings of the analysis regarding the business policy environment.

Figure 4- 1: Logical Framework of Constraint in Distortionary Business Policies (DBP)

[70]Dalberg, Senegal National Competitiveness Report (2011), p.24
http://dalberg.com/documents/Impact_Investing_Senegal_Eng.pdf

[71] African Development Bank Group, Recognizing Africa's Informal Sector (2013):
http://www.afdb.org/en/blogs/afdb-championing-inclusive-growth-across-africa/post/recognizing-africas-informal-sector-11645/



Source: Authors

4.4 Three Major Business Environment Risks

The following sections detail the evidence around three specific Distortionary Business Policies and Policy environment (DBP) risks. These are Labor Market Regulations, Import Barriers, and Taxation and Tax Administration. These three areas are major components of the business and policy environment that firms face. However, they do not comprise an exhaustive list, nor do we attempt to prioritize one over another in this analysis. For example, the technical team has determined that Contract Enforcement is not a strong driver of the DBP constraint, but that it has significant impacts on the other nodes of the CA tree – notably finance and land. Subsequent root cause analysis and further deep-dives after the CA are expected to help the technical team identify additional policy barriers, if any, and prioritize those which are likely to have the largest or broadest impacts on private investment, if alleviated. Electricity, transportation, and human capital available to the formal private sector all require policy attention. Moreover, the large informal sector and low levels of FDI are the result of a poor business climate, clearly signaled by Senegal's low rankings in the World Bank's Doing Business Index. With the right reforms, an improved business climate, and sound fiscal policy, Senegal could attract the private investment, particularly foreign investment inflows, and achieve its growth potential in an inclusive manner.

Independent ratings of Senegal's overall micro- policy risks differ significantly, but several indicators show particular weaknesses especially regarding issues such as labor market efficiency, and import barriers, with mixed scores on regulatory quality. In 2014, World Bank's Doing Business ranked Senegal poorly—145th out of 189 on enforcing contracts; but in 2016, made contract enforcement more efficient by introducing laws regulating judicial and conventional voluntary mediation. The 2016 Doing Business gives Senegal poor rankings in dealing with construction permits (148th), paying taxes (183rd) and in getting credit (133rd). Although Doing Business no longer reports its rankings on employing workers, the last ranking (in 2010) was 172nd and the 2014/15 World Economic Forum ranks Senegal 68th in the world in labor market

efficiency. The 2015 Economic Freedom Ratings ranks Senegal 151st for labor market regulation and 133rd for business regulation.

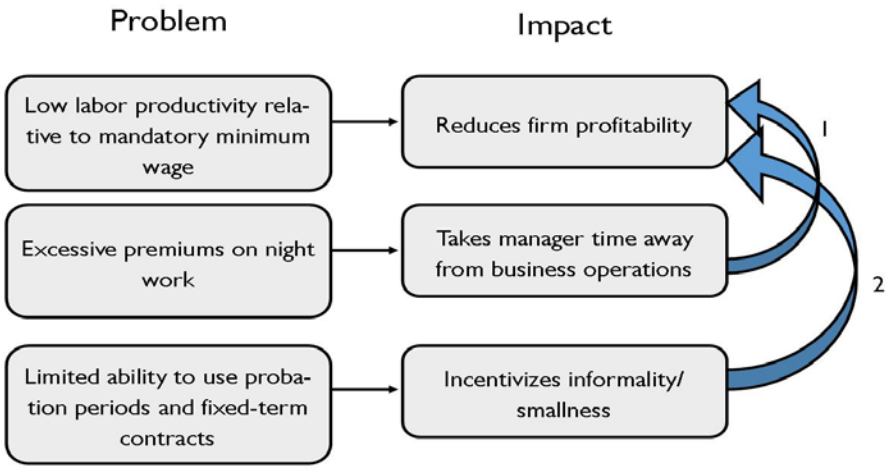
There is evidence of severe micro risks relative to Labor Market Regulations, Import Barriers, and Taxation and Tax Administration which we do find to be a binding constraint. These micro risks appear to meet all of the four tests of a binding constraint. The evidence shows that factors which limit appropriability— namely, weak protection of investor returns, barriers to entry and competition, and impediments to employing workers at a sufficient scale are likely to present the most severe obstacles to an investor attempting to innovate.

4.4.1 Labor Market Regulations

4.4.1.1 Summary Analysis

First, there are high and fiscal regulatory costs of employing and firing workers, particularly firing a worker costs as much as 38 weeks of wages. Secondly, firms surveyed report a low correspondence between pay and productivity. Payroll taxes do not encourage employment. Many workers are employed informally and Senegalese firms utilize other measures to an unusual degree in order to avoid some formal LMR requirements of employing workers, including sub-contracting and part time work, to circumvent various requirements. The formal requirements of employing workers make it unprofitable for firms to employ more of them or in many cases to invest at all. Small, less productive Senegalese firms are ultimately much less likely to grow to a scale or level of sophistication which allows them to compete internationally. In conclusion, the primary constraints are the rigidities associated with pay; the costs and barriers to firing workers; and high payroll taxes.

Example of relationships between labor market regulations and business impact



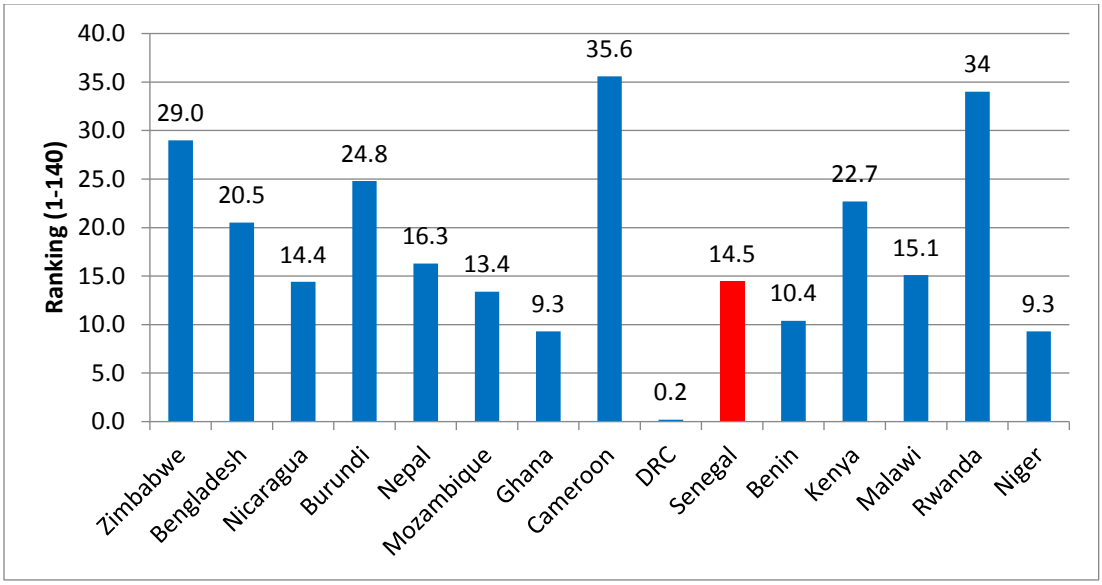
1. **Low managerial attention or effort reduces firm profitability**
2. **Extent of informality undercuts formal firms' profitability with potential customers (reinforcing cycle)**

4.4.1.2 Background and Benchmarking

Beyond preserving macroeconomic balances, Senegal seeks to perpetuate its economic performance by diversifying its sources of growth and sharing its effects. The labor market is central to Senegal's ability to generate income and increase business competitiveness. Empirical studies have shown that over-regulation of the labor market tends to reduce productivity, growth and employment and that high regulatory labor costs: (i) reduce the employability of growth; (Ii) would draw wages down; (Iii) would increase unemployment and (iv) limit investment and innovation, which are essential to productivity growth. In order to establish a proper balance between the interests of the employer and the rights of the worker, Senegal regulates its labor market through its Labor Code of December 1997.

The performance indicators measured by the World Economic Forum (WEF) on the labor market indicate that Senegal has a relatively flexible Labor Code compared to the comparator countries. In fact, market efficiency has improved over the past ten years as Senegal scores 4.2 out of a maximum of 7 and ranks 72nd ahead of countries such as Ghana (94th) and Nepal (99th).

Figure 4- 2: Efficiency of the Labor Market



Source: Word Economic Forum, World Competitiveness Report, 2015-2016

In addition, wage determination is particularly rigid in Senegal (99th out of 140 countries). This is counterbalanced by the ease of separation from an employee in terms of costs and procedures, a criterion for which Senegal has an acceptable rank.

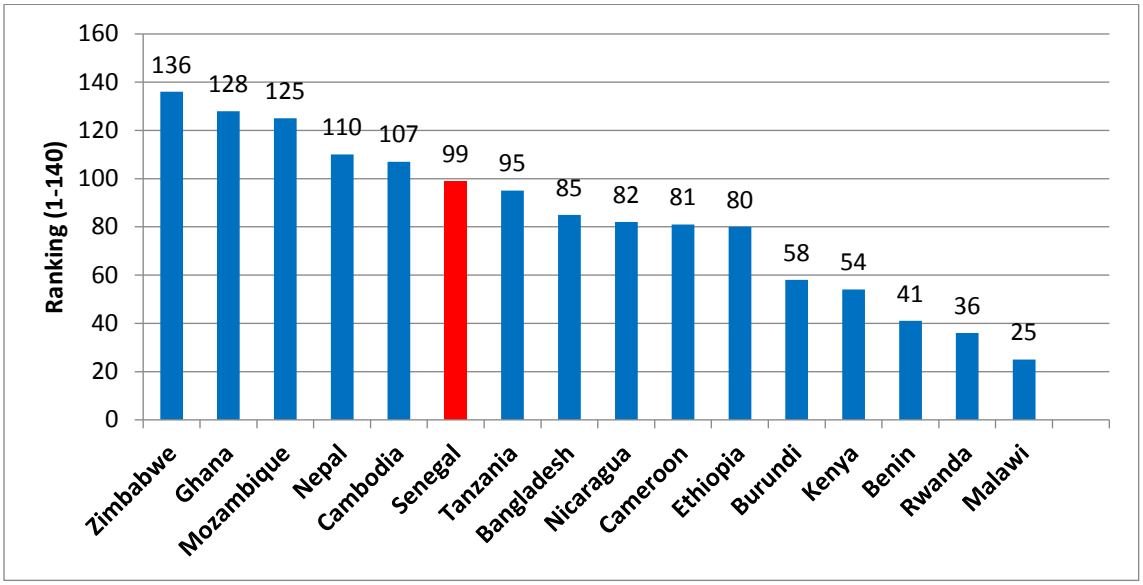
Survey respondents to the WEF Competitiveness Report put restrictive labor regulations as the third most problematic factor for doing business.[72][73] Relative to comparators, Senegal has a moderately flexible labor market overall (8/16), although it ranks 11th in terms of flexibility to

[72] Klaus Schwab, World Economic Forum - The Global Competitiveness Report 2014–2015 http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf

[73] See http://www.doingbusiness.org/~/media/FPDKM/Doing%20Business/Documents/Special-Reports/Women-in-Africa.pdf for a case study of labor market difficulties for a medium-sized textile firm in Senegal.

determine wages (112/122 for all countries). WEF 2014/15 ranks Senegal 90/122 in pay related to productivity. A simple index of labor market regulations using the World Bank dataset on labor market regulations from 2014 places Senegal's rank 187/188 in terms of the overall flexibility and quality of labor market regulations.[74] Labor market regulations are noted in other studies as a significant barrier to economic growth in Senegal.[75] Firms are required to pay large amounts in terms of social security and other labor taxes as well (24% of commercial profits for a medium-sized firm).[76]

Figure 4- 3: Flexibility in determining wages

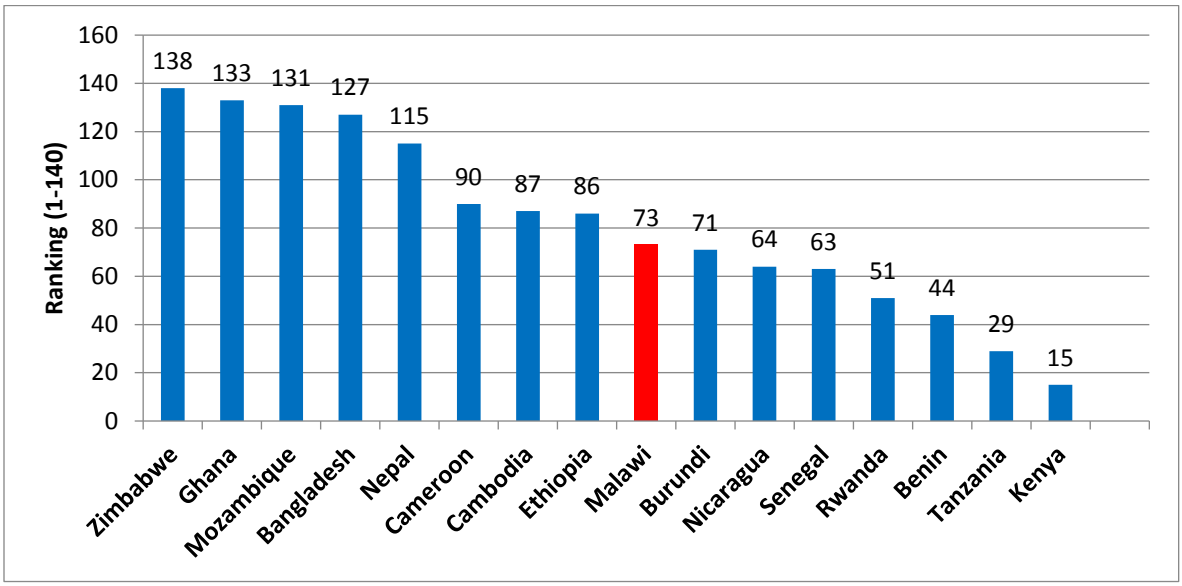


Source: Word Economic Forum, World Competitiveness Report, 2015-2016

According to the 2015-2016 WEF Competitiveness Report, Senegal has lower employee dismissal costs compared to the comparator countries. Senegal is only out-performed by Rwanda (51st), Benin (44th), Tanzania (29th) and Kenya (15th).

[74] Golub et al., Labor Market Regulations in SSA, with a focus on Senegal (2015), http://www.dpru.uct.ac.za/sites/default/files/image_tool/images/36/Publications/Working_Papers/DPRU%20WP201505.pdf
[75] Ibid, (although LMRs are not noted above infrastructure weaknesses or other aspects of the business climate as a major barrier to growth);
[76] WBDB 2016, Senegal

Figure 4- 4: Cost of firing an employee in weekly wages



Source: Word Economic Forum, World Competitiveness Report, 2015-2016

Although employment protection objectives are important, the Senegalese Labor Code appears to have a negative effect on job creation. In this respect, it is important to measure this effect and its impact on Senegalese productivity and economic growth.

A study of African export processing zones identified the stringent labor market regulations and employment requirements imposed on firms by the GOS in order to secure space in the Dakar Free Zone (DFZ) as a major cause of the DFZ's overall failure.[77] Firms in consultations indicated that the judiciary is strongly skewed in favor of labor, and any dispute brought to court by a worker will be decided in favor of the worker. When asked about labor market regulations, a GOS representative told the team about a potential investor who did not invest because of (1) concerns about electricity, and (2) the stringent labor requirements.

[77] World Bank Special Economic Zones, Progress, Emerging Challenges, Future Directions, https://openknowledge.worldbank.org/bitstream/handle/10986/2341/638440PUB0Exto00Box0361527B0PUBLIC0.pdf

Fluctuations in LMR requirements, although rare, have coincided with positive changes in employment in Senegal. A 2013 reduction in the labor tax contribution coincided with a 0.25% drop in the official unemployment rate.[78]

Text Box 4.2: Labor Market Regulations and Growth

Labor market regulations (LMRs) define the rights and obligations of workers and employers. LMRs define the rights of workers and employers in labor market transactions, often with the goal of protecting workers, employers, or enhancing the efficiency of labor market transactions. Overly stringent LMRs are hypothesized to have a number of adverse macro-level economic impacts. Overly restrictive LMRs have been found to: increase unemployment for women and youth; reduce the skill premium for educated workers; increase informal employment; and reduce overall economic efficiency by preventing the free movement of labor to their most productive activities.

References: Betcherman (2014); MacMillan and Rodrik (2011); Boeri et al (2008).

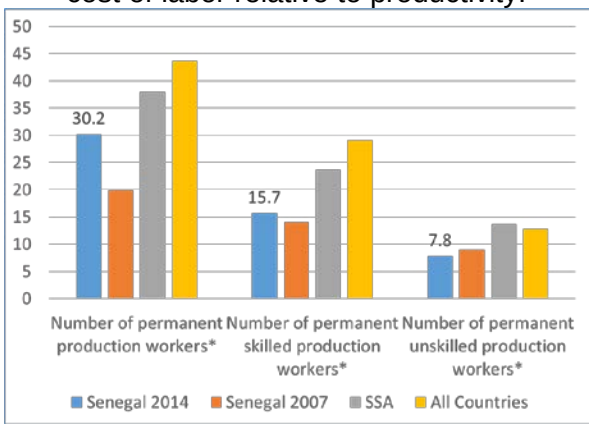
Text Box 4.2 References[79]

[78] Team's calculations using WDI data

[79] Betcherman, Designing labor market regulations in developing countries (2014), http://wol.iza.org/articles/designing-labor-market-regulations-in-developing-countries.pdf
McMillan and Rodrik, Globalization, Structural Change and Productivity Growth (2011), http://www.nber.org/papers/w17143.pdf
Boeri, Labor Regulations in Developing Countries: A Review of the Evidence and Directions for Future Research (2008), http://siteresources.worldbank.org/SOCIALPROTECTION/Resources/SP-Discussion-papers/Labor-Market-DP/0833.pdf

Figure 4- 5: Evidence of Labor Market Regulation problems

Manufacturers use significantly less labor than other countries, consistent with a high cost of labor relative to productivity.

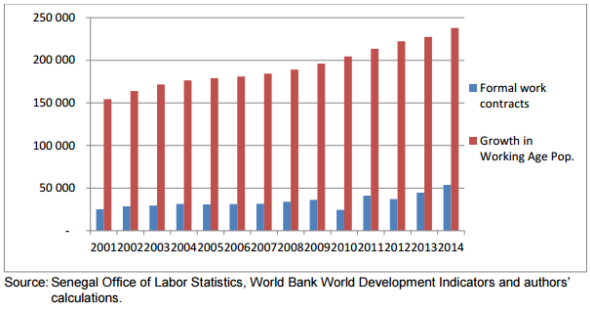


Source: WBES, Senegal 2014

There exists a strong positive relationship between labor tax contributions and official unemployment levels.

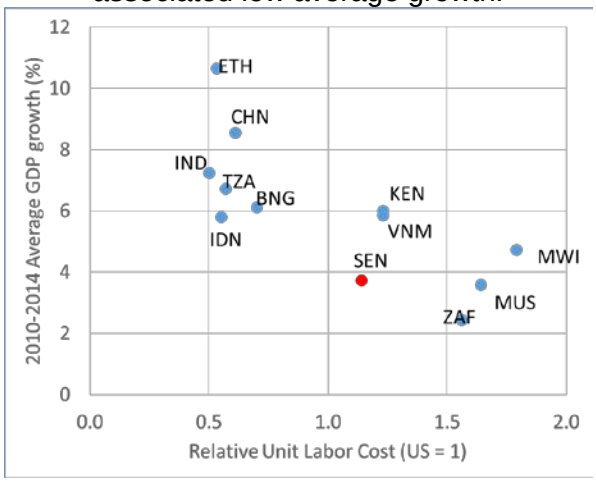
Source: WDI

Relative rates of formal work contracts are declining.



Source: Golub et al (2015), p. 13

Senegal has a high relative cost of labor and associated low average growth.



Source: Adapted from Ceglowski et al (2015)

However, perhaps due to the large amount of informality in the economy, labor market regulations are not a major concern of firms according to the WBES; only 4.5% of firms report that labor market regulations are a major constraint. Globally, measured labor market rigidity has only a weak correlation to firms' complaints about labor market regulations.[80] Although firms globally rarely complain about labor market regulations as being their biggest obstacle to doing business,

[80] Golub et al., Labor Market Regulations in SSA, with a focus on Senegal (2015), The measured correlation between labor market rigidity and WBES results regarding LMRs as a constraint is 0.12 (http://www.dpru.uct.ac.za/sites/default/files/image_tool/images/36/Publications/Working_Papers/DPRU%20WP201505.pdf).

we may not expect firms to be able to assess the aggregate impacts of these types of regulations on overall productivity, allocative efficiency, or economic dynamism.

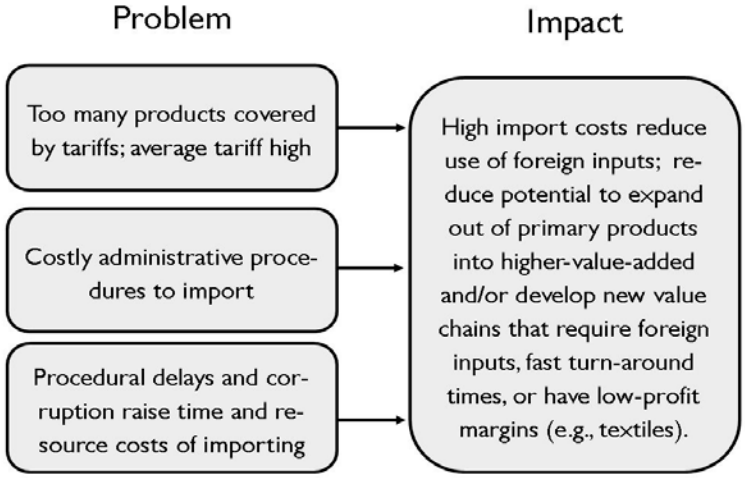
4.4.2 Import Barriers

4.4.2.1 Summary Analysis

According to the World Bank Logistics Performance Index (2012) which measures countries' trade logistics efficiency, Senegal was ranked 110th out of 155 countries. The country performs overall above the regional average but below its income group averages. Its indicators in international shipments and customs stand out from the comparators, whereas those in tracking and tracing, as well as timelines are found to lag behind. In terms of international shipments, one needs 6 documents and USD 1,225 to export a standard container of goods; and 5 documents and USD 1,740 to import the same container. This means that it requires less documents and costs to trade in Senegal than the regional average (8 documents and USD 2,108 for export; and 9 documents and USD 2,793 for import).

The analysis of the shadow price indicates costs are higher in Senegal than in most of its comparators and the average tariff of 10.8% and only just over 9% of all imports are not covered by some tariff. Test 2 shows trade freedom is strongly associated with GDP growth. Despite measures to make trading across borders less costly, there is strong evidence of smuggling across borders. Tariffs themselves do not appear to be the most pressing import barrier, but non-tariff measures for imports appear to restrict foreign supply of goods, drive up prices, and create delays in the processing of imports. According to 2011 ITC Surveys of Non-Tariff Measures (NTMs) 63% of companies face burdensome NTMs and other barriers to trade. In Test 4 we note that locally produced exports dominate the production and all firms are less likely to export than the global average.

Example of causal impacts of import barriers on businesses



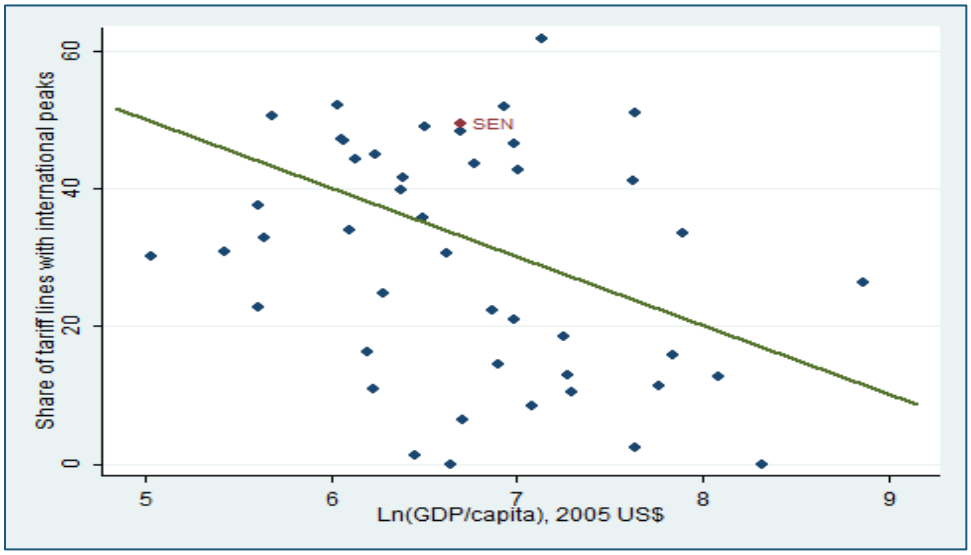
4.4.2.2 Background and Benchmarking

The World Economic Forum and other doing business indices rank Senegal relatively well amongst comparators in term of trade-related infrastructure, specifically port and airport quality. WEF ranks Senegal 64/140, with a score of 4.1, for the quality of port infrastructure, but 101/140 for quality of airport infrastructure.[81] The West African region in general is competitive regarding infrastructure related to tradeables. Field work revealed problems with the uncompetitive nature of the port services, but not the infrastructure itself.[82]

Senegal's export sector still remains relatively concentrated in a few key commodities that have benefitted from rising commodity prices in recent years, but it remains vulnerable to a future downturn in its terms of trade. The favorable exchange rate drove immediate export expansion, but did not significantly expand export production capabilities. We note that cost of imports is associated with growth and 63% of firms face non-tariff barriers to importing. Non-tariff measures include quota restrictions; registration/licensing to import/export and associated traders permits. Additional registrations are required for certain products (e.g., any medicines, pesticides, meat, arms, alcohol).

Figure 4.6 below shows that Senegal has many products whose tariffs face international peaks. Additionally, Figure 4.8 shows that the cost of importing a container is closely associated with GDP growth rates in recent history.

Figure 4- 6: Many imported products face international peaks

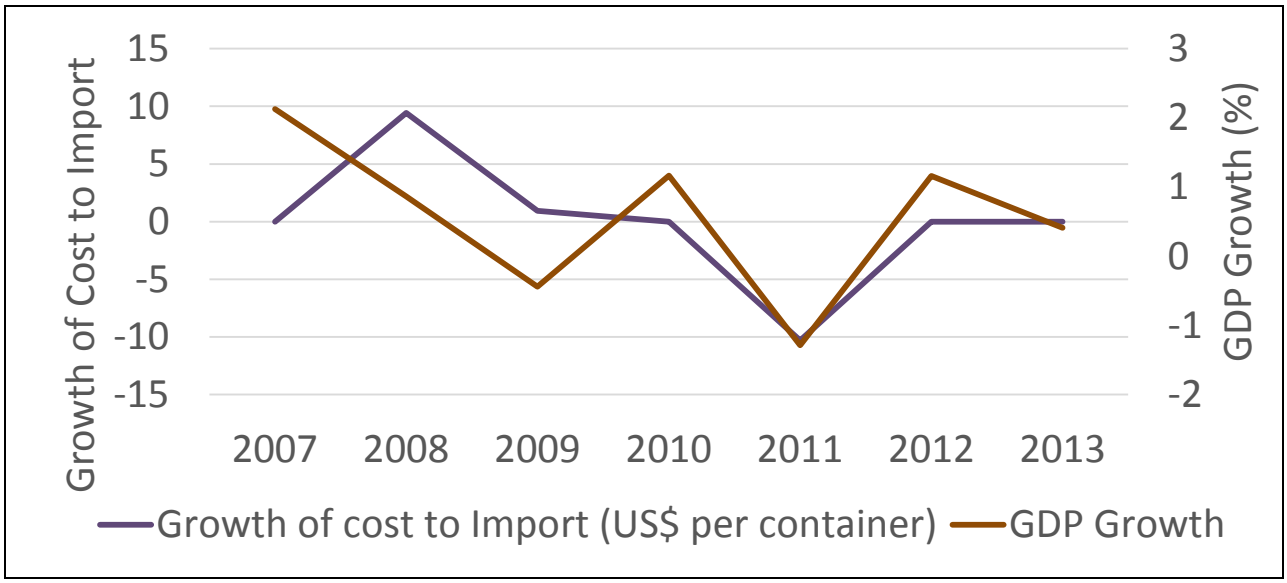


Source: WDI

Figure 4- 7: Cost of imports is associated with growth

[81] A new airport with greater capacity is currently under construction outside of Dakar.

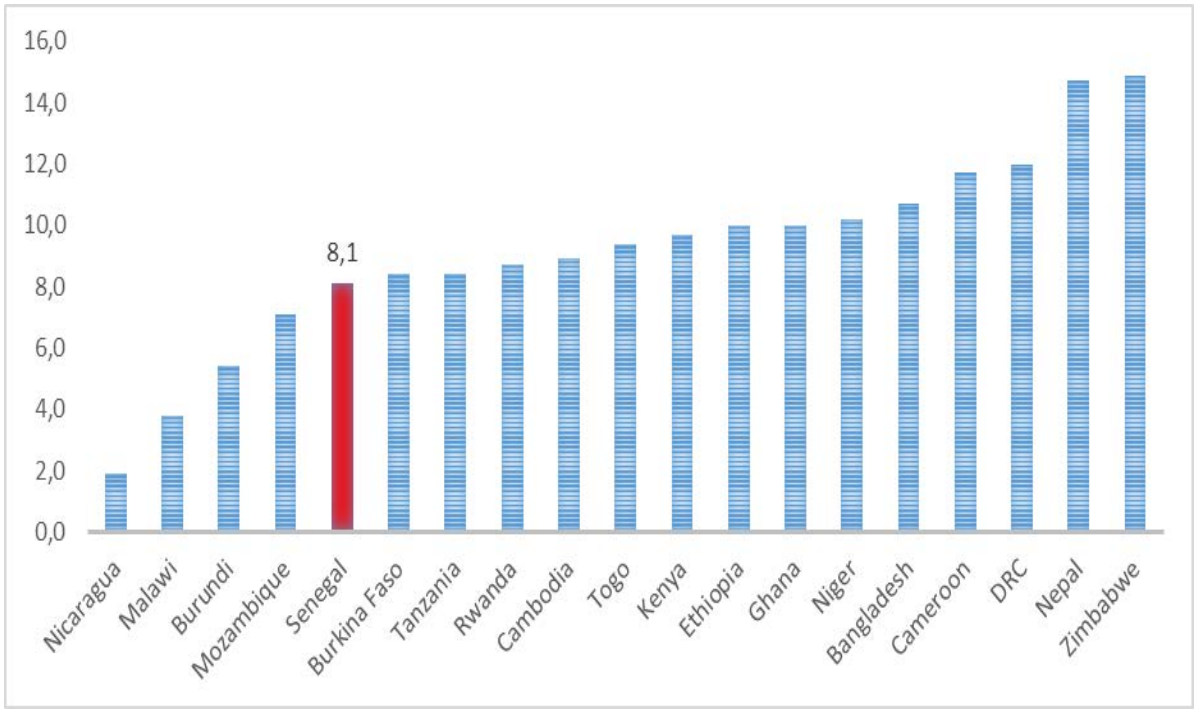
[82] Exporters in the north and south noted that there are a limited and uncompetitive number of service providers at both the Port of Dakar and the Port of Ziguinchor in the south.



Source: WDI

Taking into account the trade agreements Senegal has relatively high tariffs (8.1) compared to certain reference countries, notably Burundi, Malawi and Nicaragua, as shown in the figure below. Other comparator countries have higher tariffs than Senegal.

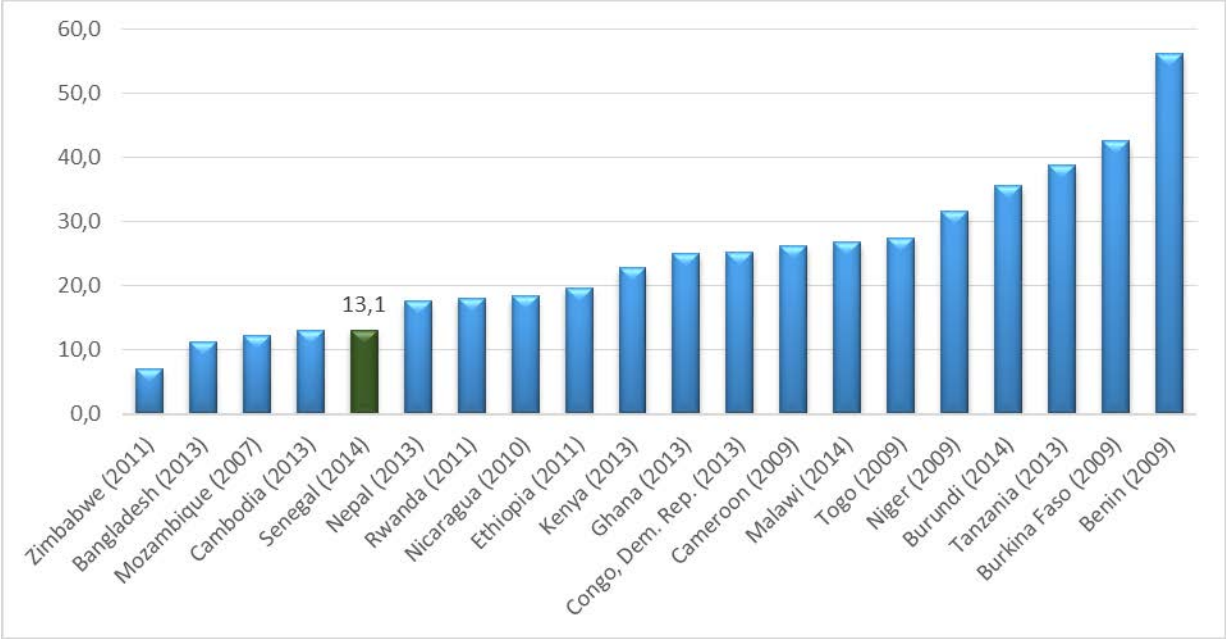
Figure 4- 8: Percentage of Customs Tariffs Senegal and reference countries



Source: Heritage Foundation, 2015

However, 13.1% of Senegalese firms identify customs and trade regulations as a major constraint. Among the comparator countries, only Zimbabwe, Bangladesh, Mozambique and Cambodia have lower rates than Senegal.

Figure 4- 9: Percent of firms identifying customs and trade regulations as a major constraint



Source Enterprise Surveys, 2015 (http://www.enterprisesurveys.org/)

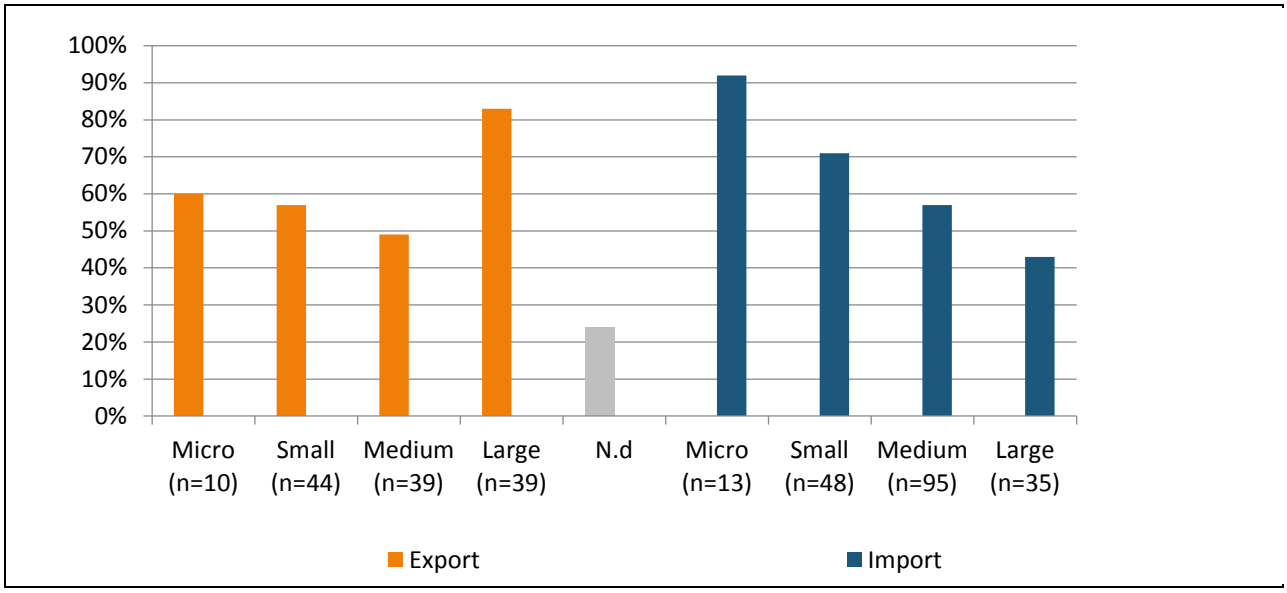
However, import barriers such as quotas and price controls are unlikely to be included in response to this question to firms, and these barriers strongly contribute to the availability and price of foreign inputs in Senegal. Dalberg's analysis noted that, for every sector of economic opportunity identified, the availability of packaging material at an accessible price was a major factor constraining the development of the sector and its value chains within Senegal. The use of sugar, which is tightly restricted, is another example. Due to price restrictions and a monopoly on importation of sugar, domestic prices for sugar can be as much as four times the world price. Though producers are technically eligible to import sugar at world prices if it is used as an input to production, this benefit does not seem to be applied regularly. As well, with substantial informality, going through the required procedures necessary to be able to import freely might also mean that business become more visible to an over-burdening state.

Apart from tariff barriers, there are other means of implementing Senegal's trade policy: non-tariff measures (NTMs) and other barriers to trade. These are mainly: sanitary and phytosanitary measures, technical barriers to trade, price control measures, licenses, quotas, prohibitions and other quantitative control measures, etc. However, this proportion varies according to the activity and the characteristics of the company. Indeed, imports appear to be more affected by NTMs than exports.

According to 2011/2012 ITC's NTM Surveys, more than 63% of Senegalese firms interviewed in an ITC survey on Non-Tariff Measures (NTM) reported to encounter regulations and procedures that affect their ability to compete in global markets. Exporting and importing companies revealed

that national administrative procedures to address foreign and national requirements represent the major non-tariff obstacle.

Figure 4- 10: Firms experiencing non-tariff barriers, by import/export and firm size



Source: Intracen (2012), p. 19

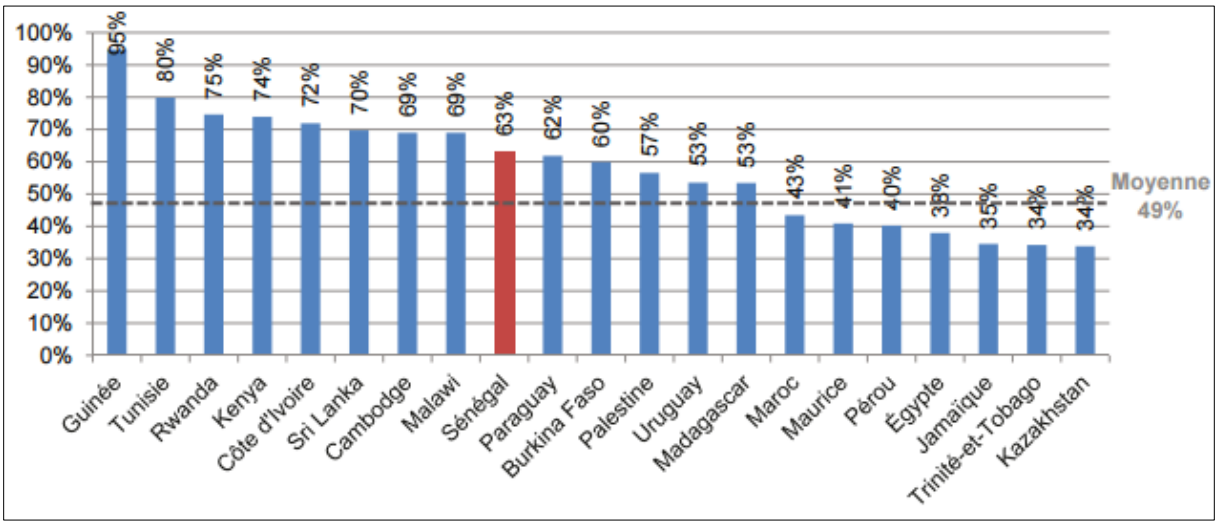
Like many countries in the world, Senegal has implemented non-tariff measures on exports and imports of enterprises.The figure above shows that NTMs are barriers that affect companies of all sizes (small, medium and large) and sectors (agriculture and manufacturing). Large firms are most affected by non-tariff measures (83%) followed by micro-enterprises (60%). On the import side, micro-enterprises are the most affected by these measures with 92%, while the share of large enterprises is 43%.

Export certification is the main NTM faced by exporters in Senegal (32%). Export inspection requirements rank second (19%), followed by licensing, quotas, prohibitions and other quantitative restrictions with 11%. These measures are generally considered to be strict in themselves. For imports, the share of firms affected by NTMs varies by sector. Manufactured goods are more affected than agricultural products.

In consultation, xporting firms explicitly noted the “predatory” nature of customs duties and import/export requirements and payments. Though Senegal has liberalized exports considerably, import restrictions remain relatively high within and across sectors, raising the cost of foreign inputs to production. This finding is consistent with the fact that, overall, firms in Senegal are about one-third less likely to use foreign materials as production inputs, and of those that do use foreign materials, they use 15% less than the global average. Smuggling of materials into Senegal from Mauritania and The Gambia are well-documented in the literature as a way around customs requirements. The degree to which import requirements deviate from the global average is large. Import restrictions appear to be part of a larger system of domestic market protectionism that includes a number of GOS entities and policies. According to the Intracen 2014 Annual Report, Senegal ranked 64/132 in terms of foreign market access, but 112/132 for domestic market access, indicating that though Senegal has done a relatively good job of creating a competitive

framework for exports, it has not yet been able to do the same to facilitate imports either for domestic consumption or for value-added re-export. Only 9% of imports are duty-free, ranking 122/132.[83]

Figure 4- 11: Percent of firms facing non-tariff trade barriers in Senegal

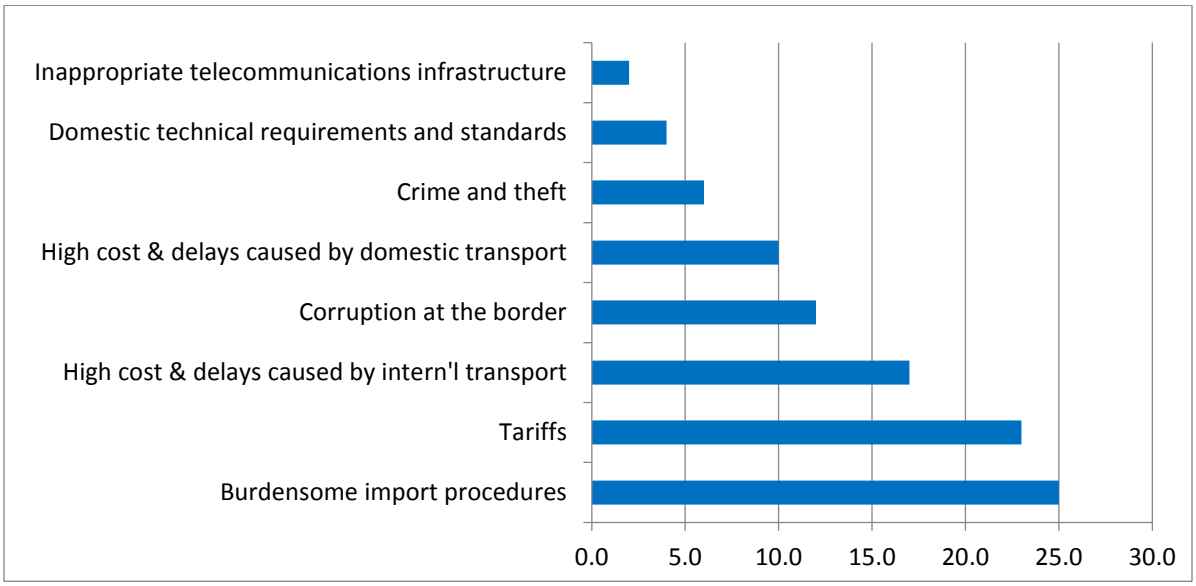


Source: International Trade Centre - Intracen (2014), p. 17

According to the 2014/15 WEF Global Enabling Trade Report (GETR), "access to imported inputs at competitive prices" was found to be the third most problematic factor for exporting, indicating a strong link between import barriers and export competitiveness. Imported intermediate goods are necessary to combine with domestic input to produce value-added exports. Figure 4.2 below shows that the most problematic factors for importing have largely to do with domestic policy issues. Three of the top five barriers to importing have to do with domestic policy barriers related to imports.

Figure 4- 12: Most problematic factors for importing

[83] Source: Annual Report 2014. International Trade Centre, http://www.intracen.org/uploadedFiles/AR2014.pdf



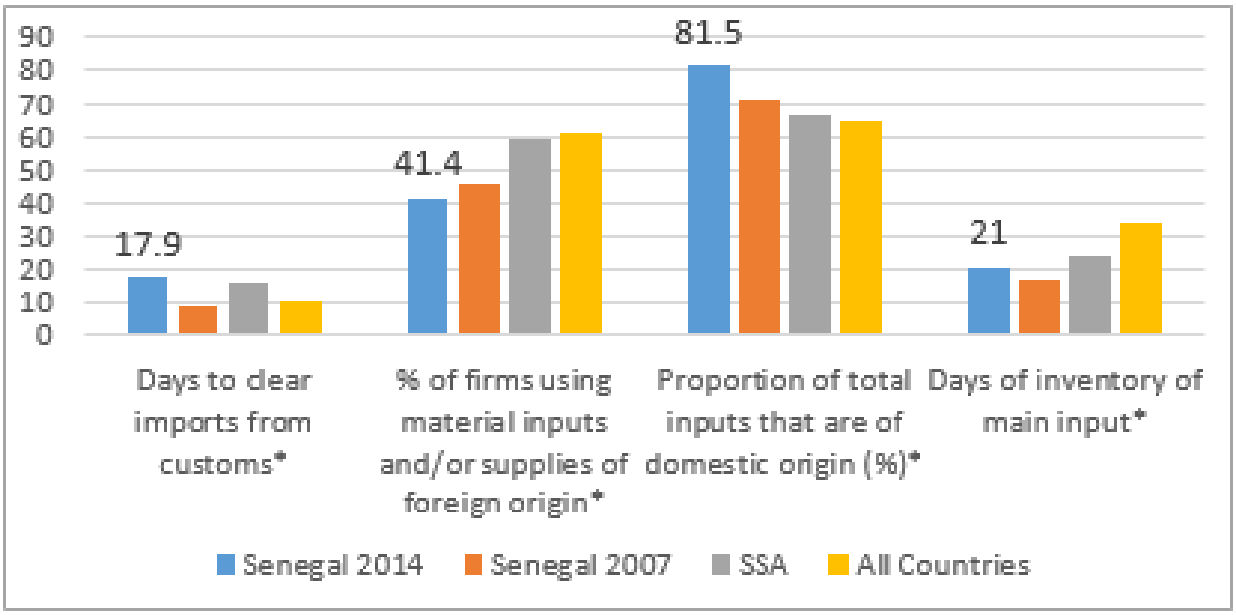
Source: GETR 2014/15, p. 274

Figure 4-12 above shows that tariffs are one, but not the only barrier to importing. Sixty-three percent of businesses experience non-tariff barriers to trade; 60% of firms that import experience non-tariff barriers to doing so, with smaller enterprises more affected. [84] Time delays and extraordinary or informal payments jointly make up 83% of the barriers to importing that firms face. Given the fast turnaround time that manufacturers need to meet orders, large and medium-sized manufacturing firms have increased the number of days of inventory of their main input to 34.2, and 30.0 days, respectively. Twenty-nine percent of medium-sized firms identify customs and trade regulation as a major constraint.[85]

Furthermore, import barriers reduce firms' use of foreign inputs, causing them to rely relatively more on domestic inputs which may be of lesser quality or higher price than foreign available inputs. This causes the exports of those firms to be less competitive in international markets. Figure 4-13 below shows that imports take significantly longer to clear for Senegal than for SSA or the global average, and that even though a relatively large number of firms export some amount, firms are significantly more likely in Senegal to rely on domestic inputs than foreign ones.

[84] Intracen (2014), Senegal: Company Perspectives – An ITC series on non-tariff measures (FR) : http://www.intracen.org/publications/ntm/Senegal/
[85] WBES, Senegal 2014

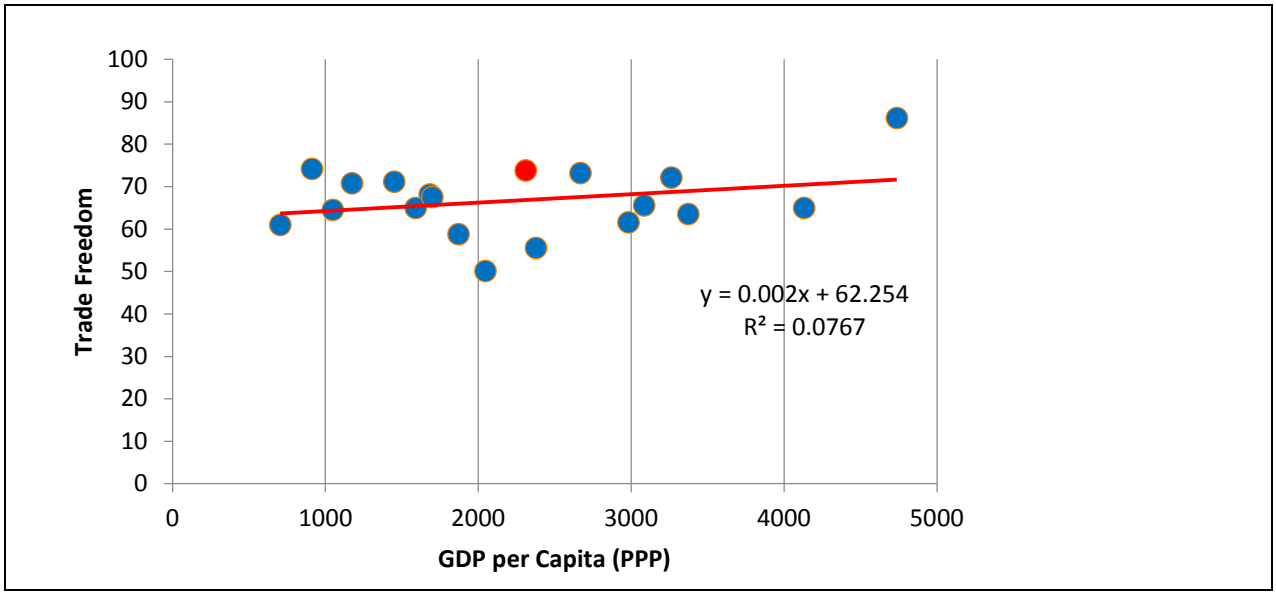
Figure 4- 13: Firms substitute towards domestic inputs and stockpile inventory



Source: WDI

The analysis in the figure below shows that in Senegal an increase in the index of trade freedom is accompanied by an increase in GDP per capita income. In other words, an economy opened to trade makes it possible to improve enterprises productivity and create more wealth for the country. The graph below shows the index of trade freedom by the Heritage Foundation and the level of economic development measured by GDP per Capita (US 2015).

Figure 4- 14: Correlation of the index of trade freedom and GDP per capita (USD$ 2016)



Source: Heritage Foundation/World Bank and Authors, 2015

4.4.3 Taxation and Tax Administration

4.4.3.1 Summary Analysis

Almost 30 percent of firms in Senegal see the high tax rates as a major constraint to conduct their activities despite the efforts made to reduce the corporate tax. There are still a high number of tax payments and hours spent to pay tax per annum. The implication of the Tax Code for smaller businesses in 2013 corresponds to an increase in new business registration. The narrow tax base, mainly for collecting direct taxes, indirect taxes and custom duties constitute the lion share of government fiscal revenue. Tax rates seem to be less of a problem than tax administration. Taxes paid in Senegal include direct taxes (e.g. corporate taxes, labor and social contributions paid by the employer) and indirect taxes (e.g. value added taxes). While direct taxes affect business profits directly, indirect taxes affect businesses in terms of procedures. Businesses are in charge of collecting indirect taxes but these are paid by consumers. Corporate taxes in all measures examined in the analysis do not seem to be a problem in Senegal. The standard corporate tax of 30% is below the average of comparators. The average of 18.4 % actually paid by businesses, after accounting for tax credits and tax breaks, is also below the average of comparators.

Labor and social contributions paid by employers represent 23.6% and are significantly above the average. It is difficult to change this rate due to the fact that it is determined by collective bargaining agreements and negotiated with trade unions. Tax administration is burdensome for businesses. With an average of 58 procedures taking about 620 hours, Senegal ranks 183 out of 189 for burdensome tax administration. Many firms choose to remain informal to avoid taxes, or labor issues. Overall, informality is quite high in Senegal, with only 10% of employment in regular wage or salaried positions. The 2016 Doing Business report ranks Senegal poorly in terms of paying tax (183rd). Transparency International 2016 reports that 59% of firms paid bribes to tax officials. Taxes remain high and the tax regime is complex and opaque. State revenue needs create incentives for tax harassment of larger, more visible firms.

The 2012 GIABA report[86] finds that perception of corruption and compromise by tax officials accounts for the perception of low tax payment by firms as opposed to low earnings.. In rank order, the GIABA indicators are: Corruption/Compromise – 77% strongly agree; Weak Enforcement (53%); Low Earnings (45%); Confusing (34%); Desire to maximize/keep profit (51%); cultural or traditional practices (65%); high and unrealistic tax rates (60.5%); multiple taxation (70.5%); and poor management of tax revenue (86.6%).

4.4.3.2 Background and Benchmarking

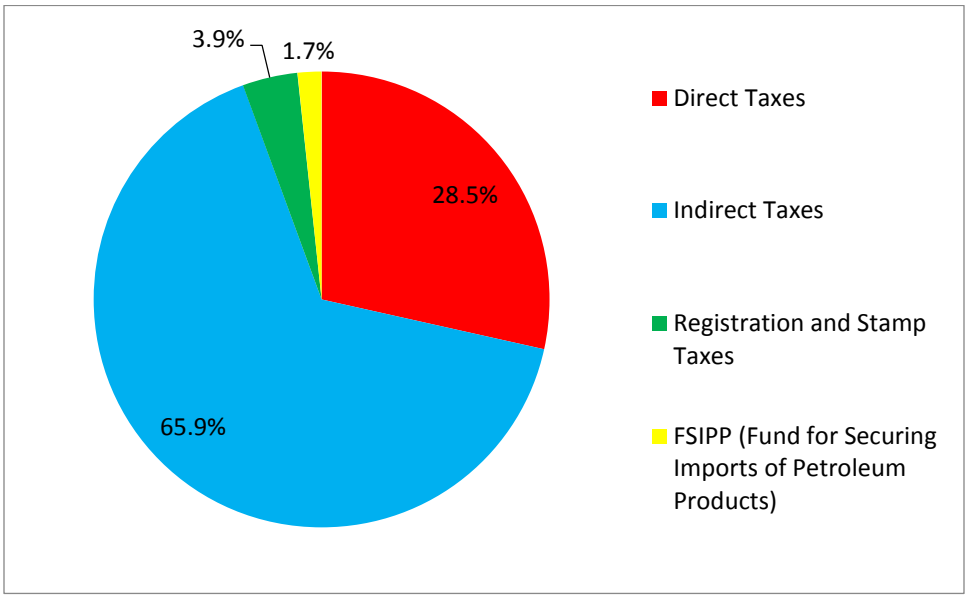
The tax system is among the factors that can lead to a low appropriability of private investment returns. Taxation, as an instrument of economic development, makes it possible to levy taxes to develop economic activity, but the excess of a fiscal pressure can inhibit investment and economic activity, on the understanding that taxation, the cost of compliance, and the level of uncertainty around tax obligations represents a cost for companies.

86

http://www.giaba.org/media/f/538_Tax%20Crimes%20and%20ML-%20Human%20and%20Economic%20Development%20Perspective.pdf

Tax revenues consist mainly of direct taxes, indirect taxes, registration taxes, registration fees, registration stamps, and the Fund for Securing Imports of Petroleum Products (FSIPP). Between 2010 and 2014, the bulk of total tax revenue consisted of indirect taxes at 65.9%.

Figure 4- 15: Breakdown of tax revenues (average 2010-2014)



Source: Initial Finance Laws, Ministry of the Economy, Finance and Planning

Several reforms have been carried out in Senegal to put in place a less restrictive and less discouraging tax system for private investment. In this context, initiatives have been taken to reduce the marginal tax rate on capital, in particular through a reform of the method of calculating the tax and a reduction in the corporate tax rate from 35% to 33% and then to 25%. Tax regimes such as the Investment Code and the Mining Code have also been revised. Moreover, apart from the measures taken between 1994 and 1995 to adapt tax regulations to the devaluation of the CFA franc in January 1994, the Senegalese tax system remained stable until 1997 to 2001, when the Harmonization of the Legislation (or uniform law for the control and collection of taxes and duties referred to as the General Tax Code), initiated either within the framework of WAEMU or within the framework of OHADA.

As for informal enterprises, the tax tool has been simplified by introducing the single global contribution (SGC), which brings together a number of taxes (income tax, contribution of patents, minimum individual tax, contribution of licenses, VAT, flat-rate contribution paid by employers).
In addition, a 2013 simplification of the tax code for smaller-sized businesses coincided with a moderate bump in the number of registered, tax-paying firms.

Text Box 4-3: Tax Reforms

Apart from the introduction of Value Added Tax (VAT) in 1979, four reforms have particularly influenced fiscal policy over the last thirty years.

Fiscal reforms under the structural adjustment program, implemented over the period 1985-1992, to increase government revenues and reduce the fiscal burden of the formal sector. They concerned both indirect taxation and direct taxation

.

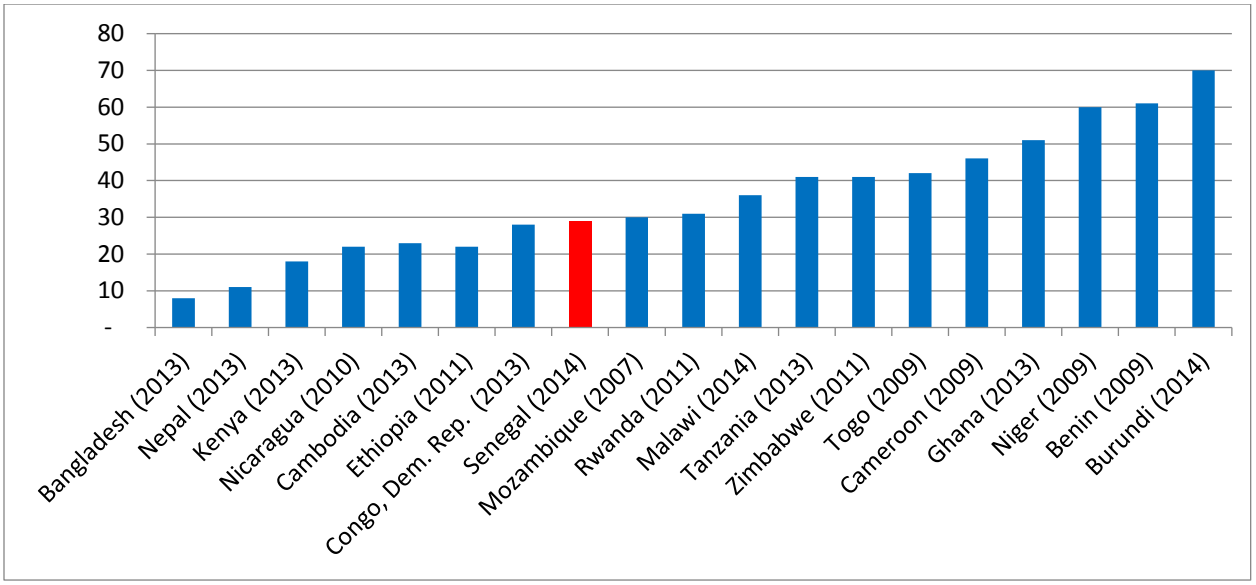
Post-devaluation reforms which marked the Senegalese tax system from 1994, with a complete overhaul of indirect taxation. During this period, the Government introduced in its fiscal policy the mitigation of the shock of devaluation on the purchasing power of households while ensuring a satisfactory level of revenue and the preservation of the competitiveness of domestic enterprises.

Reforms at regional community level that took place within the framework of the harmonization of the indirect internal and external taxation of the WAEMU member states. In this respect, member countries made a commitment in 1995 to gradually eliminate tariff and non-tariff barriers for intra-community products, but also to set up a Common External Tariff (CET).

New tax reforms undertaken during the last decade which aim to orient tax policy more towards the promotion of investment, taking into account new concepts such as awareness raising of economic operators and civic education campaigns to inform and encourage taxpayers compliance and willingness to pay taxes. In addition, these reforms take into account the specificities of the informal sector through the simplification of the tax system.

According to the 2014 Doing Business Survey, slightly more than one in four companies considers the tax rate to be a major constraint. This indicator does not take into account the costs and resources associated with tax procedures or compliance.

Figure 4- 16: Companies identifying the tax rate as a major constraint



Source: Enterprise Surveys

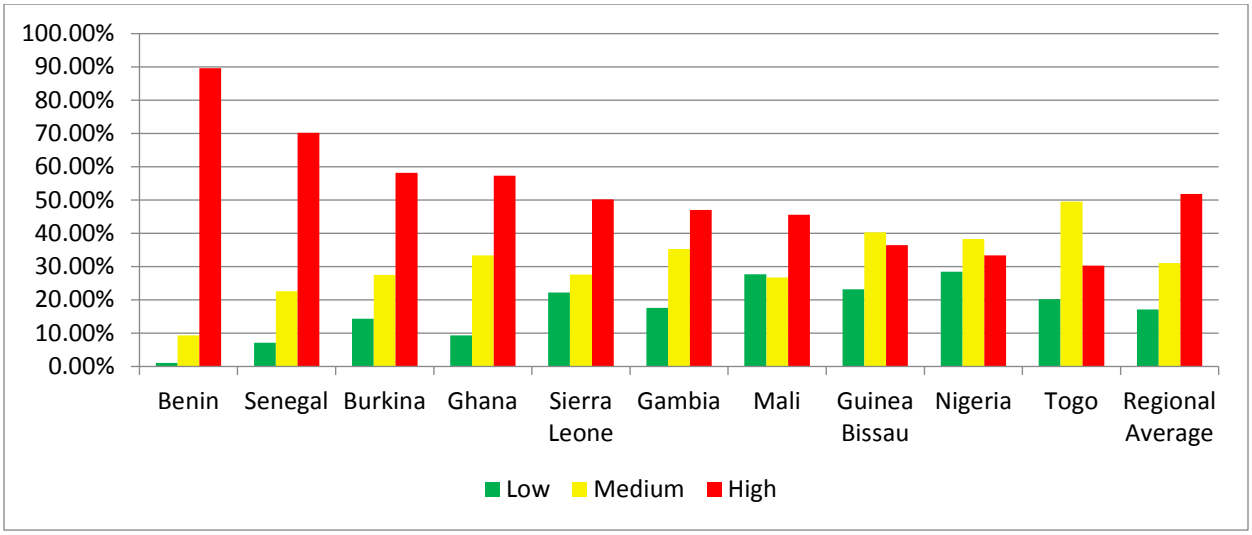
Senegal ranks 183/188 in Paying Taxes. A medium-sized, non-exporting firm in Senegal that is not eligible for special tax breaks or incentives will take 620 hours to make 58 tax payments in

2016.[87] At 47.3% of commercial profits, the statutory tax rate is above the African average.[88] Studies and surveys find that firms encounter significant barriers in dealing with the tax administration system. Moreover, of the public institutions measured by Transparency International, the tax administration in Senegal is seen as one of the most corrupt, with almost 60% of the Global Corruption Barometer (GCB) respondents in 2013 reported having paid a bribe to the tax office (59%).[89]

Firms told the team during field work that some firms tried at various points to formalize their activity in the hopes of getting better access to finance, but were unable to profitably comply with the taxation and regulatory requirements imposed on their activities, and so slid back into informality.

Tax rates and administration have been substantially reduced, with the latest major change resulting in the new Tax Code of 2013 with a simpler process. Senegal ranks among the highest among comparators in terms of hours to comply with tax procedures. According to a 2012 GIABA study, nearly 90 % and 70 % respectively of respondents in Benin and Senegal believe the willingness of individuals, businesses, and organizations to pay taxes is negatively affected by multiple taxations, compared with lesser percentages of respondents from the other eight countries. (See Figure 4-19). Tests for tax administration are generally positive, indicating a constraint. Further, some studies note that the application of tax procedures is highly variable, with tax officials singling out the largest or most successful firms. Because of their visibility, they are easier to target for extraction of taxes. This seems a plausible incentive that could be a contributing factor to informal firms' desire to remain under the radar.

Figure 4- 17: Opinion on multiple taxations as against willingness to pay tax



Source: 2012 GIABA Report, Tax Fraud and Money Laundering in West Africa, page 33

[87] WBDB, Senegal, Paying Taxes

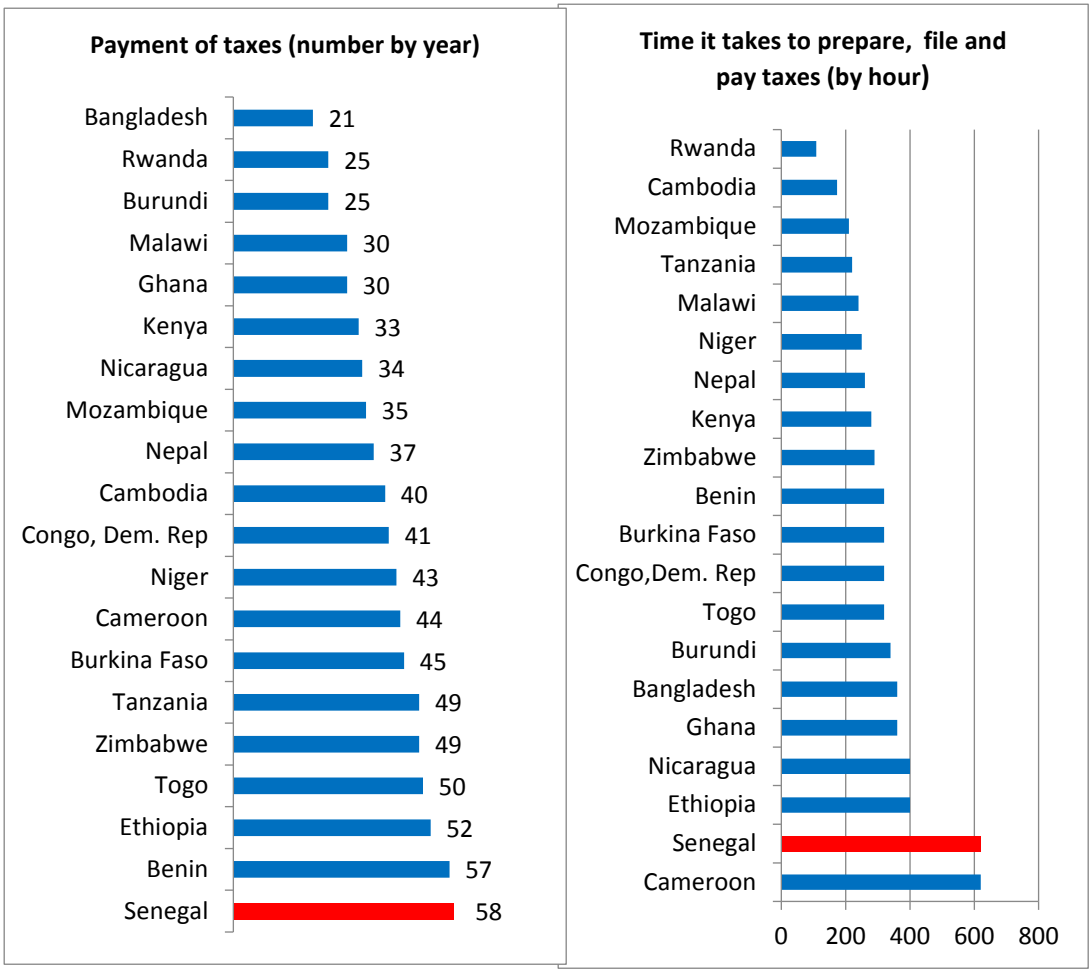
[88] There are a number of tax deferrals and tax incentives for large, new investments (see State Department Investment Assessment), and also for protected or strategic products. We were unable to find a calculation of the effective tax rate by sector, product, or firm size.

[89] http://www.transparency.org/gcb2013/country/?country=senegal

There is evidence of harassment of formal firms by government officials relating to compliance and payment of all types of requirements, of which tax requirements seem to be a large portion.

The analysis in Figure (4-20) shows that Senegal is far from being well positioned compared to its comparators both in terms of tax payment and the number of taxes paid. It would take 620 hours per year to prepare, file and pay these taxes when the number of hours required is only 109 for Rwanda and 173 for Cambodia. The analysis of the evidence under Test 1 indicates that taxation constitutes a constraint for the private sector in Senegal.

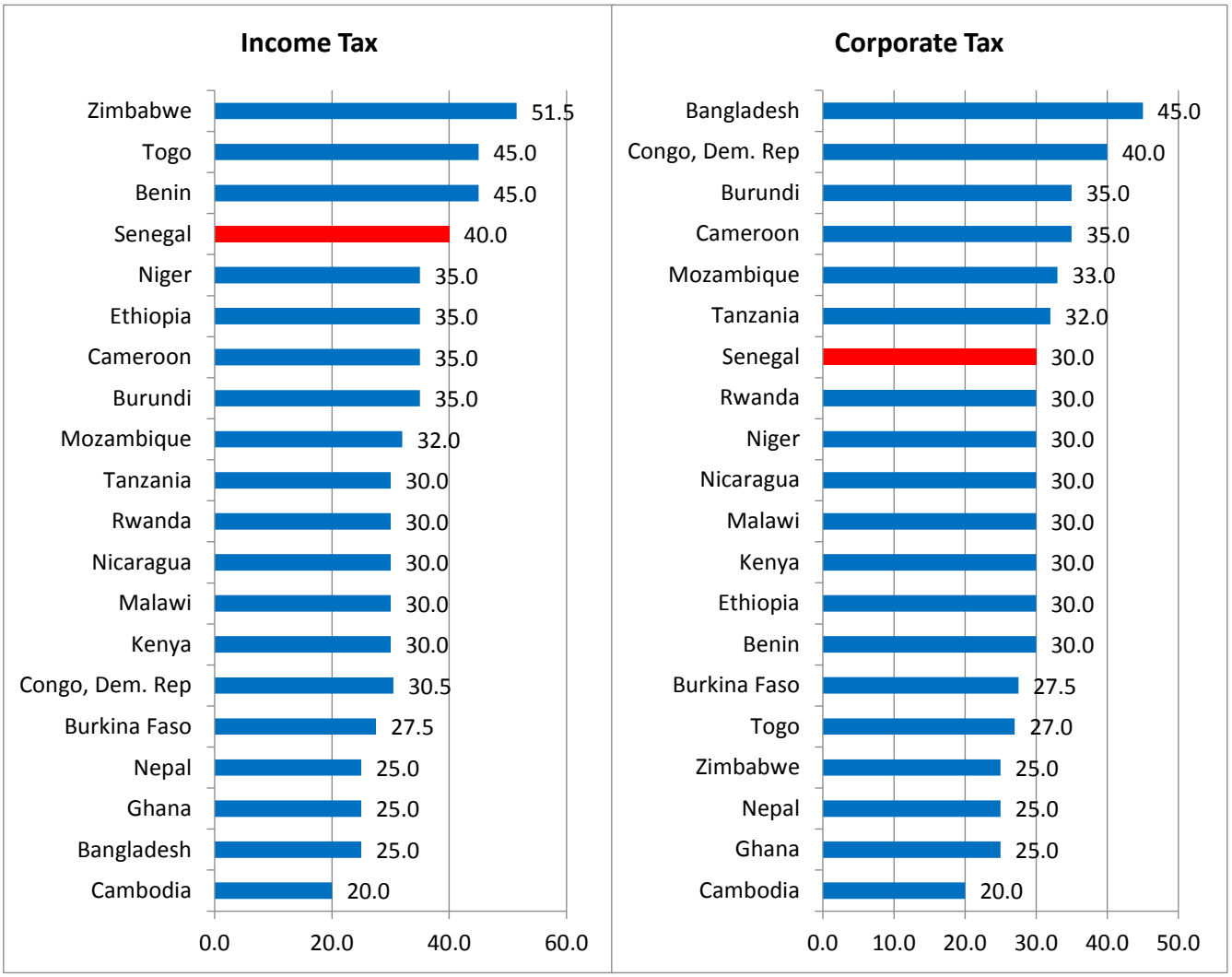
Figure 4- 18: Payment of taxes (number by year) and time limit (by hours) in Senegal



Source: Doing Business, 2015

Business taxes take the form of corporate taxes, payroll taxes, and royalties. The corporate tax rate is a cost to businesses and would constrain private sector development if it is too high. The comparison with the reference countries shows that Senegal has the same corporate tax rate (30%) as Rwanda, Nicaragua, Malawi, Tanzania and Niger, while countries such as Nepal, Zimbabwe, Ghana or Cambodia have much lower corporate tax rates.

Figure 4- 19: Income and corporate tax in Senegal and comparator countries (2015)



Source: Heritage Foundation, 2016

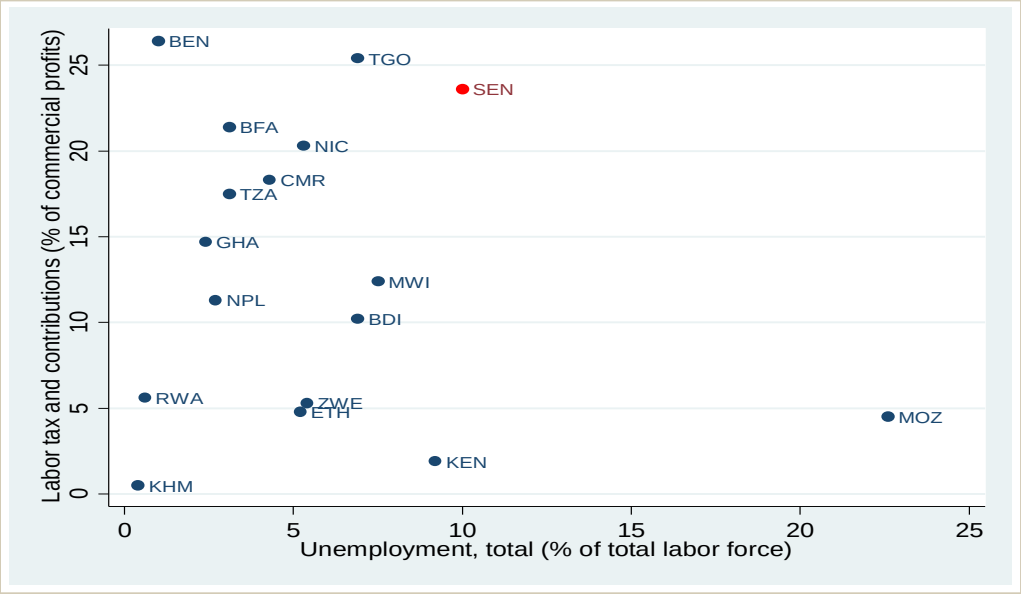
This situation is all the more unfavorable given that 29.2%[90] of Senegalese companies identify tax rates as a major constraint to the development of their activities despite efforts to reduce tax rates. In fact, there have been a series of reductions of the corporate tax rate in Senegal. It was 35% before 2004, dropped to 33% in 2004 and then to 25% in the following year in 2005. [91] The corporate tax rate was increased in 2013 from 25% to 30%. Thus, as shown in Figure 4-21, it remains relatively high compared to other countries.

There is also a generalized relationship between the amount of labor tax contributions required and unemployment levels across countries. Figure 4-22 shows a positive relationship between labor tax contributions and the level of unemployment, with Senegal having both a high labor tax contribution as the second highest official unemployment rate.

[90] According to data from Enterprise Survey of 2014

[91] Through these tax cuts, the GOS aimed at reinvesting businesses in the economy and thus creating employment

Figure 4- 20: Positive relationship between labor tax contribution and unemployment



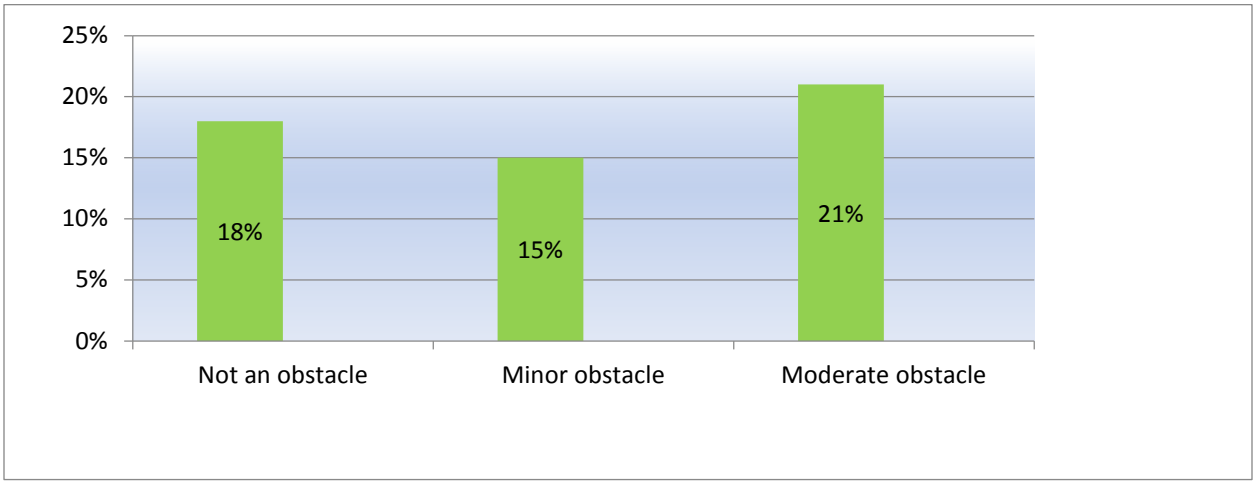
Source: WDI

The same applies to taxes on workforce and payroll taxes for which Senegal has a high level compared to other countries. In a larger sample Senegal's tax rate is on the trend line. In terms of tax rate, Senegal ranks 148 out of 211 countries. According to APIX, the average position of Senegal with regard to tax rate is primarily due to the fact that Senegal has a higher rate of social contributions and labor taxes.

A low tax rate should encourage companies to invest and expand their business. However, binding taxation pushes companies to circumvent this obstacle to make the investment more profitable.

Companies prefer to operate in the informal sector so as not to pay taxes that are beyond their reach. 76.4% of the companies located in the territory suffer from competition with companies in the informal sector. This competition is felt more by small and large enterprises in the formal sector.

Figure 4- 21: Percent of firms affected by competition from the Informal sector according to their size



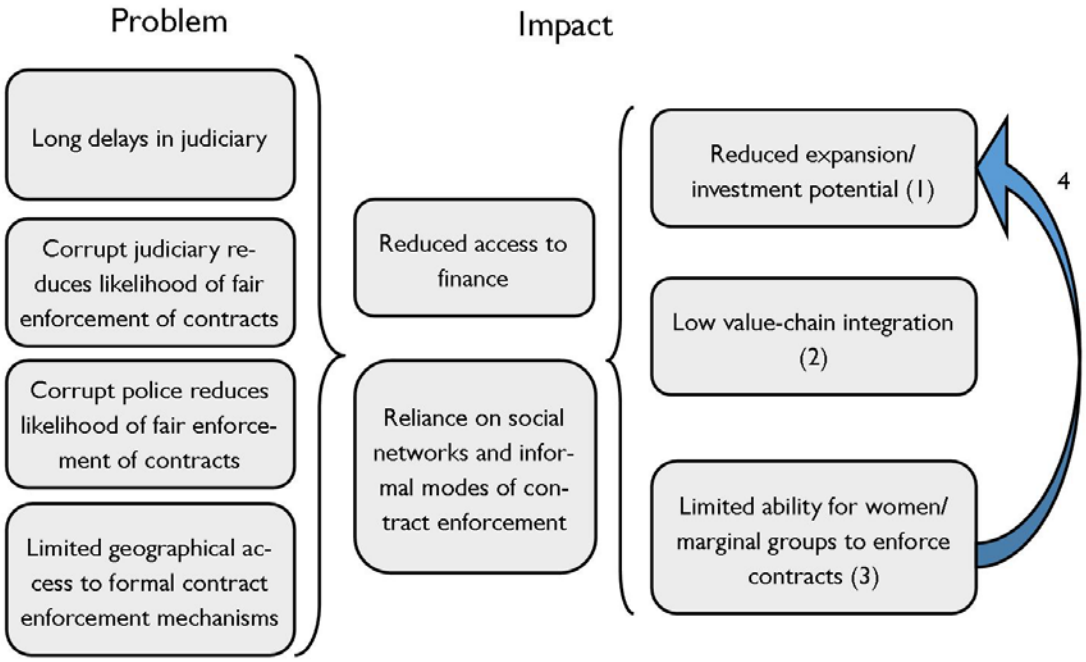
Source: Enterprise Surveys 2014, World Bank

The evidence indicates that informal firms dominate and thrive. According to the 2012 GIABA Report, like many of its comparator West African countries, Senegal's *political economy is characterized by a cash-based economy and a large informal sector. This makes the region highly vulnerable to tax fraud. Likewise, poor governance, underpinned by chronic public corruption and institutional fragility, widespread tax illiteracy, porosity of borders and weak border controls, provides a fertile ground for tax fraud.* In addition, in these countries, the agricultural sector is often largely informal and difficult to monitor and tax.

CHAPTER 5: DO CONTRACT ENFORCEMENT AND PROPERTY RIGHTS REPRESENT A BINDING CONSTRAINT TO GROWTH?

5.1 SUMMARY ANALYSIS

Example of causal chain between contract enforcement and economic impacts on firms



1. **Reduced access to finance limits investment potential of firms to expand**
2. **Large, international firms are contract intensive and require strong formal contracts with suppliers.**
3. **Women/marginal groups have limited access to "high-value" social networks; informal contracts often decided against them**

The rule of law affects businesses in multiple ways. The existence of well-defined rules and laws that govern complex business transactions in predictable ways is important for investment growth. Investors count on predictability and aim to minimize uncertainty. The rule of law appears to relate to firms mainly through the nexus of contract enforcement. Businesses engage in a complex array of contracts on a daily basis and the ability to enforce these contracts efficiently has cost implications and may affect rates of return. Poor contract enforcement may also be linked to land and property rights, in some cases, since land and property are primary forms of collateral. The result is that banks are more likely to devalue collateral due to weaknesses in land governance, affecting the ability of services firm to access credit through property titles.

While Doing Business does give Senegal poor rankings in enforcing contracts (145th), Senegal recently made contract enforcement more efficient by introducing laws regulating judicial and conventional voluntary mediation. Alternative dispute resolution is now well established: arbitration and mediation are both recognized ways of resolving a commercial dispute, and arbitration in Senegal is regulated through a dedicated law. The introduction of a formal mediation center resulted in 17,000 cases cleared with 92% of user satisfaction. Despite these improvements, many studies suggest that contract enforcement and property rights are major

deterrents to investments both in general and for Senegal. Many banks are generally reluctant to expand credit on account of weak contract enforcement. Delays and complications in the enforcement of collateral on bad loans generally undermine the value of collateral as a guarantor in future lending. While improvements in contract enforcement, via commercial dispute settlement and arbitration, may generally correlate with investment growth, contract enforcement as a single constraint does not appear to seriously affect the investment decision of firms and as such does not rise to the level of a binding constraint. In terms of the four tests, we find that contracts enforcement and property rights meet three of the four tests possibly being met when one considers property rights. There is therefore a strong case to be made for contracts enforcement and property rights being an important constraint to growth of the private sector in Senegal.

In summary, contract enforcement remains a major constraint since improvements therein may reduce the prevalence of risks banks face, contributing to a favorable lending climate. Banks have featured prominently in the discussion of contract enforcement because they generally provide the financing for investment, constraint to which is the focus of this analysis. Improvements in contract enforcement will equally generate big impacts in the broader economy, reducing enforcement time and instilling greater confidence that contracts will be honored. Probably one of the biggest impacts may be the ability of improved contract enforcement to reduce the pool of risky firms and/or individuals, who exploit weaknesses in the judicial system and increase the overall riskiness of the business and contract enforcement environment in Senegal.

5.2 BACKGROUND AND BENCHMARKING

In addition to import barriers and labor market regulations that raise the cost of inputs to firms, Senegal has additional important policy problems related to contract enforcement and tax administration. Although these may not be as immediately pressing as those above, they contribute to the overall low growth rate experienced by either domestic or foreign firms. What firms do consider as critical is their ability to enforce the numerous contracts they enter. Contract enforcement has been noted to exert some impact on investment.

Property rights also impact manufacturing, transport and trade. Firms in all sectors may use property titles to secure financing. For services such as banks, property rights have strong links and may influence the willingness and ability of banks to accept land property as collateral.
SMEs which generally complain about the lack of access to finance are more likely to use property titles to secure financing. Also, the fact that many SMEs complain about collateral issues suggests their inability to secure financing may be related to the collateral implications of weak land governance, though other factors are possible.

Senegal ranks 145/189 on Enforcing Contracts according to the World Bank Doing Business Indicators. Time to enforce a contract is moderately high, and the differential between cost of enforcing and the recovery rate is relatively low which indicates a low benefit to utilization of formal contract enforcement. Overall as much as 27% of WBES respondents in Senegal say that contract enforcement is a major constraint for them.[92]

There is substantial evidence that firms use alternative mechanisms to enforce contracts of an informal nature – business associations, religious leaders or local elders, etc. There are also gender barriers to contract enforcement given limitations to women's agencies, which contributes to their low level of formalization. An arbitration and mediation center was established in Dakar

[92] WBES, Senegal 2014

last year and has so far dealt with 17,000 cases with a 92% satisfaction rate. In all, these indicators are consistent with a contract enforcement constraint. It is also well established in the literature that contract rights are strongly linked to access to finance, which was the strongest complaint in the recent WBES and a noted barrier to businesses in Senegal as determined by other studies.

The problems appear to be the limited capacity of the judiciary and the quality of judgments. A number of studies cite deficiencies in the capacity of judges and the extent of corruption in the judiciary.[93] Seventy-three percent of Senegalese respondents to the Global Corruption Barometer believe they think the judiciary is corrupt or extremely so, and the judiciary receives a score of 4.2 out of five on the GCB's corruption perceptions.[94] Fifty-three percent of respondents who encountered the judiciary during the survey period reported having paid a bribe to the judiciary.[95] Assessments of the judiciary in Senegal note its lack of independence, and the petty corruption that occurs in the courts.[96]

Text Box 4-5: Property Rights and Economic Growth

Property rights determine who has authority to direct the use of economic resources. Strong property rights clearly establish and protect these rights. Strong property rights reduce expropriation risk - which incentivizes long-term investments - and facilitate the exchange of economic resources to their highest and more productive use by reducing transaction costs.

Generally, property rights institutions include formal and informal laws, rules, procedures and organizations that play a role in assigning and enforcing agent's rights to transact, access, and control the use of economic resources.

References: Knack and Keefer (1995); Eicher and Lukert (2006); North (1992); Acemoglu and Johnson (2005)

Strong contract enforcement mechanisms are essential to underpinning deep financial markets that facilitate access to credit for investment. Without strong creditor rights and an efficient system for moving non-performing cases through the process of foreclosure and recovery, collateral requirements are likely to remain high and formal credit availability concentrated among the best repeat borrowers on short maturities.

Overall, the connections between contract enforcement and finance appear stronger than contract enforcement in general in terms of promoting investment and entrepreneurship.

As an alternative to formal contract enforcement mechanisms, many firms currently utilize alternative systems of contract enforcement such as mediation through friends, family, and establishing long-term business relationships.[97] The low levels of formalization are both a cause

[93] KPMPG, Country Profile, Senegal , https://www.kpmg.com/Africa/en/KPMG-in-Africa/Documents/Senegal.pdf; http://pdf.usaid.gov/pdf_docs/PNADK548.pdf ; http://www.business-anti-corruption.com/country-profiles/senegal

[94] 1 = very clean. 5 = extremely corrupt. Available at

[95] http://www.transparency.org/gcb2013/country/?country=senegal

[96] USAID Corruption Assessment, Senegal (2007) , http://pdf.usaid.gov/pdf_docs/PNADK548.pdf

[97] Paquin 2010. Also, club-like organization among economic agents is very common in countries where contract enforcement mechanisms are weak or prohibitively expensive (see Bueno de Mesquita and Stephenson, Legal Institutions and Informal Networks http://home.uchicago.edu/bdm/PDF/networks.pdf for a discussion of the importance of cost and strength of contract enforcement on informality and economic development trajectories). Generally, it's hypothesized that these network structures are mutually reinforcing with formal contract enforcement rather than direct substitutes.

and consequence of poor contract enforcement mechanisms. Generally, firms strongly prefer to avoid courts because their own operations are likely to be at least somewhat informal, their contracts or agreements are likely to be informal with informal partners. Furthermore, the poor quality and ease of the judicial process and other contract enforcement mechanisms reduces domestic firms' incentives to greater formalization and sophistication by making it harder to enforce a contract in which they have a dispute and also making it less likely that another firm will contract with them in the absence of a pre-existing business relationship.

The shadow cost of contract enforcement may be construed in terms of both time and dollar costs businesses incur in enforcing contracts. Senegal's judicial system has always been viewed as very cumbersome in terms of contract enforcement. The quality of judicial proceedings is low in Senegal (6.5) compared to Bangladesh (7.5), Democratic Republic of Congo (8), Malawi (8) in Mozambique (9), Kenya 9) and Rwanda (10) out of the 20 countries (see Table 5-2). This also applies to the time taken to execute contracts.

In Senegal, it takes 740 days to execute a contract. This period is very high compared to the reference countries.

Table 5-2 shows that the shadow cost is high in Senegal for time required to litigate. It takes more than 2 years to resolve legal disputes in Senegal, compared to just over a year in Kenya and under a year in Rwanda. On the other hand, cost as a percentage of the value of claims is relatively low (36.4%) or equal compared to most of the comparator countries. Thus, the objective of diligent, effective and satisfactory execution of judicial decisions in Senegal is not achieved. This is evidenced with 2016 Doing Business ranking Senegal 145th place on Enforcing Contract.

Table 5- 1: Comparison of Shadow Cost of Contract Enforcement (# of procedures, cost, & time)

	Time (Days)	Cost (% of Claims)	Quality of Procedures (0-18))
Bangladesh	1442	66.8	7.5
Benin	750	64.7	6
Burkina Faso	446	81.7	6
Burundi	832	38.6	4.5
Cambodia	483	103.4	2.5
Cameroun	800	46.6	6.5
DRC	610	80.6	8
Ethiopia	530	15.2	5
Ghana	710	23	6.5
Kenya	465	47.2	9
Malawi	432	69.1	8
Mozambique	950	119	9
Nepal	910	26.8	5.5
Nicaragua	519	26,8	6.5
Niger	545	52.6	5
Rwanda	230	82.7	10
Tanzania	515	14.3	6
Togo	488	47.5	7
Zimbabwe	410	83.1	5
Senegal	740	36.4	6.5

Source: Doing Business, 2015-2016. [98]

The costs of settling outstanding arrears are considered very high. Indeed, the cost of settling insolvency in Senegal is 20% of the value of the property compared to the comparator countries where the average is 14.5%. In addition, the recovery period is very long (3 years) and the recovery rate is very low (29.2).

Table 5- 2: Payment of delinquency: time, cost and recovery rate

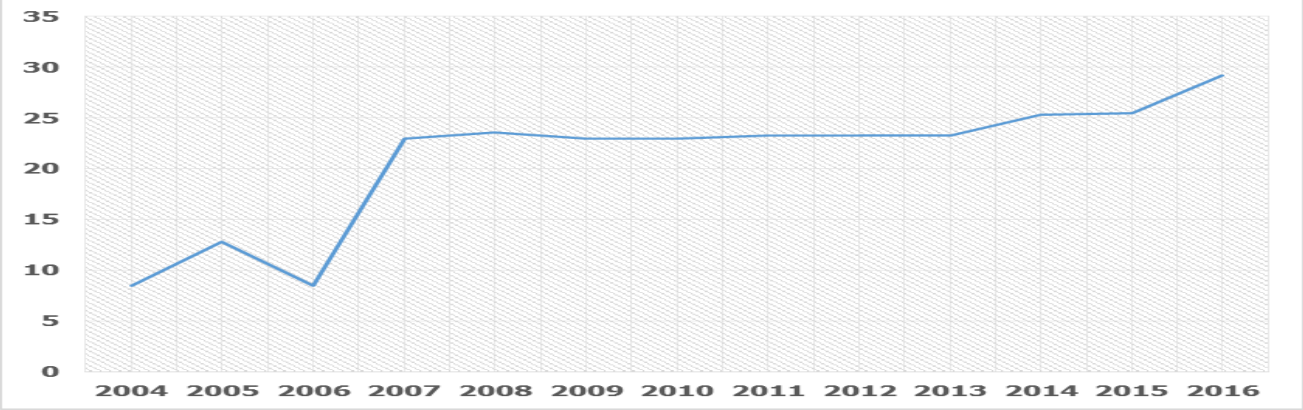
	Time (Years)	Cost (% of property value)	Recovery rate (In USD $ Cents)
Bangladesh	4	8	25.8
Benin	4	21.5	18.5
Burkina Faso	4	21	18.5
Burundi	5	30	7.2
Cambodia	6	28	8.3
Cameroun	2.8	33.5	15.5
DRC	3	14.5	29.6
Ethiopia	1.9	22	23.2
Ghana	4.5	22	27.9
Kenya	2.6	25	12.4
Malawi	1.5	20.5	34.1
Mozambique	2	9	41.5
Nepal	2.2	14.5	33.9
Nicaragua	5	18	14.7
Niger	2.5	29	19.2
Rwanda	3	22	21
Tanzania	3	15	27.9
Togo	3.3	22	16.1
Zimbabwe	3	20	29.2
Senegal	4	36.4	6.5

Source: Doing Business, 2015-2016.

Figure 5-1 below shows the evolution of the recovery rate in Senegal between 2004 and 2016. This curve illustrates three phases. Between 2004 and 2007, a sharp increase was noted for this rate from 8.5 cents per dollar to 23. The date on which it became more or less constant until 2013, with 23.3 cents per dollar. The rate is and continues to be on the rise until 2016 and has a value of 29.2.

[98] The indicators shown for the Quality of judicial proceedings are from 2016 while the others are from 2015

Figure 5- 1: Evolution of the recovery rate (cents per dollar) in Senegal

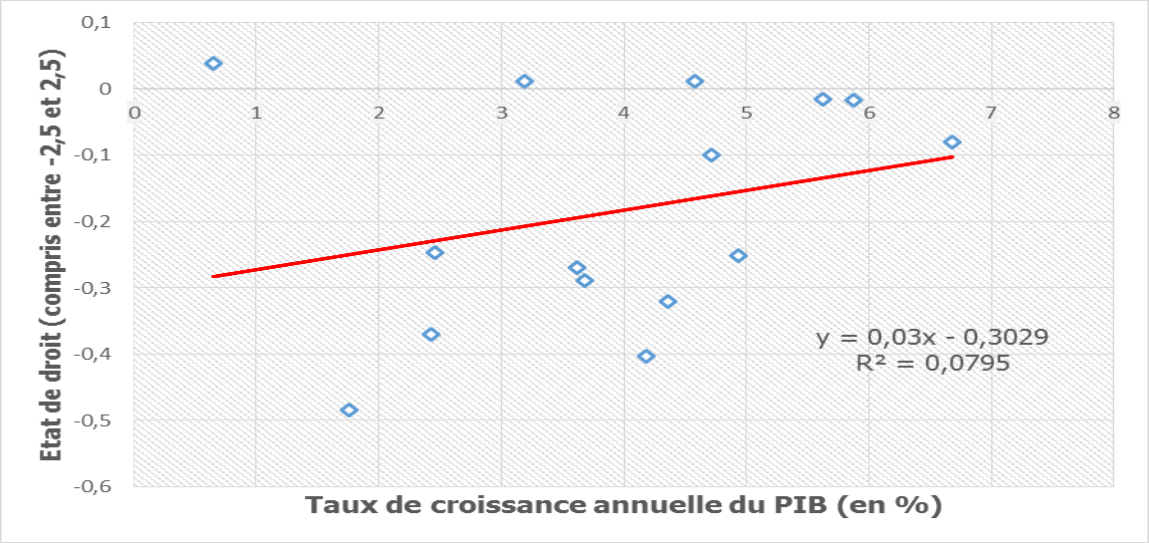


Source: Doing Business, 2015-2016.

In summary, the cost of settling an insolvency in Senegal is high (36.4% of the value of the property) compared to the comparator countries (average 20.82%).

The objective of this correlation test is to see the relationship between the quality of the judicial system and the rate of growth of GDP. Figure 5-1 illustrates a positive relationship between the rule of law and the annual growth rate of GDP between 2000 and 2014. In other words, an increase in the quality of the judicial system would lead to an increase in GDP growth. The hypothesis of a system constraint could not be rejected in the case of Senegal.

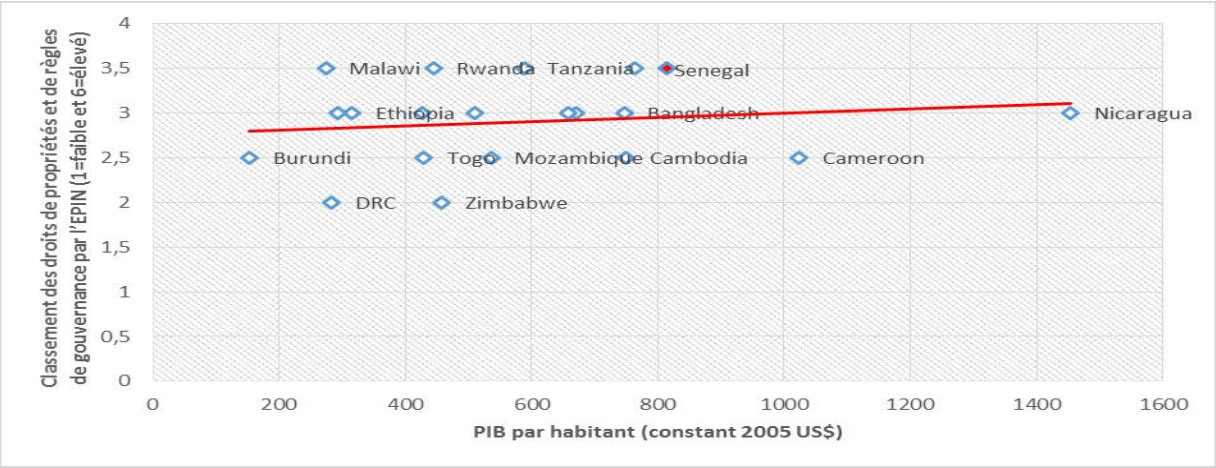
Figure 5- 2: Evidence that Rule of Law Correlates with Investment Growth



Source: Worldwide Governance Indicators (WGI) and Doing Business, 2015-2016.

Nevertheless, Senegal is well placed in property rights (3.5 out of 6). Per capita GDP exceeds that of comparable reference countries such as Ghana, Malawi, Rwanda, and Tanzania.

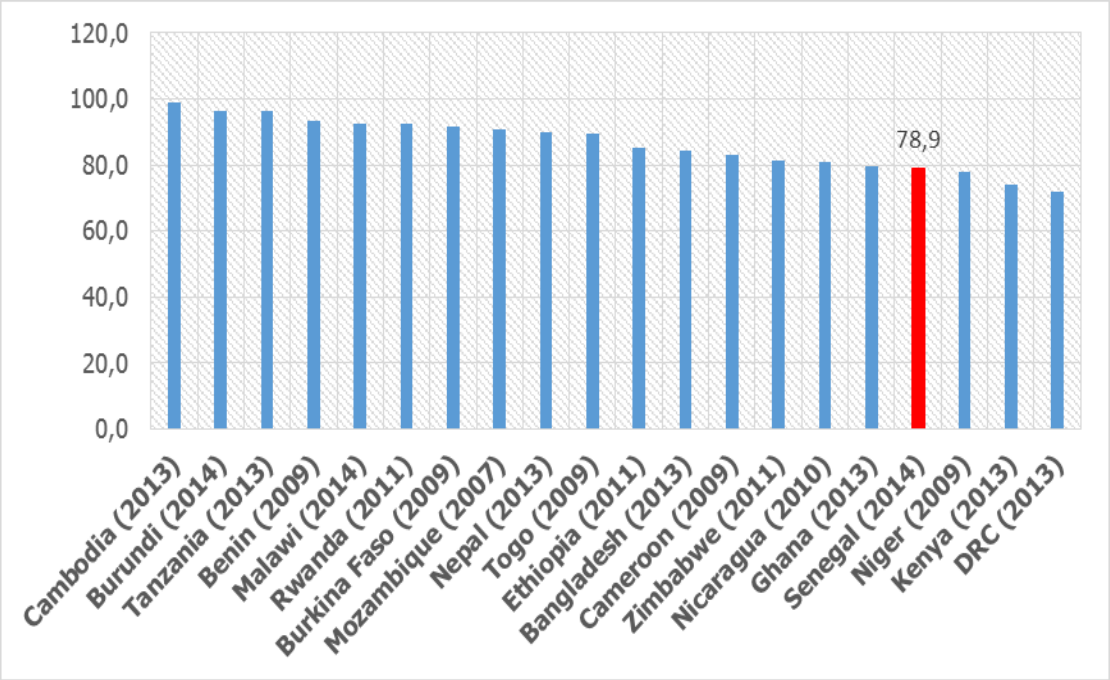
Figure 5- 3: Ranking of property rights and governance requirement



Source: Worldwide Governance Indicators & WDI, 2016

To circumvent the constraint on the significant delays in the proceedings of the judicial system (too many texts, different interpretations) and the problem of enforcement procedures, Senegalese firms avoid using the judicial system. **T**aking the example of the financial sector which is heavily intense in the contract enforcement constraint, the evidence shows that banks may be bypassing the constraint and prefer to require very high guarantees on loans granted. In Senegal, the proportion of loans requiring a guarantee is 78.9%, one of the lowest rates in comparison with the reference countries. During consultations with several surveyors and businesses, it was observed that contract enforcement costs to banks are a major factor for the observed reluctance to extend credit to many SMEs and medium businesses that are demanding credit.

Figure 5- 4: Ratio of loans requiring guarantee (in %)



Source: Enterprise Survey, WDI, 2016

CHAPTER 6: DOES LOW ACCESS TO LAND REPRESENT A BINDING CONSTRAINT TO GROWTH?

6.1 SUMMARY ANALYSIS

Land is a critical input for production in many sectors. For land to be put to its most productive use land must be available in sufficient amount and quality for use; land rights must be secure in order to incentivize investments and productive utilization; land must also be transactable so that land can move from low-productivity producers to high productivity producers.

The Government of Senegal is in the process of reforming the land tenure system to improve socio-economic impacts. In this context, it seeks to boost the national and foreign-level private investment and to promote the involvement of women and young people.

Thin land markets in rural areas deter investment incentives, and poorly protected land rights for women contribute to major constraints they face in rural value chains. While women are present in major rural value chains such as agriculture, horticulture and fisheries, particularly in processing and commercialization in artisanal fishing, they do not have the resources.

Based on evidence, it appears that insecure land tenure is not a binding constraint to Senegal's growth. The shadow price of land tenure appears to be quite high in terms of property registration and transfer, but low in terms of poor quality of land administration. The evidence indicates impacts of land tenure insecurity and low social status on investments in agriculture. Land issues affect females, who make up the majority of food crop growers, denying them income and putting at risk the development of children who are mainly dependent on these incomes.

The above considerations suggest that the evidence on land access appears mixed, making the constraint a major constraint but not binding. Though not binding on the overall economy, land access and land governance issues remain significant.

6.2 BACKGROUND AND BENCHMARKING

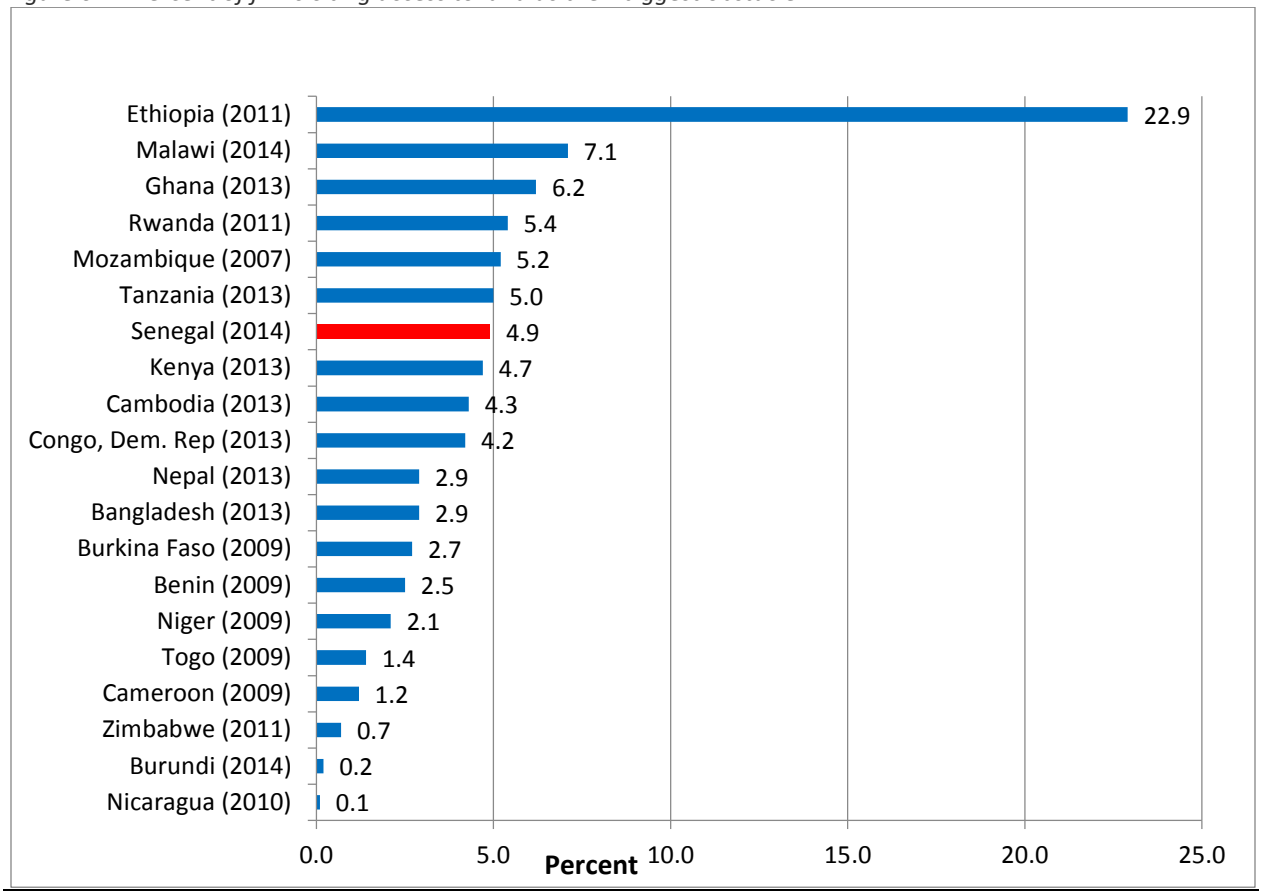
The land issue in Senegal is a very complex reality and its administrative management often proves problematic. Two systems of management and exploitation of land resources coexist in Senegal, namely customary rights and modern law. Land tenure is often criticized for the diversity of its statutes and guardianships. [99] This situation does not facilitate access to and security of land, particularly for women and young people who are largely the majority in rural areas. This is a real challenge as the legal transactions and the necessary land reforms in a country where the population pressure is quite high. This situation is all the more worrying as land remains the main factor of production, development, and reduction of poverty in rural areas. Moreover, land is the source of conflicts in matters of succession, matrimonial regimes, and expropriation for reasons of public utility. As a result, land transaction is difficult especially under customary law.

Access to land is also a constraint which is dependent on the supply of land in attractive investment areas. In addition to the problem of land availability, exorbitant prices, speculation and very long delays (time required to lease land) are seen as additional obstacles that can discourage both domestic and foreign investors. The creation of industrial areas has mitigated to a certain extent the problem of access to land but constraints remain.

[99] The legal status of the national domain - the public domain of the State - the private domain of the State

Figure 6-1 below shows that about 4.9% of Senegalese companies consider access to land as their biggest obstacle. This figure is higher than the average for the reference countries (4.3%). Senegal outranks six countries (Ethiopia, Malawi, Ghana, Rwanda, Mozambique and Tanzania) in access to land for businesses.

Figure 6- 1: Percent of firms citing access to land as their biggest obstacle



Source: Enterprise Surveys

Facilitating land access also involves securing land transactions in the sense that it is one of the elements that can reduce transaction costs in order to attract investors. Table 6-2 below shows the cost of transferring ownership in comparator countries. The cost of the transfer of ownership is 10.2% of the value of the property. The same applies to transfer delays (71), number of procedures (5) and the quality of financial administration indicator (7.5 out of 30).

Table 6- 1: Transfer of propriety ownership

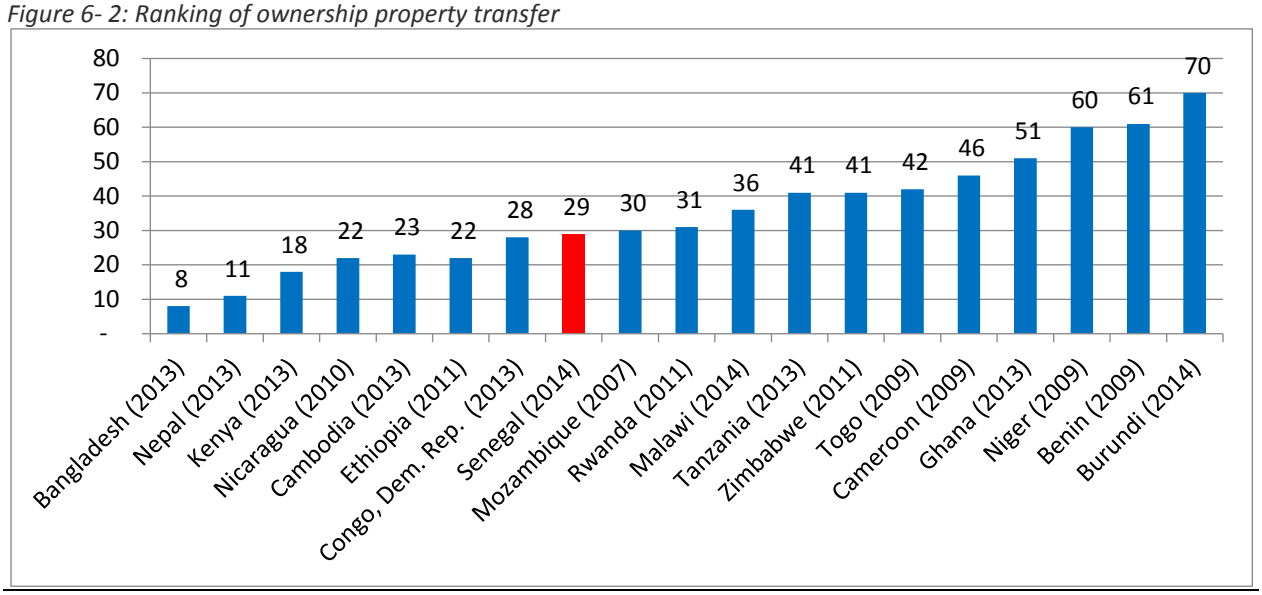
	Number of Procedures	Time (Days)	Cost (% of property value)	Land administration quality indicator (0-30)
Bangladesh	8	244	6.5	4.5

Benin	4	120	11.7	5.5
Burkina Faso	4	67	12.1	9.5
Burundi	5	23	3.2	4.5
Cambodia	7	56	4.4	7.5
Cameroun	5	86	18.9	8
DRC	7	44	9.5	11
Ethiopia	7	52	6.1	4.5
Ghana	5	46	1,1	8
Kenya	9	61	4.2	15
Malawi	6	69	1.8	11
Mozambique	6	40	5.3	9.5
Nepal	3	5	4.8	5.5
Nicaragua	9	58	5	6.5
Niger	4	35	9	4
Rwanda	3	32	0.1	25
Tanzania	8	67	4.4	7.5
Togo	5	288	9.2	5.5
Zimbabwe	5	36	7.6	8.5
Senegal	5	71	10.2	7.5

Source: Doing Business, 2016

Thus, Senegal ranks 152nd out of 158th globally. Compared to comparator countries, it only outranks Bangladesh, Togo, Cameroon and Benin. However, real values are similar (see table above), so they may be a better indicator of true difference than ranking in this context.

Figure 6- 2: Ranking of ownership property transfer



Source: Doing Business, 2016

The literature notes that access to rural land is very difficult in Senegal.[100] Multiple land allocation and use regimes govern the allocation of rural land for production, and land tenure is not assured.

[100]USAID/Senegal, http://www.usaidlandtenure.net/sites/default/files/country-profiles/full-reports/USAID_Land_Tenure_Senegal_Profile.pdf

Rural land administration and allocation systems in Senegal are complex because it is a mix of different tenure systems, including an outdated 1964 land law (inspired by the Napoleonic Code), customary law, and state policy in pioneering zones such as the river valley to attract investment. These different systems are super-imposed by strong social and religious connections to access land both in rural and urban areas.

Land markets are accordingly thin. The Land Governance Assessment Framework (LGAF) scores Senegal at a failing grade of "D" across multiple indicators of the health of the land governance regime, concentrated among indicators related to the Enforcement of Rights, Mechanisms for Recognition of Rights, and Transparency in the Divestiture of Public Land.[101] The weaknesses in the first two have important impacts on women and their agency over land assets. Power to allocate land rests with local governing councils which vary to a significant degree in their application of rules and allocation of land for purpose. Furthermore, the Land Law has two qualitative provisions that can be used to effectively deny women (and possibly other social groups) land rights. Women who are recognized household heads may be able to access land, but we do not know whether that land is of similar quality as those offered to male heads of household, and it is difficult for a woman to become a recognized household leader. Women may access land as a group or association of women; several surveys and field experience since 1990's support this observation.[102] However, this adds to the managerial costs of investing in and managing the yield of that land as multiple decision-makers must be brought into agreement as opposed to a single person. Senegalese land law stipulates that land can be taken from those who have not made productive improvements to the land – a rule that is commonly applied in urban areas subjectively or politically to commandeer productive land from those to whom it is allocated. The extent to which it is applied in rural areas is unknown at this time.

The rural land administration is highly location-specific and the practices of land allocation favor discrimination and inequity. Land administration is governed by an unclear mix of French formal law, traditional customs and socio-religious practices. As a result, tenure security issues for women are severe. The land rights are infrequently documented, hard to ascertain formally. Land markets are extremely thin and this reduces the allocative efficiency and incentives to make productive investments. Rural land administration systems prevent secure transfer from low-productive to high-productive activities. Large investors were able to find land concessions that were enforced under law when tested. Rural land markets are unlikely to deepen until land's value as a social safety net diminishes.

Doing Business ranks Senegal 152/170 for Registering Property and 42% of firms see it as a major or severe constraint. In terms of urban land, speculation in prices in Dakar has sent rentals as high as $1800/m2. About 25% of Dakar land is informal settlements with no access to services (2010). The cheapest price of a newly built house by a formal contractor in Dakar (2012) is $49,202 for 150 m2. The "New industrial city" Diamnadio designed outside of Dakar aims to address, among other things, availability of suitable industrial land in Dakar. Manufacturers and medium-sized firms face substantial obstacles to new construction as the evidence shows a high cost of property registration and a low quality of land administration. Urban lands seem to have

[101]World Bank, Land Governance Assessment Framework, http://web.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTARDR/EXTLGA/0,,contentMDK:23379371~pagePK:64168445~piPK:64168309~theSitePK:7630425,00.html

[102] Note that this adds to management challenges for land owned by women, as decisions must be made via group-decision making process rather than unilaterally by a single entrepreneur or investor.

less issues per World Bank indicators, however high price due to narrow availability and speculation over land may discourage investment.

Some agricultural exporters have been able to aggregate large enough tracts of land in the northern areas around Saint-Louis through cooperative agreements with local councils. However, tenure insecurity has been noted as a deterrent to agricultural investments by women and people with fewer connections to local elites. Also, almost all of the non-local investors with whom the team consulted reported experiencing some level of land conflict. Observers note that the poor documentation of land rights creates highly risky environments for investors, unless these risks are partly or fully mitigated by having strong social or political connections. Tenure insecurity and land conflicts have also been noted by observers in Senegal, who also report evidence of the importance of political connections and social power in accessing land.[103] Updated studies are finding that the increasing commercial value of some rural land is intensifying the level of local conflict over land and is generating greater insecurity of tenure.[104]

Despite the well-documented issues concerning the granting, documentation and enforcement of rural land rights, these issues did not appear in field work to rise to the level of binding for the country as a whole. Large-scale horticulturalists and smallholder farmers recognized that they did not have formal and secure tenure to their land, but also felt safe in the security of their access to and use of the land under their control.[105] It is worth noting that these investors were all male. As noted above, security of tenure issues for women remain significant. Women face major legal and social barriers to accessing and controlling land. Qualitative legal rules allow for land to be expropriated more easily from women, since their rights to inherit land are tenuous and can be easily challenged. This is exacerbated by the poor documentation of rights for women when they exist, and the low social status of women in a context where social connections are important to access land and contribute to increasing the transaction costs for securing and protecting rights on land.

The key to land aggregation and security of access for larger-scale use appears to lie with the local administration. In areas where localities had granted use rights to large tracts of land for investment in agriculture, those rights were generally well-enforced even in the face of local resistance. However, the willingness of localities to grant land access, in large amounts, to domestic or foreign investors varies widely; some localities are unwilling or unable to partner with larger-scale operations.

Several studies note that the urbanization of Dakar has been mismanaged and GOS recognizes significant upward pressure on urban prices in Dakar, as well as the disappearance of space for important urban activities, including urban agriculture.[106] To relieve pressure on firms and individuals, the GOS is currently constructing a mixed-use industrial and technological park

[103] Mayke Kaag, Yaram Gaye & Marieke Kruis, Accountability in Land Governance: A Study into the Stakes in Senegal (2011), http://www.landgovernance.org/system/files/Senegal%20Research%20Report%20edited.pdf

[104] Mayke Kaag, Yaram Gaye & Marieke Kruis, Land conflicts in Senegal revisited: Continuities and emerging dynamics, http://www.landgovernance.org/assets/Kaag-Land-Conflicts-in-Senegal-Revisited1.pdf; See also, IRIN News, Fury over Senegal's private land buyers (2014), http://www.irinnews.org/report/100258/fury-over-senegal%E2%80%99s-private-land-buyers

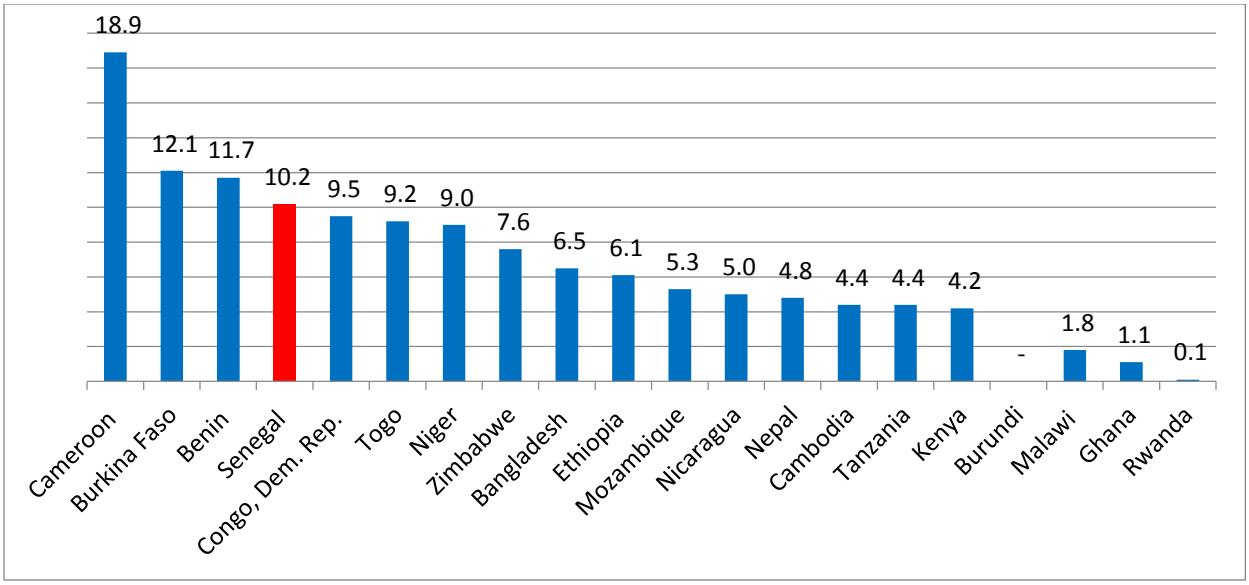
[105] One large foreign horticulturalist consulted felt confident that s/he had secure access to the land even though it was not securitized because expropriation on the part of the local administration would send a strong signal to other foreign investors who might bring good-paying jobs to the area.

[106] Wang et al, Preparing to Manage Natural Hazards and Climate Change Risks in Dakar, Senegal (2009) https://www.gfdrr.org/sites/gfdrr/files/publication/GFDRR_Climate_and_Natural_Hazard_Risks_Dakar-Senegal.pdf

outside of Dakar, along with a new expressway intended to ease congestion and crowding in Dakar for large firms and their employees. Furthermore, while taxes on construction and transfer of urban land and buildings are high – higher than comparators – the processes for leasing land are better than comparators', enabling firms to access urban land without purchasing or doing own-construction.

Figure 6-3 below shows that Senegal has a very high transfer cost of ownership compared to comparator countries.

Figure 6- 3: Cost of transfer of ownership compared to comparator countries (as% of value of property)

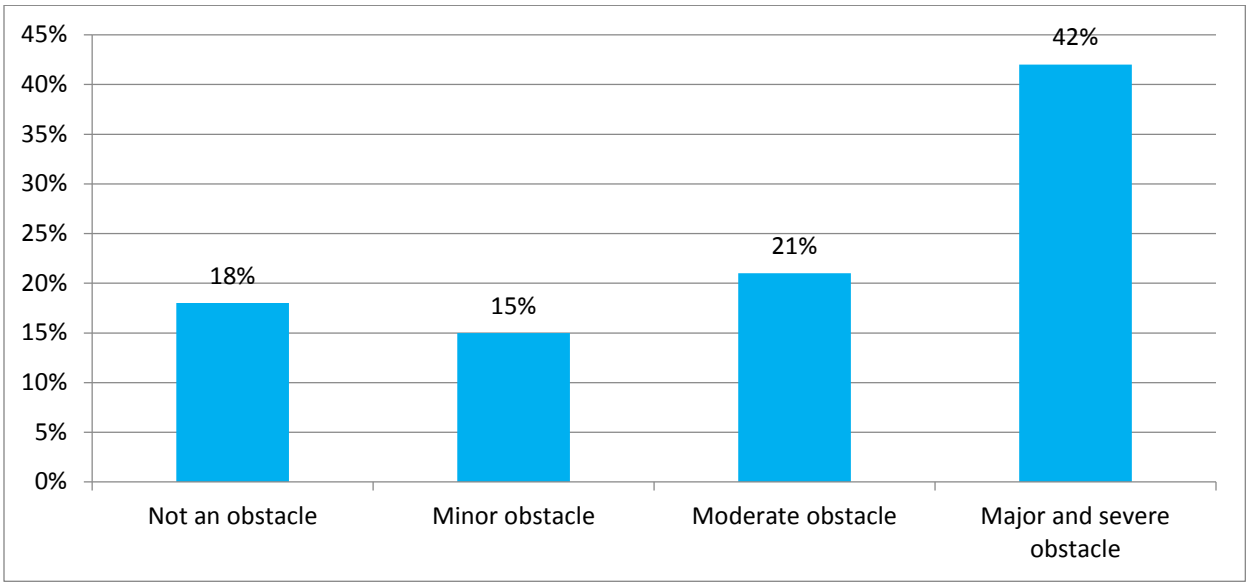


Source: Doing Business, 2016

Enterprises based in Senegal consider that access to industrial land is difficult and a constraint on the development of their activities.

According to the World Bank's 2014 Business Survey, about 42% of enterprises identify access to land as a major or severe constraint.

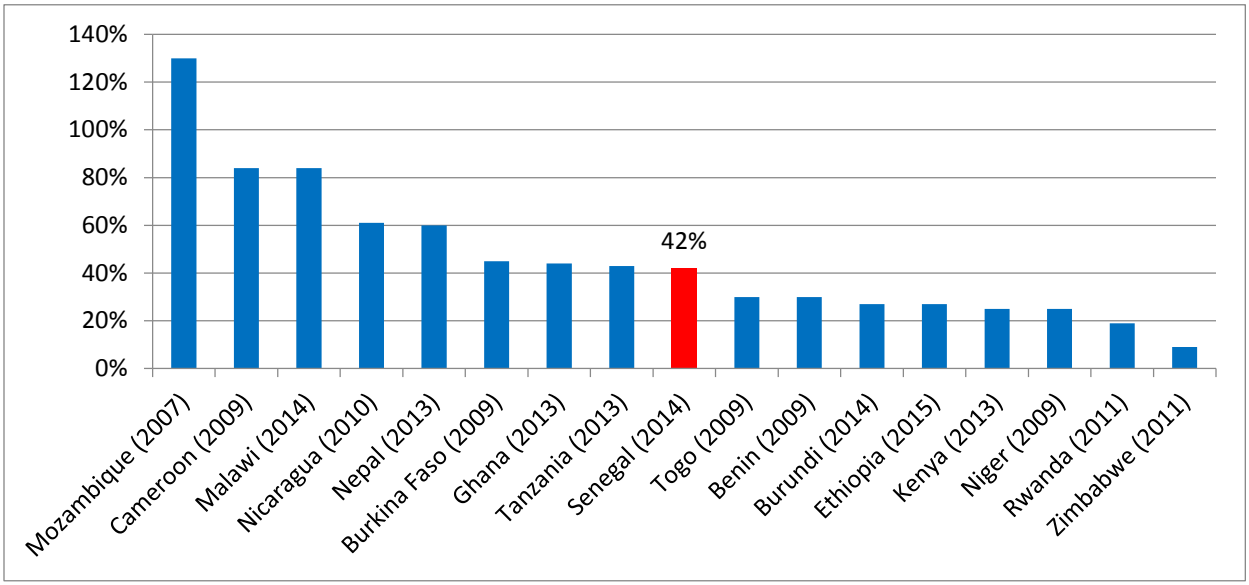
Figure 6- 4: Difficulty of accessing land in Senegal



Source: Enterprise Surveys (2014)

Compared to the reference countries, Senegal ranks ninth in terms of the difficulty of business' access to land which is not far from the average (48%).

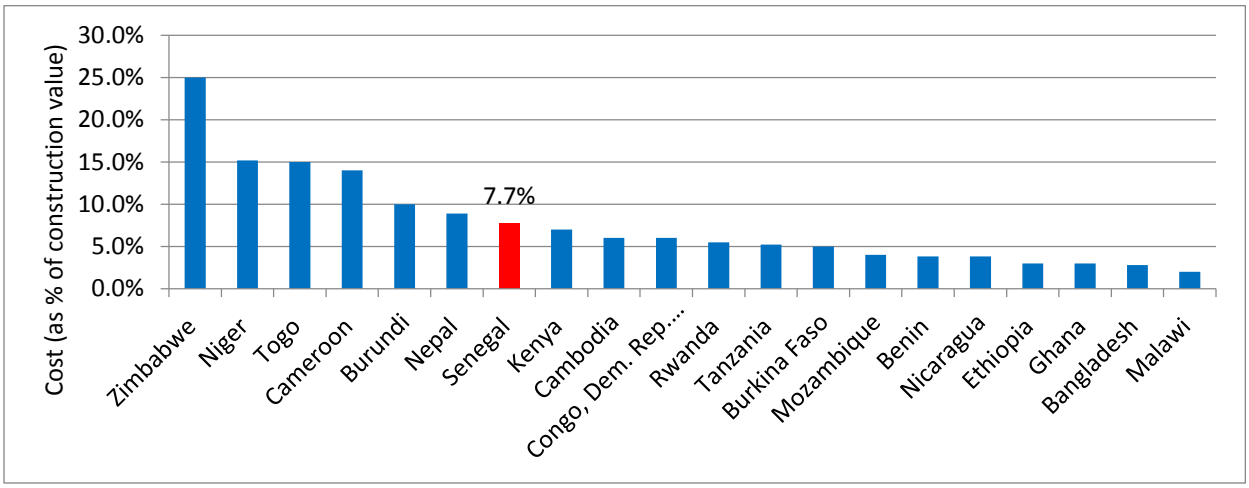
Figure 6- 5: Access to land as a major or severe constraint



Source: Enterprise Surveys, 2014

The decline in land reserves in attractive investment areas makes access to land difficult for industries. To overcome this problem, the State has turned towards the creation of industrial zones, which has increased the availability of more industrial spaces. However, the procedural aspects continue to be a constraint. The cost of acquiring a construction permit as a percentage of the value of construction is very high in Senegal (7.7%) compared to the reference countries.

Figure 6- 6: Authorization of construction permits: cost (% of construction value)

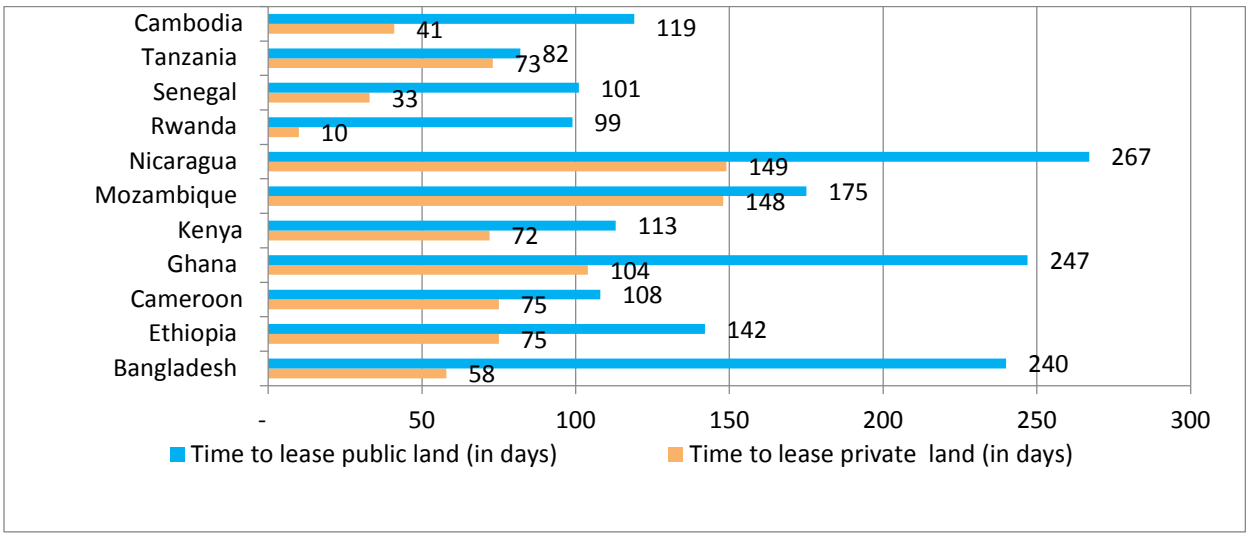


Source: Doing Business 2016

In terms of circumventing the constraint (Test 3), it is observed that large horticulture exporters prefer to contract with male farmers because they have more secure tenure rights than women.

The time required to lease a land, whether public or private, in Senegal contrasts with the time required to obtain a construction permit. Referring to the World Bank data on "Accessing Industrial Land", Senegal has a shorter time to lease a public industrial land (101 days) among the comparator countries. It is only outranked by Rwanda (99 days) and Tanzania (82 days). As for lease of a private industrial land, Senegal (33 days) is preceded by Rwanda (10 days).

Figure 6- 7: Time to lease land (private and public) in number of days (2010)



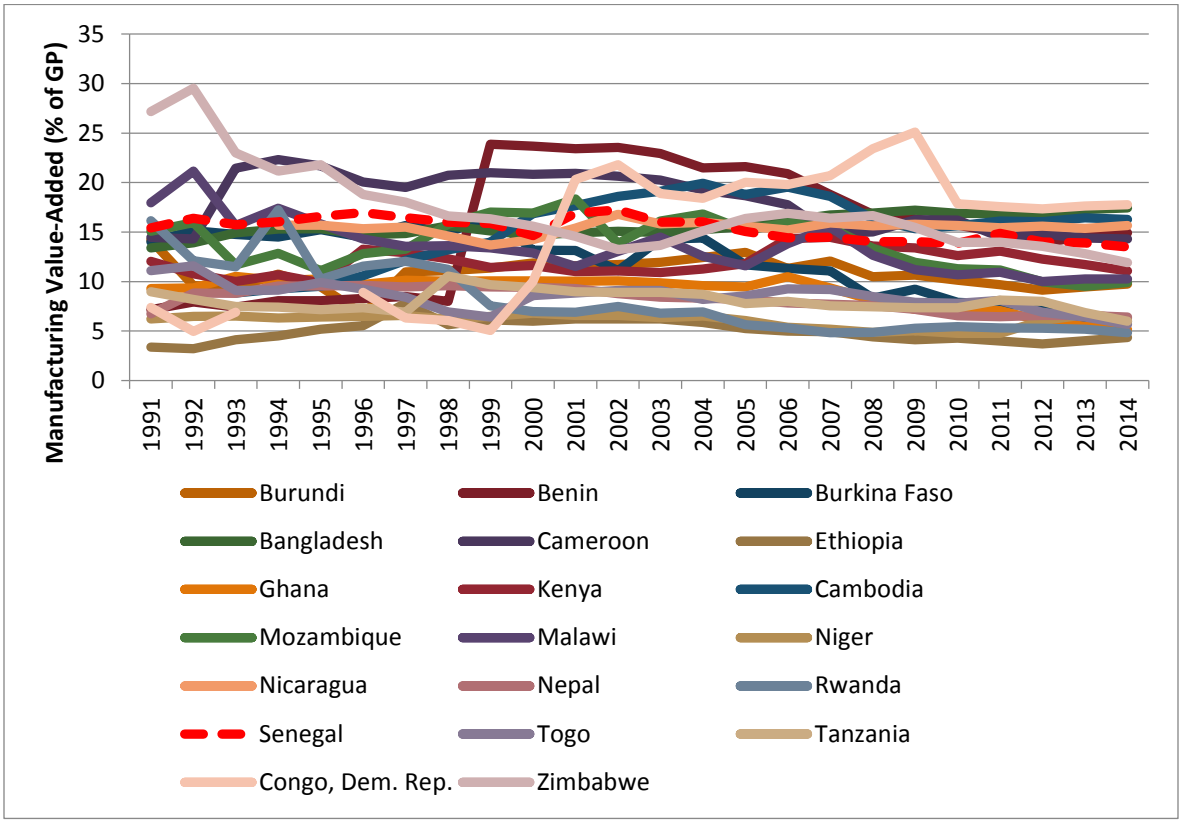
Source: Accessing Industrial Land, World Bank, 2010

In order to remove the constraint on the cost of obtaining a construction permit, the GOS has been working since 2015 on reducing the costs of issuing permits, in order to consolidate Senegal's position as one of the best reformers in the world. Senegal has been working to

modernize its land administration systems – land registries, cadasters and land information systems. For example, in terms of construction permits, APIX reports an internal reorganization of the Dakar regional planning department by setting up the physical and electronic windows (TELEDAC). The purpose of this reorganization is to reduce costs and the time required to issue construction permits.

Firms which are heavily dependent on accessibility to industrial land do not thrive when industrial land is a constraint on private investment. However, the value added of the manufacturing sector in the formation of Senegal's GDP relative to the reference countries is high (15.32% on average). Senegal is ahead only of Cameroon (18.08%) and Zimbabwe (17.19%).

Figure 6- 8: Manufacturing, value-added (% of GDP)



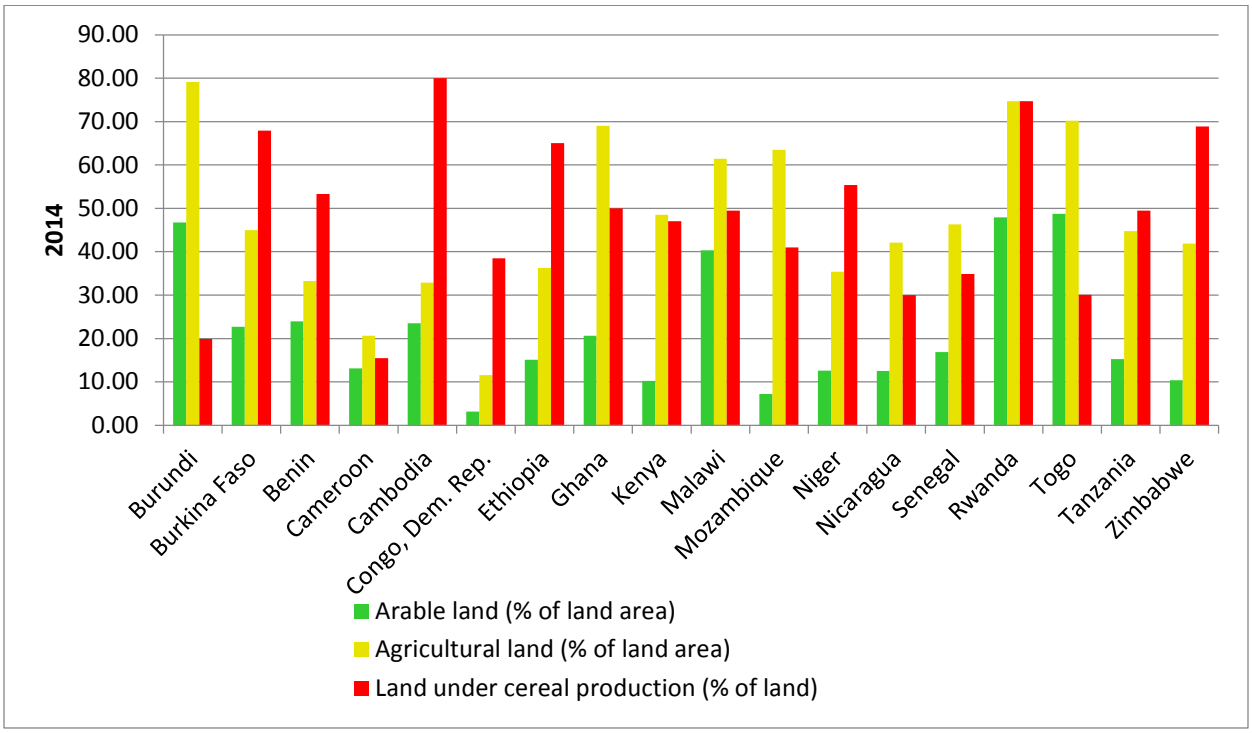
Source: Authors, WDI 2016

Senegal's ranking can be justified by the dynamics of reforms in the industrial land sector that encourages the creation of enterprises.

In the agricultural land system, where agriculture and arable lands are scarce or difficult to access, major portions of the land is used for the production of cereals which do not necessarily require heavy investments. In Senegal a relatively large portion of the arable land is devoted to the cultivation of cereals practiced by small farmers who cultivate the land on traditional land tenure systems.

Comparison of the share of arable land devoted to cereal crops between Senegal and reference countries shows that in 2014, 34.9% of arable land was used for growing cereals, compared to 67.9% for Burkina Faso, 65.07% for Ethiopia, 47.07% for Kenya, 49.5% for Malawi. Senegal only outranks a few countries of reference.

Figure 6- 9: Agriculture, arable and land under cereal production (% of land)



Source: Authors, WDI 2016

The evidence also shows a negative correlation between land used for cereal production and GDP per capita. The weakness of land used for cereal production in Senegal, compared to comparator countries, is confirmed in relation to its level of development.

CHAPTER 7: FINANCE: DOES COSTLY FINANCE REPRESENT A BINDING CONSTRAINT TO GROWTH?

7.1 SUMMARY ANALYSIS

High cost of finance can be a constraint on private investment and economic growth and thus discourages the private sector from investing in promising projects. The cost of Finance constitutes one of the factors blocking private initiative when the return on investment fails to fully cover the costs. The cost of finance constraint may stem from the fact that entrepreneurs do not have access to both domestic and international savings or because of the lack of financial intermediation that would prevent efficient allocation of available financial resources.

Senegal's financial sector is characterized by a range of structural problems that are critical to private investments and economic growth: 51.6 % of firms in Senegal identify access to finance as a major constraint despite the high volume of lending by the banking system. Senegal has moderately low levels of domestic savings but the volume of credits extended is well above the average of comparators and higher than all WAEMU countries. The Heritage Index of Financial Freedom shows that Senegal is above average in terms of banking system efficiency, but Senegal remains below some countries in the region such as Ghana. The interest rate is low and compares to other countries in the WAEMU region, but banks seem to only lend to same clients and industry that they favor and who have the necessary collateral. Smaller borrowers are the most negatively affected by the banking system inefficiencies.

Underlying market failures prevent small, domestic or non-exporting firms from accessing credit on reasonable terms. Access to finance does not address structural issues that cause low productivity, which need to be addressed prior to credit concerns.

In terms of the four tests, this evidence suggests that, while critical, cost of finance does not rise to the level of major binding constraint to private investments and economic growth. First, Senegal appears to have the lowest intermediation margin and interest rates are moderate particularly for short-term loans. The evidence shows that Senegal has the lowest Borrowing Interest Rate of the WAEMU and has extended the largest number of new credits within the Union. Second, credit to private sector has been increasing, with no resulting growth suggesting that there is no correlation between interest rates and investments. Third, as banks require high rates of collateral, firms tend to auto-finance their activities using their own resources and earnings.

The evidence considered in this section leads to a conclusion that the high cost of finance is not a binding constraint to investment growth in Senegal. However, while it does not rise to the level of "binding," it does appear to be a major constraint to growth, especially for SMEs. From the evidence reviewed, it appears that Senegal has one of the highest collateral and bad loan requirements compared to the comparator countries. Senegal's credit ratio is also above all comparator countries. This indicates a certain difficulty for banks to recover loans and an inefficiency of the banking system. It should be noted that this level of credit to the economy remains low compared to those in emerging economies These risks include poor contract enforcement, insecurity of land tenure as it affects quality of property-based collateral, lack of credit references, and the lack of established borrower-lender relations. These risks mostly manifest themselves in the inability of borrowers to provide collateral for loans and the inability of lenders to foreclose on borrowers in default.

While we argue that effects of finance appear to be magnified through micro distortions in contract enforcement, insecurity of land tenure, and the lack of a credit reference system, all of these

factors and constraints interact to amplify the effect credit constraints have on small and medium firms.

7.2 BACKGROUND AND BENCHMARKING

Senegal's financial sector is a bank-based system in the sense that financial intermediation is largely dominated by banks. It is made up of banks, financial institutions, insurance companies and the decentralized financial system. The banking system consists of the Central Bank of West African States (BCEAO), credit banks and financial institutions. The BCEAO is common to the eight member countries of the West African Economic Monetary Union (WAEMU), with the responsibilities for conducting monetary policy and issues, and supervision of banks and financial institutions. Senegal's banking system is composed of 22 banks and three financial institutions in 2016. The dynamism of banking activities has made Senegal the second country in the UMOA zone, behind Cote d'Ivoire in terms of banking assets, concentrating 19.5% of the banks (banking commission of the BCEAO 2014)). In addition, 19.5% of the assets of the banks in the region are based in Senegal, and roughly one third of all profits. In terms of banking rates, Senegal with 16.33% is behind Côte d'Ivoire (20.36%), Togo (19.61%) and Benin (17.05%).

Soundness of the Financial Sector

Senegal displays relative financial depth for its level of income, and the most financially deep of the WEAMU member countries. Senegal has the lowest borrowing rate in WAEMU at 6.85% average and is second only to Cote d'Ivoire among WAEMU countries in terms of the average amount of new credit extended. Additionally, Senegal has seen a large expansion in credit to the private sector over time. However, significant problems remain, notably the high rate of non-performing loans, the concentration of lending to certain borrowers, and the short maturation of the majority of loans.[107]

Consultations and available data indicate important problems with the financial sector that limit the ability of firms to access finance. This problem appears to be most significant for small, domestically-owned, or non-exporting firms. Exporting firms are almost twice as likely to have a line of credit with a bank (46.1%) than non-exporting firms (20.6%). [108] Collateral requirements for non-exporters average 318% of the value of the loan, one-third more than the SSA and global averages. Half of exporting firms use banks to finance investment, whereas only 9% of non-exporters do.[109] The amount of financing for investment provided by banks to non-exporting firms (3.5% of total investment need) is almost one-third of the SSA average (9.2%), and one-fourth of the global average (14.3%). Although, exporting firms are significantly more likely than the global and SSA average to use supplier credit to finance investments, reflecting greater integration with global supply chains, non-exporters are significantly more likely to use supplier credit to finance working capital (12.9%) which is greater than the global (11.0) or SSA average for non-exporters (8.4%).

Table 7- 1: Lowest interest and intermediation rates of WAEMU

[107] For an overview of the financial system in Senegal, see: Patrick Imam and Christina Kolerus, Senegal Financial Depth and Macro stability (2013) https://www.imf.org/external/pubs/ft/dp/2013/afr1305.pdf

[108] Exporting firms have more lines of credit than the SSA or Global average; non-exporting firms are around both averages.

[109] This low rate is half of the global average for domestic producers. Exporting firms are significantly more likely to use bank financing for investment than the global or SSA average.

	Bénin	Burkina	Côte d'Ivoire	Mali	Niger	Sénégal	Togo
Borrowing rate							
Average	10.64	9.78	7.54	9.76	11.84	6.85	10.07
Standard Deviation	1.13	0.92	0.65	0.57	0.96	0.72	1.04
Min	8.02	7.95	4.9	8.45	9.64	5.34	7.53
Max	12.41	12.38	8.9	10.92	13.79	8.23	13.35
Intermediation margin							
Average	6.12	4.67	2.49	4.92	6.95	2.26	5.43
Standard Deviation	1.36	1.2	0.74	0.63	1.13	0.59	1.12
Min	3.11	2.44	0.06	3.57	4.42	1.25	2.86
Max	8.55	7.9	4.12	6.14	9.58	3.67	8.81
New Credit Extended							
Average	27,559	28,180	137,281	30,839	13,609	104,589	12,230
Standard Deviation	14,399	19,587	40,272	16,229	6,189	28,292	6,264
Min	5,202	6,505	65,172	5,696	4,691	55,631	2,393
Max	62,265	83,646	263,641	75,915	35,009	189,595	31,583

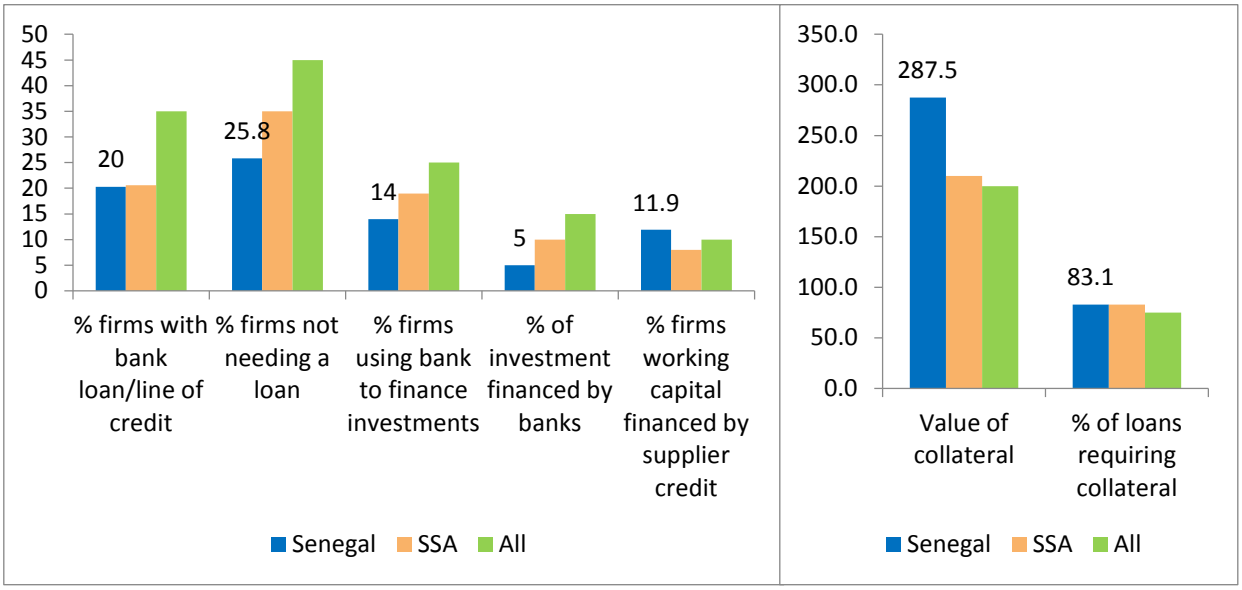
Source: BCEAO

The patterns in finance access and utilization among exporting and domestic firms closely follow those among domestically versus foreign-owned firms. The patterns for medium and small firms generally follow these patterns as well. Ninety-five percent of medium-sized firms required collateral for their loans, compared to 85.2% and 81% for the SSA and global average for medium-sized firms, respectively. The collateral requirement is also somewhat higher at 228% of the total loan value.[110] Only 70% of large firms are obligated to provide collateral, and the value of that collateral is lower than the global average for large firms (190.2%). Just over 15% of medium-sized firms used banks to finance investment, 7% lower than the SSA average. Medium-sized firms appear to have access to banks to finance working capital, and are less likely than both small and large firms to use supplier credit to finance working capital.

Figure 7- 1: Accessing Credit

[110] The collateral requirement for small firms is 429.7%, almost twice as high as the SSA for small firms.

Domestic firms experience greater difficulty accessing credit than domestic firms in SSA or globally



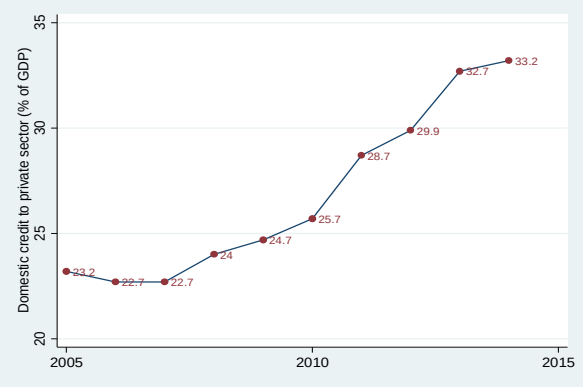
Source: World Development Indicators (WDI)

While we recognize significant asymmetries between access to credit for smaller, domestically-owned firms, we are unable to find compelling evidence that access to finance is an overall constraint, given the relatively low borrowing cost for firms that receive access and the weak relationship between indicators of financial access or depth and overall levels of investment or productivity.

Though the team has determined that finance is non-constraining relative to other possible constraints, the magnitude of the differentials described above between small or local firms and large or foreign firms indicates a high likelihood that the financial system is failing to direct capital to its most productive uses. These failures seem likely to be caused by information asymmetries and contract enforcement failures.

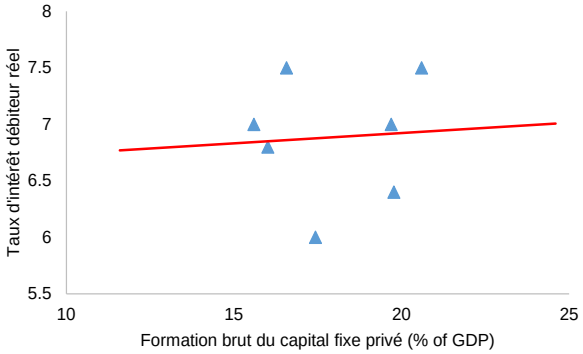
Figure 7- 2: Credit to private sector and economic outcomes

Credit to private sector is increasing



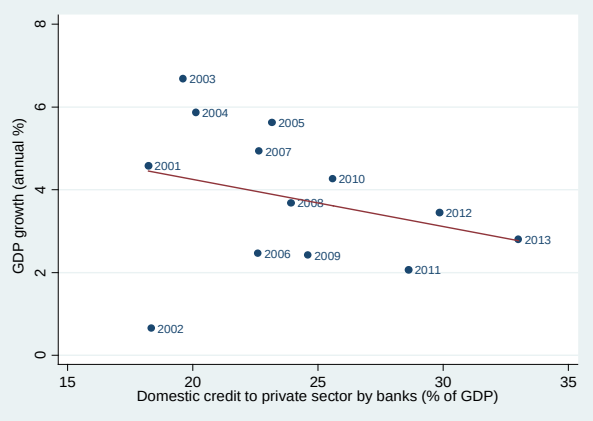
Source: WDI

But, there is no discernible correlation between interest rate and fixed capital formation.



Gross accumulation of fixed private capital (% of GDP)

There is no clear association between credit measures and economic growth or investment.



Source: WDI

Contextual evidence in the Micro risks in Chapter 5 (Contract Enforcement and Property Rights) and the high value of collateral implies this could be due, among other things, to weak contract enforcement mechanisms, and to information asymmetries between lenders and borrowers.[111] This conclusion seems reasonable in Senegal, where the rate of non-performing loans hovers between 17-20 percent annually, considerably higher than comparators or global averages at any level of income. Perhaps not surprisingly, 54% of non-exporters cite access to finance as a major constraint to their business, well above both the SSA (37.6%) and global averages (25.7%) for non-exporters. Only 23.3% of exporters cite finance as a major constraint, consistent with the global average (25%) and well below the global average for exporters (33%).

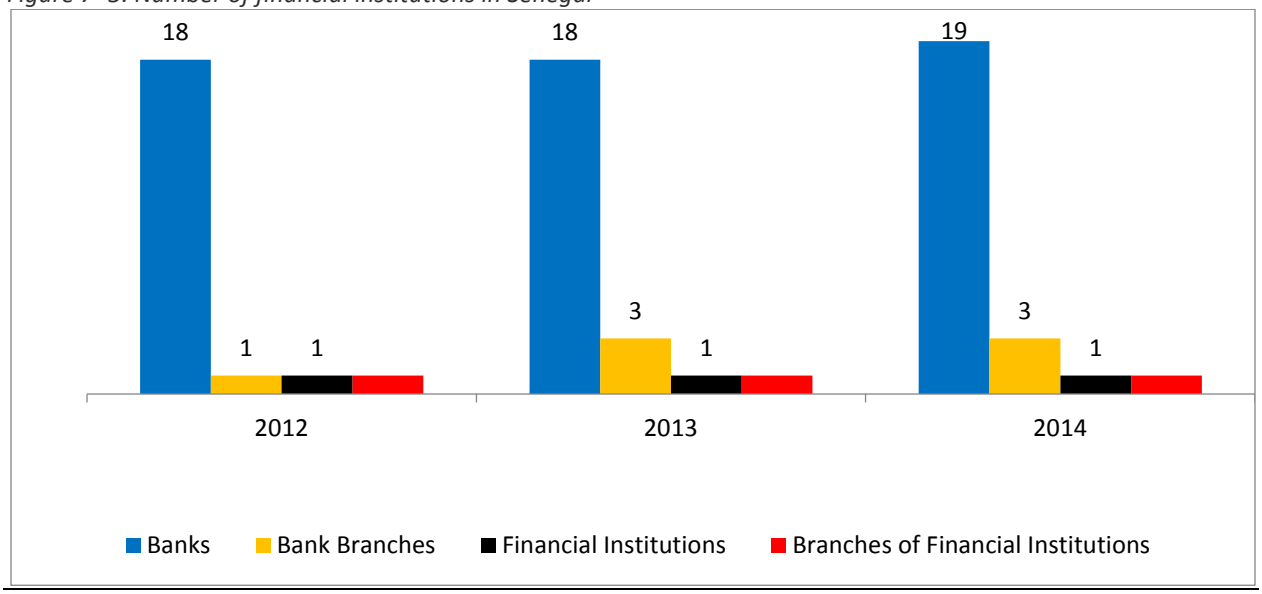
[111] Quian and Strahan (unpublished working paper): How Law & Institutions Shape Financial Contracts: The Case of Bank Loan. (Paper argues that banks offset weak property rights by shortening loan maturity and raising collateral requirements). See: http://fic.wharton.upenn.edu/fic/papers/04/0420.pdf

Measuring the effectiveness of the banking system

Senegal's financial sector is dominated by traditional banks, which play a small part in financing the Senegalese economy. The informal nature of the economy combined with the absence of a fully independent judicial system has led banks to adopt a very cautious approach to credit, and bank financing was estimated to be about 25 per cent by 2015. Restricted access to financial systems remains problematic.

The country's banking sector has become a major player in the West African Economic and Monetary Union (WAEMU), with 19.5% of the banks' assets in the region based in Senegal, and with the Senegalese banking sector gaining one third of all profits. The financial crisis seems to have a negligible impact on the system, but slowdowns in economic growth have led to deterioration in the quality of bank credit. Like other WAEMU countries, compliance with prudential supervision requirements has been mixed in the past, although most Senegalese banks are able to meet the minimum capital requirements under new rules and regulations.

Figure 7- 3: Number of financial institutions in Senegal



Source: BCEAO, WAEMU Commission

According to a review by the Centre for Affordable Housing Finance in Africa (CAHF), access to finance in the country is low – only about six percent of the country's population over the age of 15 have a bank account, and only two percent use an account to receive wages.[112] Three major banks control two-thirds of all deposits, and the government owns over 25 percent of the shares in seven of the country's banks. Many factors hinder the country's banking system from extending medium-term and long-term loans to businesses and individuals.

[112] A review of some of Africa's housing finance markets, Center for Affordable Housing Finance in Africa, 2016 Yearbook (page 199).

Table 7- 2: Bank penetration and bank assets in WAEMU

	Bank Penetration (percent)	Percent of assets of banks in the Union
Benin	17.05	12.2 %
Burkina Faso	13.14	13.6 %
Cote d'Ivoire	20.36	28.1%
Guinea-Bissau	8.84	0.7 %
Mali	14.57	13.6 %
Niger	4.89	4.6 %
Senegal	16.33	19.5 %
Togo	19.61	7.4 %

Source: BCEAO, WAEMU Banking Commission Annual Report; 4th quarter information (2015)

The microfinance sector has expanded remarkably in recent years, bridging the financing gap of agents excluded from the traditional system. It had three hundred and eighty-three decentralized financial systems (DFS) approved in 2014. The assets of the DFS increased from CFAF 370.4 billion in 2014 to CFAF 393.8 billion in 2015, an increase of 6.3 %. The penetration rate of the total population is 16.08% in June 2015; the number and clients of DFS increased from 2,193,268 in 2014 to 2,254,342 in 2015. [113].

Senegal has a growing microfinance sector, which includes profitable microfinance institutions and sound supervision. The microfinance sector is highly saturated, with six major institutions accounting for 87 percent of customers and 90 percent of all outstanding credit. However, current borrowers in the agriculture and natural resources sectors in Senegal are not well served by commercial banks because of borrowers' lack of credit history, the lack of knowledge of these sectors' potential, and the absence of banks in the target areas. Two loan guarantees from USAID are currently helping the micro financial institutions (MFIs) increase their lending to micro- and small-sized enterprises in the country's agricultural and natural resources sectors. The guarantees have a 25:1 leverage rate of private capital to U.S. government resources. There is one public registry and no private credit bureaus in Senegal.

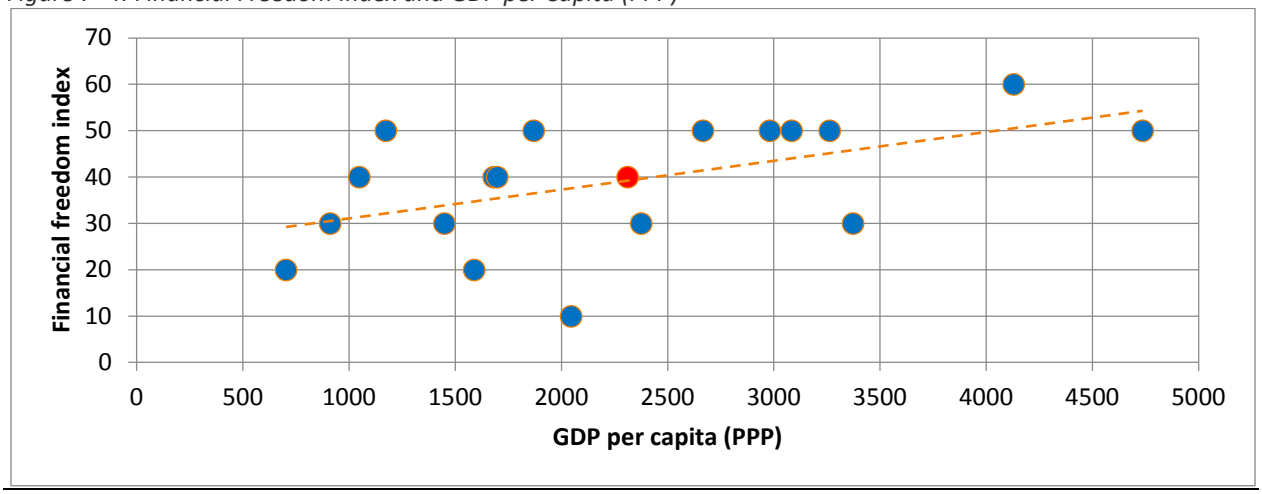
The Financial Freedom Index measures the efficiency of the banking system and its independence from interference and control by the central government. In an economy where commercial banks and other financial institutions (such as insurance companies and capital markets) belong to the state, competition is reduced and the financial services available to companies are limited.

According to the BCEAO, Senegal's shares in the banks' capital shows that the state is a shareholder of 188 billion CFA francs on all the banks, representing 17% of the total capital of the banks (BCEAO). Its holdings are mainly concentrated in banks specializing in housing (BHS), in SMEs (BNDE), in agriculture and agribusiness (CNCAS); The other participations are not significant (CBAO, SGBS, ECOBANK, BICIS, etc.). With such a configuration, the interference of the State on the banking system is reduced. In addition, supervision and bank supervision are the responsibility of the Banking Commission of the BCEAO.

Between 2010 and 2016, Senegal's score in terms of financial freedom remained unchanged and remained at 40 on a scale of 100.

[113] Microfinance Branch 2015

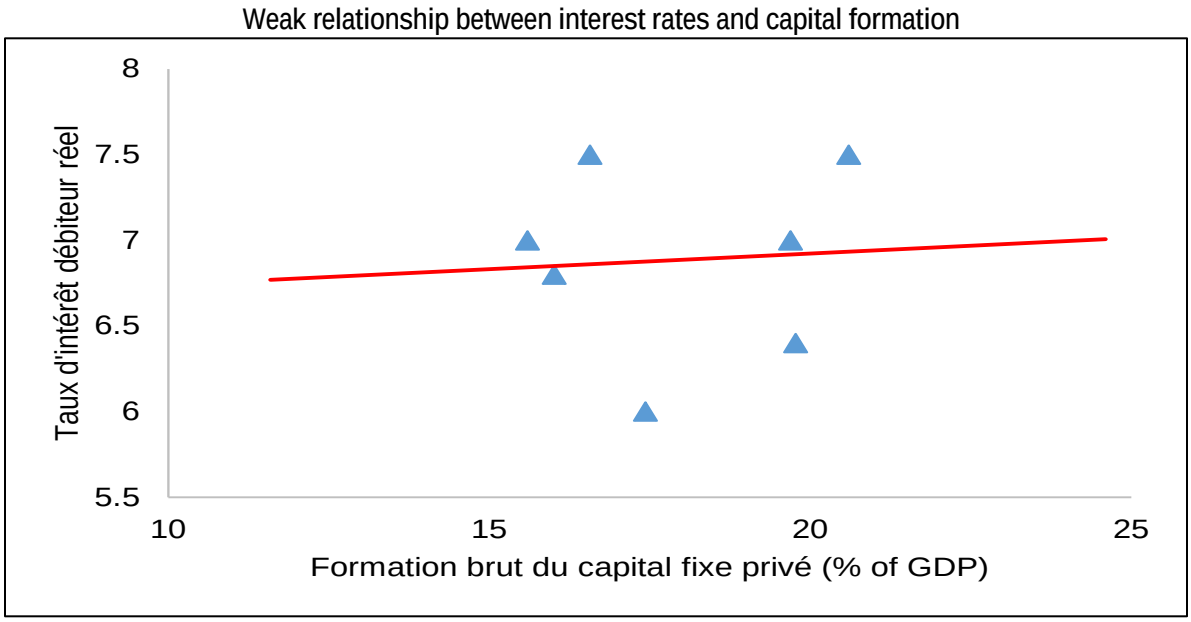
Figure 7- 4: Financial Freedom Index and GDP per Capita (PPP)



Source: Heritage Foundation and Authors Calculation (2016)

The financial system in Senegal is dominated by the banking sector. It is composed of 20 commercial banks concentrated in the three largest cities. Banks make up about 90 percent of the financial system (Table 7-1). The five largest banks account for 66 percent of assets and collect 79 percent of deposits. A large number of microfinance institutions (MFIs; 234 establishments) supply limited financial services targeting lower-income households. Although they cover both urban and rural regions, about half of the sector's activity is concentrated in greater Dakar region. Insurance companies (25) account for most of the remainder of the domestic financial system. The regional securities and equity market is a marginal source of funding, except for the government.

Figure 7- 5: Relationship between real interest rates and capital formation (% of GDP)



Source: WDI

Both Senegal and Cote d'Ivoire have a dynamic banking sector as attested by their respective contributions of 20.4% and 27.4% respectively, to net employment. Customer loans account for more than half of these jobs and are constantly expanding. This increase in the credit portfolio is in parallel with the increase in outstanding loans generally in the WAEMU zone. This trend is confirmed by the analysis of the data in Table 7-3 below, in particular for the case of Senegal. Indeed, there is a relatively well managed portfolio in terms of variation in the amount of outstanding loans over the period 2012-2014. This variation dropped from 23% over the period 2012-2013 to 10% between 2013 and 2014. However, this decrease conceals a certain disparity in its composition. Bad loans increased from 15% in 2013 to 36% in 2014. Senegal is thus one of the countries whose claims are the highest in the union and exceeds the average of the sample.

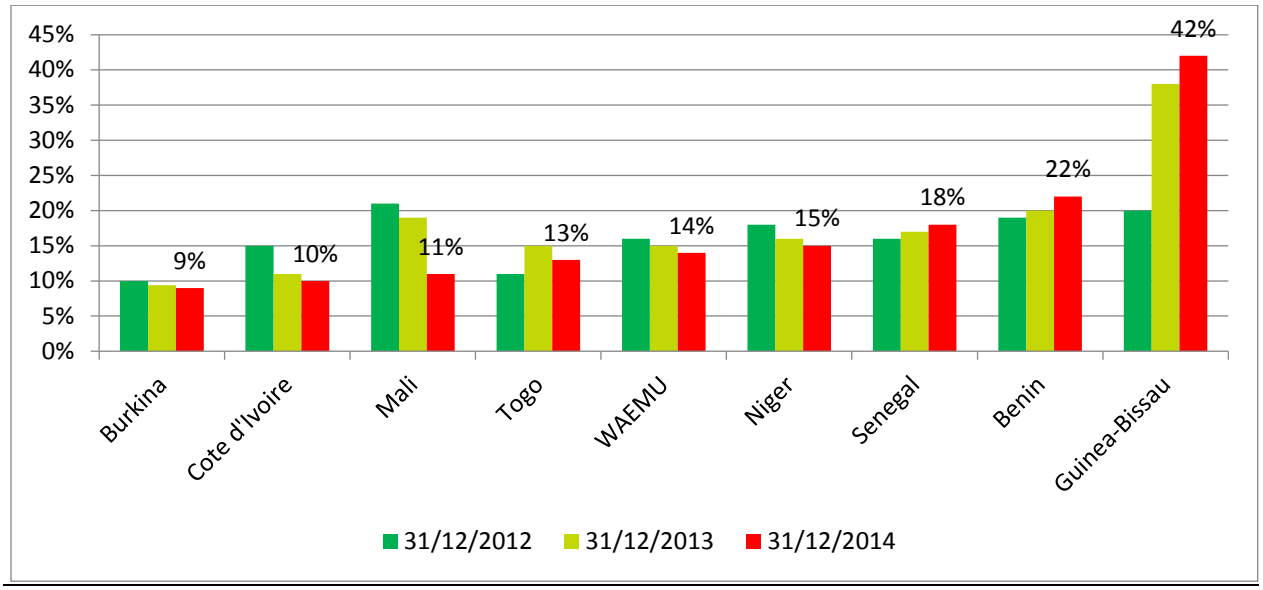
Table 7- 3: Variation in Non-performing loans

	Variation			
	Bad Loans		of which Doubtful and Litigious Loans	
	2012-2013	2013-2014	2012-2013	2013-2014
Benin	39.4%	12.9%	65.1%	4.3%
Burkina Faso	21.1%	7.2%	12.8%	20.1%
Cote d'Ivoire	3.6%	-7.3%	13.4%	-6.8%
Guinea-Bissau	17.7%	25.5%	550.1%	25.5%
Mali	11.2%	-23.8%	29.4%	-20.8%
Niger	-23.4%	39.8%	-17.9%	-3.3%
Senegal	23.0%	10.0%	15,1%	36.7%
Togo	60.5%	33.7%	111.3%	-5.4%
WAEMU	18.7%	5.1%	30.5%	7.8%

Source: Source: BCEAO, Banking Commission Report

The increase in default rates is also reflected in the deterioration of the client portfolio. In fact, Senegal in 2014 had a deterioration rate of the client portfolio of 18.4%, exceeding the WAEMU average of 13.8%; Only Benin and Guinea-Bissau outrank Senegal.

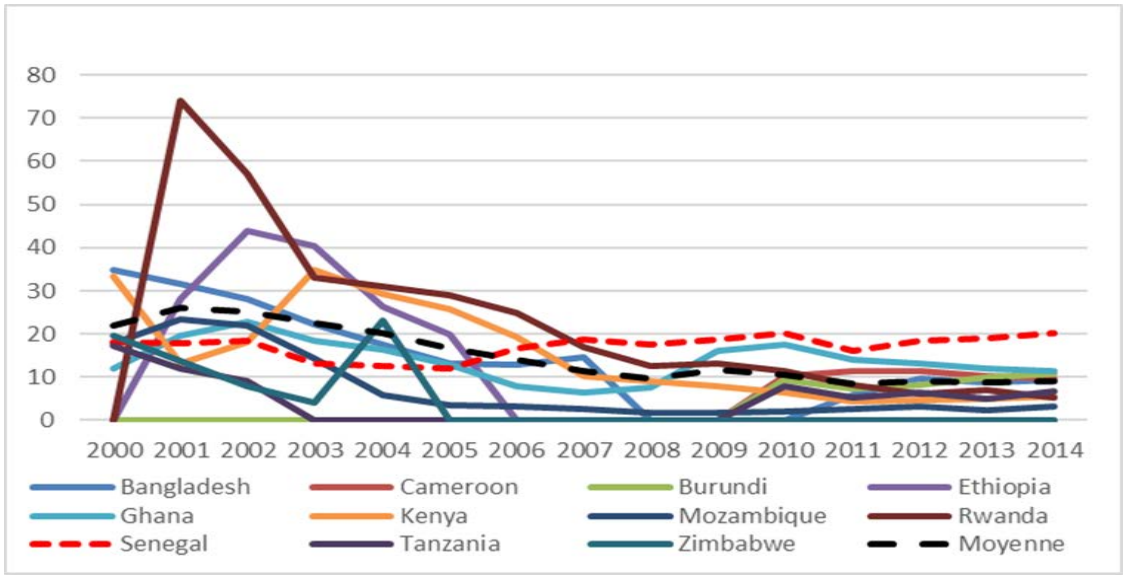
Figure 7- 6: Deterioration rate of the client portfolio



Source: Source: BCEAO, Banking Commission Report

Bad loans have a stable trajectory and are around 20% of total loans in Senegal. In comparison with the countries in the sample, Senegal's outstanding credit ratio is above all comparator countries. This indicates a certain difficulty for banks to recover loans and an inefficiency of the banking system.

Figure 7- 7: Non-Performing Loans to Total Loans (%)



Source: WDI, Authors' Calculation

Senegal's banking sector was composed of twenty-five (25) credit institutions in 2015, including twenty-two (22) banks and three (3) banking financial institutions. In 2014, the number of credit

institutions registered and approved in Senegal was twenty (20). [114] This places Senegal in second place in the Union in terms of market share, concentrating 19.5% of the total credit institutions behind Côte d'Ivoire with 28.1%. The following table shows the situation of the banks in the WAEMU zone.

Table 7- 4: Distribution of Credit Institutions across WAEMU countries

	Credit Institutions in 2016
Benin	15
Burkina Faso	17
Cote d'Ivoire	27
Guinea-Bissau	04
Mali	17
Niger	12
Senegal	**25**
Togo	16
WAEMU	133

Source : Banque Centrale des Etats de l'Afrique de l'Ouest, 2016

Volume of Lending

Senegal has a diversified banking system, with sixteen (16) general banks and four commercial banks specialized in agriculture, housing, markets and microfinance. In addition, the breakdown shows that the banking system is divided into nine (9) [115] large banks, four (4) medium-sized banks and nine (9) small banks. In the Union, there is a high concentration of market shares (78.3%) at the level of large banks, which can compromise the proper functioning of competition.

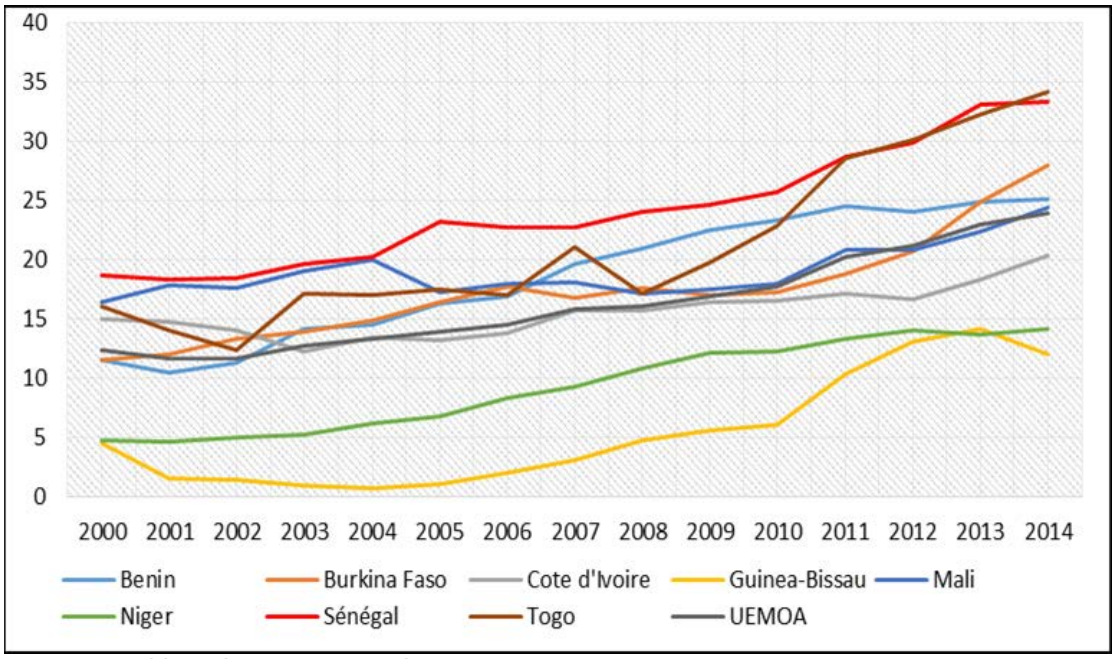
Moreover, the volume of lending is an indicator of financial development. The expansion of private sector lending will stimulate investment and ultimately economic growth. In 2014, the volume of bank loans granted to the private sector in Côte d'Ivoire and Senegal corresponds respectively to 3378.7 billion CFA francs and 2573.4 billion CFA francs. These two countries account for 31.46% and 23.96% of total credit (55.42%) to the economy in the Union.

In the WAEMU zone, Senegal stands out as the country whose banking system finances the private sector the most and is followed by Togo (see figure below).

[114] Banking Commission's Annual Report (2014)

[115] Large bank: total balance sheet> 200 billion CFA francs
Bank medium size 100 billion CFA francs <total balance sheet <200 billion CFA francs
Small-scale bank balance sheet total <100 billion CFA francs

Figure 7- 8: Trends in domestic credit to the private sector as a percentage of GDP



Source: World Bank, WDI, December 2014

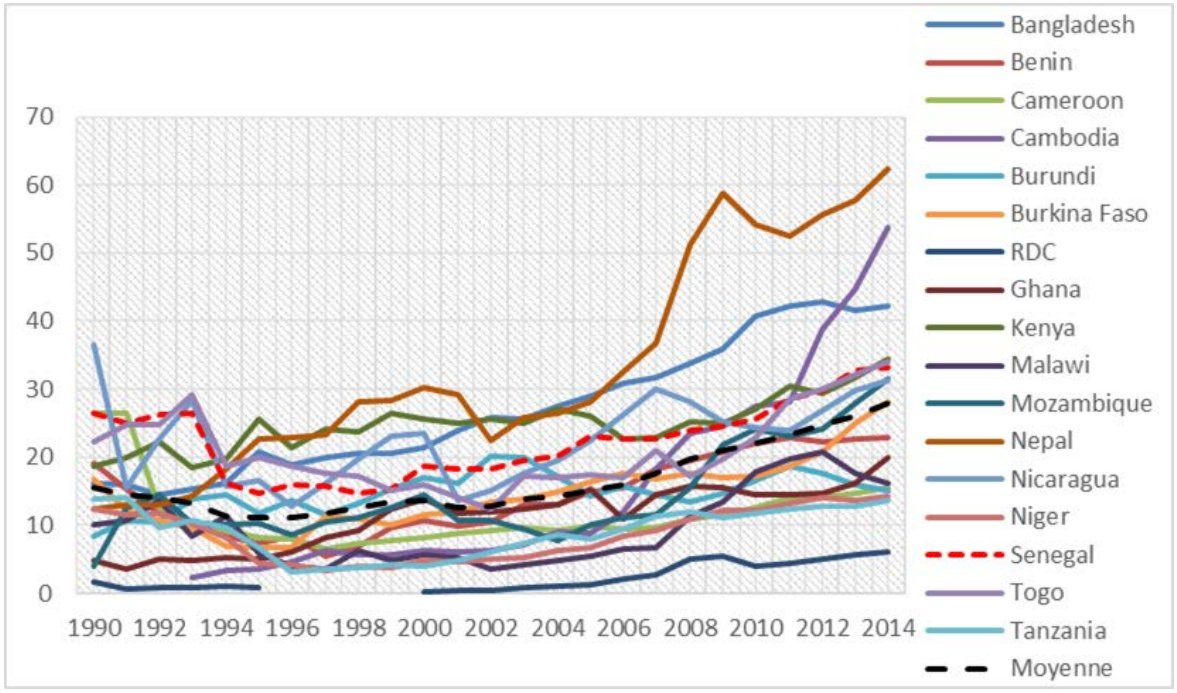
Senegal ranks first in bank approved credits which amounted to 151,721 units with an approval rate of 25.01% of the total lending in the Union. Côte d'Ivoire arrives second with 120 618 approved bank loans, representing a rate of 19.88% of the total lending in the zone.

Senegal's private sector credit to the private sector increased from 18.76% in 2000 to 33.17% in 2014. Currently, the penetration rate of bank loans to the private sector of Senegal and Togo (33.71% in 2014) are the highest in the Union. However, the financing of the economy in these two countries is not comparable because the volume of credit granted by the Senegalese banking system is five times that of Togo. But it should be emphasized that this level of credit to the economy remains low compared to those of emerging economies.

It should also be noted that this increase in loans to the economy was accompanied by deterioration in the customer portfolio of Senegalese banks. The gross degradation rate of the customer portfolio increased from 17.4% in 2013 to 18.4% in 2014, an increase of 100 basis points. This rate exceeds the EU average of 15.6% in 2013 and 13.8% in 2014. The net rate of deterioration in the customer portfolio also increased from 9.2 % in 20i13 to 9.4% in 2014 against a Union average of 6.7% in 2013 and 6.1% in 2014. However, despite the slight increase, the level of the net deterioration rate attests that the banking system can absorb its outstanding debts.

Analysis of the graph below shows that Senegal is above the average sample metric. However, Senegal (33%) is still far behind countries such as Nepal, Cambodia and Bangladesh where the private sector's credit ratios to GDP in 2014 are 62.3%, 53.8% and 42.1%, respectively.

Figure 7- 9: Trends in credit disbursed by banks to the private sector among comparators



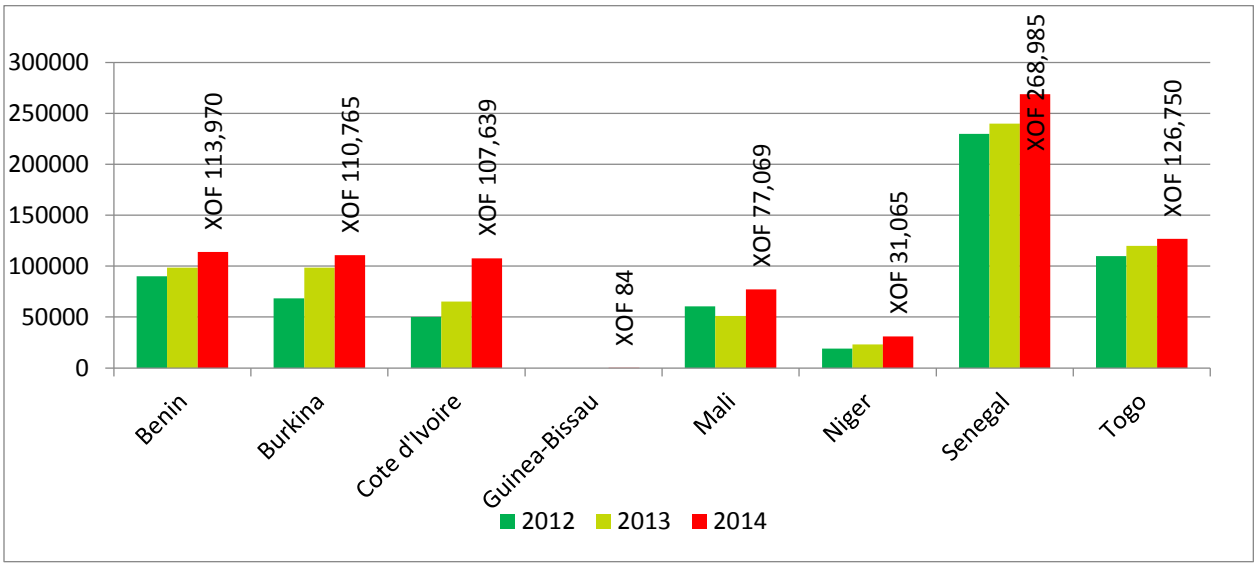
Source: WDI, Authors' calculation 2014

There has been a remarkable increase in loans to the private sector in Senegal, amounting to about 33% of GDP. Despite this top ranking in WAEMU, Senegal remains below countries like Bangladesh, Cambodia and Nepal.

Microfinance

The microfinance sector in Senegal had 383 decentralized financial services (DFS) in 2014 serving 2.23 million members and clients. This included CFAF 268.98 billion of outstanding loans and a savings stock of CFAF 225 billion. The sector's contribution to domestic credit is 9.16% of GDP. However, its contribution to the financing of the economy was only 3.22% in the same year; which amounts to 0.40% of GDP. This brings the microfinance penetration rate to 16.2% of the total population and the financing rate of the economy to 3% of GDP.

Figure 7- 10: Comparison of the volume of microfinance in the WAEMU

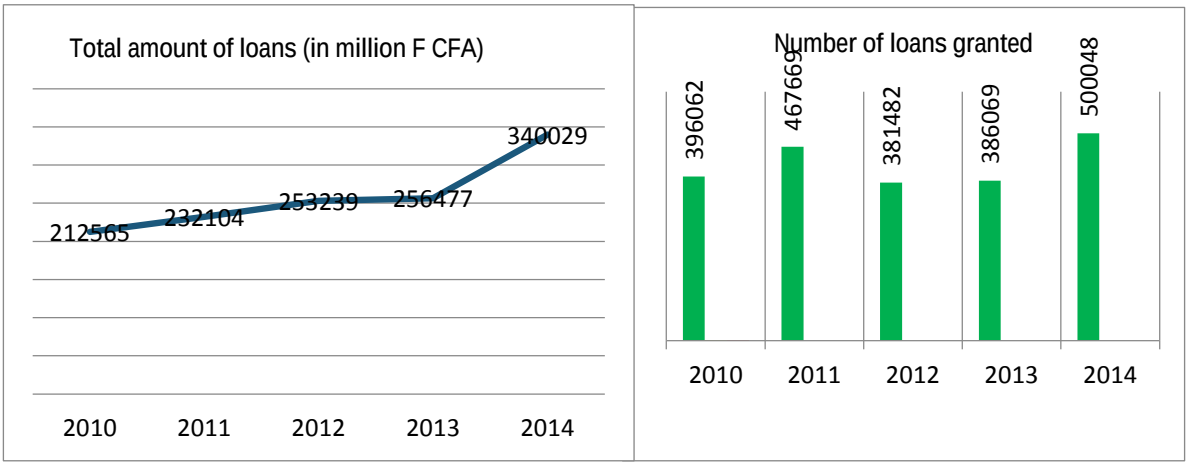


Source: BCEAO

Over the period 2010-2014, the sector disbursed CFAF 1294 billion, corresponding to 2,132,329 loans. At the end of 2014, the number of loans granted was 500,048, compared to 386,069 in 2013, an increase of 30%, coinciding with the 27% to 24% decline in the rate of wear, which is still high.

The level of DFS activities in Senegal is well above the other WAEMU countries. By way of illustration, at the end of 2014, outstanding loans to Senegal, representing 32% of the total WAEMU, amounted to CFAF 268.98 billion, compared to an average level of CFAF 104.541 billion at the Union level.

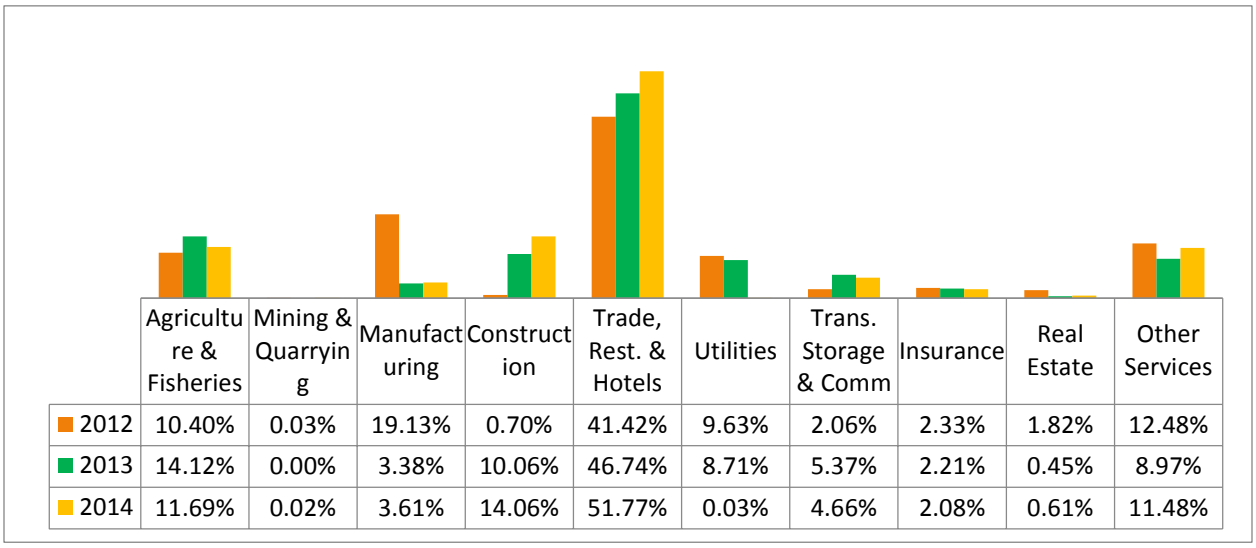
Figure 7- 11: Total cost of loans granted (in million CFA francs) and Total number of loans granted



Source: BCEAO

The sector analysis of loans granted by the decentralized financial systems (DFS) in 2014 shows that trade, restaurants and hotels account for 52% of loans granted compared to 47% in 2013.

Figure 7- 12: Share of Commercial Loans by Economic Sector, 2012 – 2014

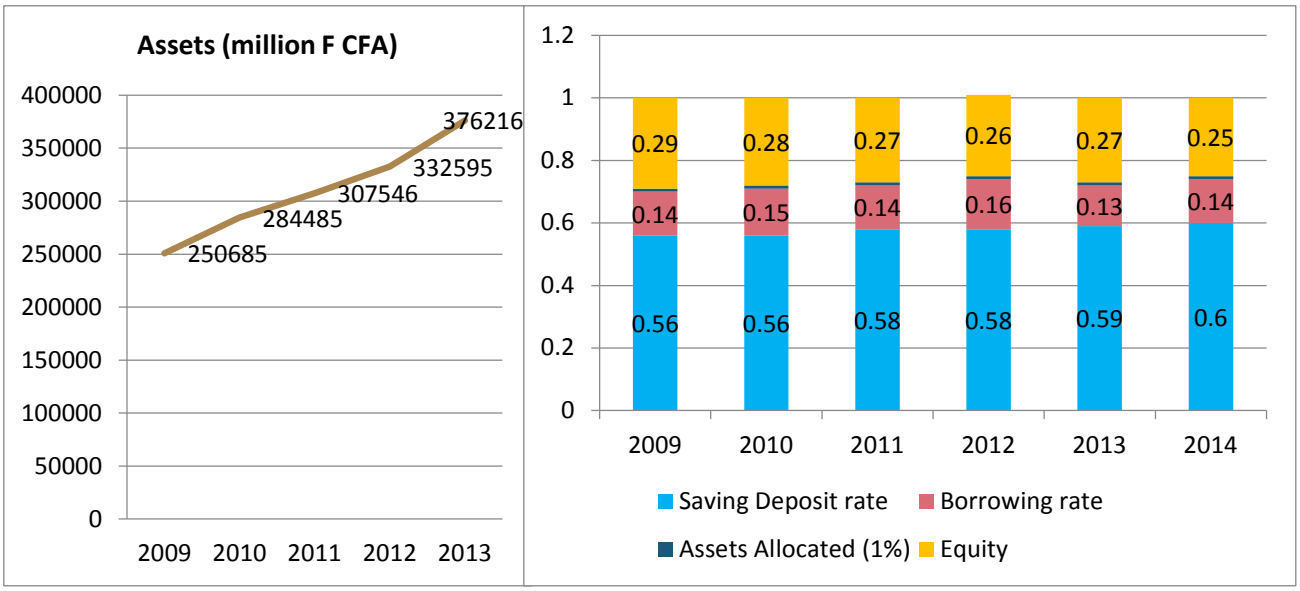


	Agriculture & Fisheries	Mining & Quarrying	Manufacturing	Construction	Trade, Rest. & Hotels	Utilities	Trans. Storage & Comm	Insurance	Real Estate	Other Services
2012	10.40%	0.03%	19.13%	0.70%	41.42%	9.63%	2.06%	2.33%	1.82%	12.48%
2013	14.12%	0.00%	3.38%	10.06%	46.74%	8.71%	5.37%	2.21%	0.45%	8.97%
2014	11.69%	0.02%	3.61%	14.06%	51.77%	0.03%	4.66%	2.08%	0.61%	11.48%

Source: BCEAO

The resources of the DFS have increased by 13% in 2013/2014, from CFAF 332.595 billion to CFAF 376.216 billion. Deposits are mostly at 60%. Equity and borrowings represent 25% and 14%, respectively.

Figure 7- 13: Composition of DFS assets by type of deposits

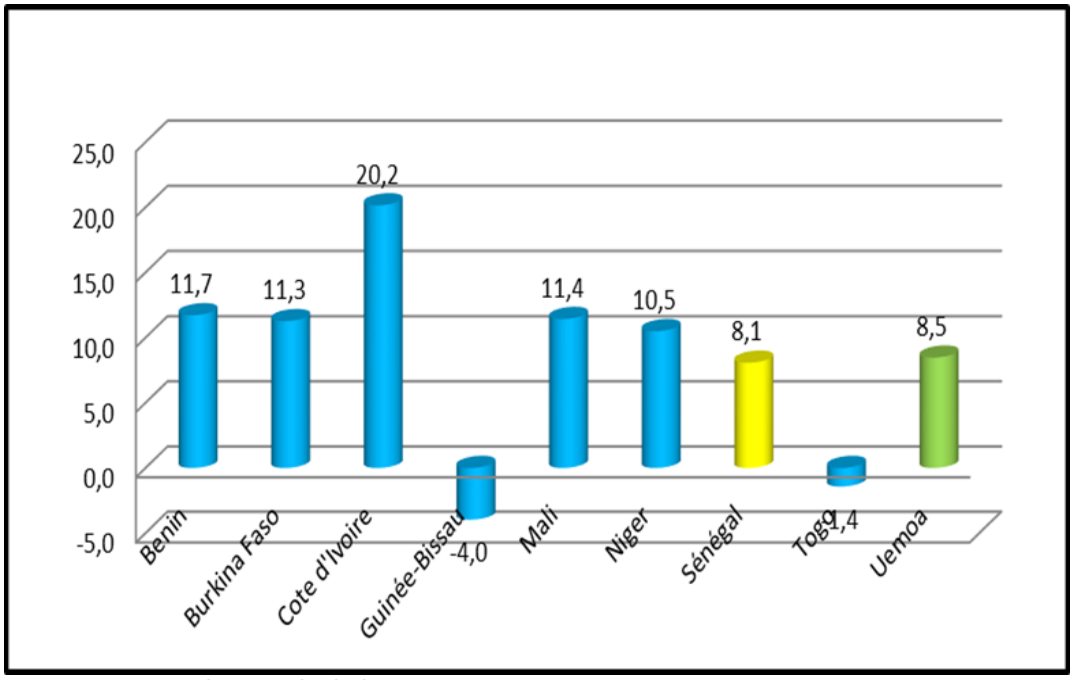


Source: BCEAO

Access to Domestic Savings

Domestic savings could be a barrier to private investment if its level is low relative to the demand for financing and limited access to external financing. Senegal had a low domestic saving rate (8.1% of GDP) over the period 2000-2014, exceeding only Togo at the WAEMU level (-1.4% of GDP) and Guinea-Bissau (-4% of GDP) and remains far behind Côte d'Ivoire (20.2%). This implies a weakness of the long resources available to finance the investments. This also implies that the country has shown relative dependence on international financial inflows--Official Development Assistance (ODA) and FDI-- which partly explain the low performance in domestic savings.

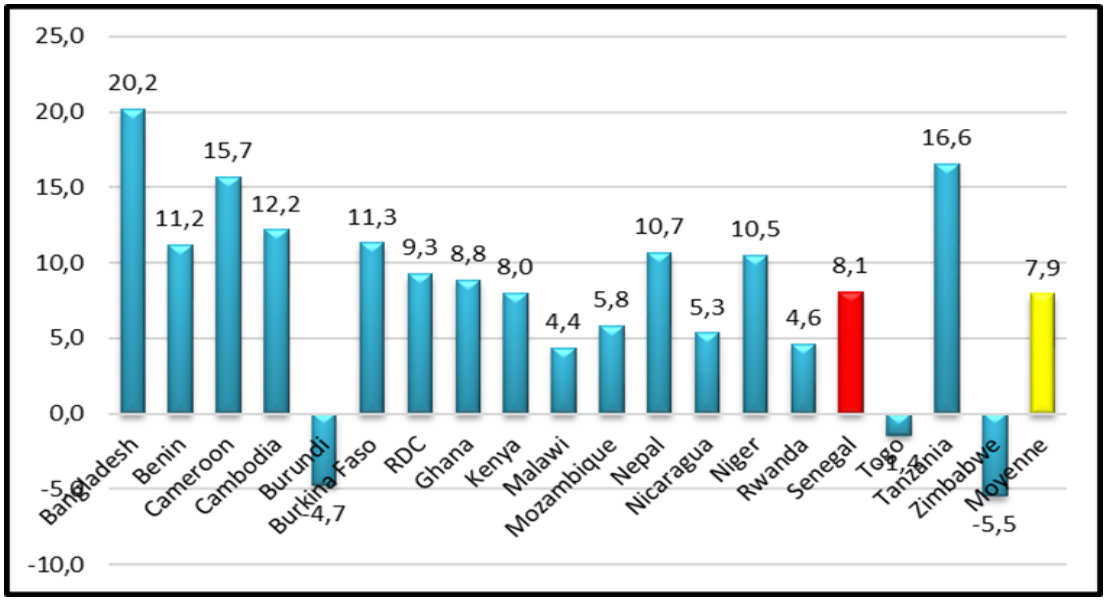
Figure 7- 14: Trends in credit granted by banks to the private sector among comparators



Source: WDI, Authors' calculation

The weakness of Senegal's domestic savings is confirmed by data from comparator countries. Senegal has the average saving rate of the average metric (7.9% of GDP); behind Bangladesh (20.2%), Tanzania (16.6%) and Cameroon (15.7%).

Figure 7- 15: Gross Domestic Savings as % of GDP (2000-2014)



Source: WDI, Authors' calculation

Senegal's low domestic saving rate could be explained, among other things, by the low disposable income and the high level of consumption. Moreover, the weakness of banking intermediation culture contributes to insufficient savings.

Access to International Financing

External financing plays a central role in the resources of developing countries, which suffer from insufficient domestic savings to meet their investment needs. On the one hand it is obtained from international economic and financial cooperation (multilateral and bilateral) for concessional and semi-concessional loans and, on the other hand, from the international financial market for commercial loans.

These highly concessional resources of multilateral origin (World Bank, African Development Fund, etc.) remain quasi-stable and dominate the external debt portfolio with 63.70% of the current debt portfolio. Similarly, semi-concessional resources are characterized by the importance of offers coming from various sources to finance certain development projects and programs. At this level, and in the context of the PSE, an increase in semi-concessional funding sources is expected.

The financing of these investments, initiated by the Senegalese government, will depend on its ability to mobilize resources at the international level. This ability to mobilize resources is partly affected by the assessment of the financial rating, granted by a competent agency, of the risk of financial solvency.

The appreciation gives rise to a rating corresponding to the prospects of repayment of its liabilities to its creditors (holders of bonds, financial institutions etc.). The rating is made over the long term (10 years or more) or the medium term (more than one year). The short-term rating judges the

capacity of the debtor to fulfill its commitments within one year. The long-term rating estimates the debtor's ability to fulfill its obligations in more than one year.

Senegal's sovereign debt was rated by Standard & Poor's rating agency (2016). This score was confirmed at B+ and B for the long term and the short term, respectively. Scorecards on Senegal are drawn by its institutions, which the rating agency Standard & Poor's (2016) finds stronger than the average in the region and for its level of economic development. This solvency is also supported by forecasts of sustained strong economic growth prospect for 2016-2019, stimulated by the government's program of reforms and investments (Senegal Emerging Plan, PSE). However, the scorecards continue to be constrained by Senegal's low per capita income levels; and its membership of the West African Economic and Monetary Union (WAEMU) limits monetary flexibility.

Private flows, public flows and migrant flows could be sources of development finance through their allocation in the productive sectors. Private flows consist mainly of foreign direct investment (FDI), inflows and outflows of capital and dividends or project financing), even if, on the other hand, those related to bank loans (disbursements and repayments in principal and interest), borrowings on the markets are also used. Public flows mainly involve financing on market terms and aid.

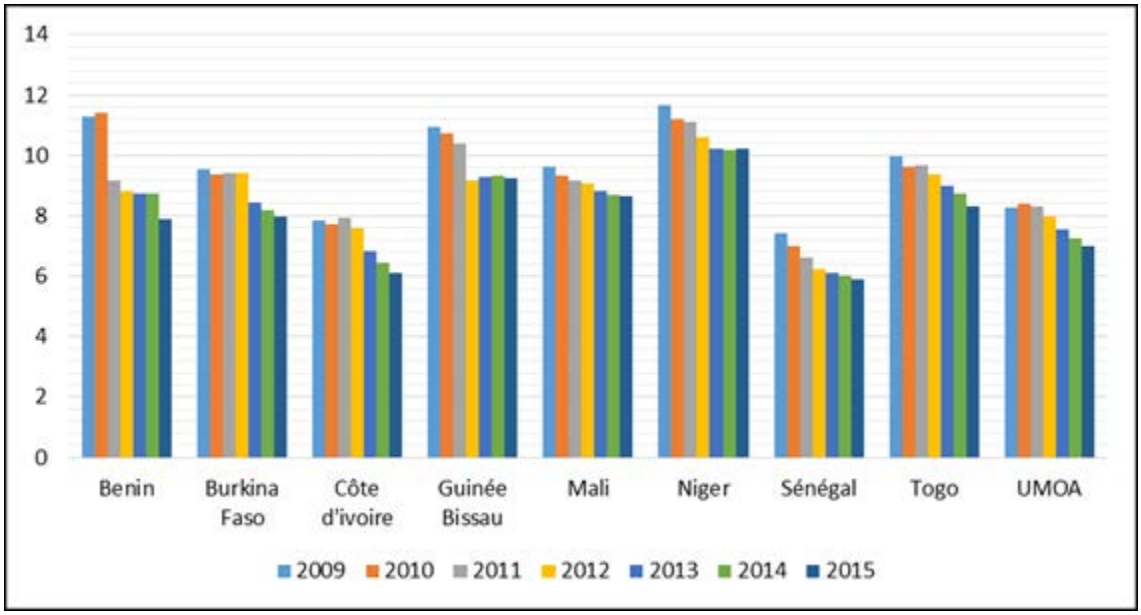
In the following sections, we analyze if the high cost of financing represents a constraint to growth in Senegal. If access to finance is a constraint, it is expected that:

i. the interest rate is high compared to the comparator countries;
ii. a negative correlation between interest rates and private investment, or vice versa, and
iii. agents then seek to circumvent these constraints

The interest rate is the price to pay for borrowing money and is an important variable in decision-making in terms of investment for businesses and consumption for households. With this test 1, the objective is to answer the question of whether interest rates in Senegal are very high compared to comparator countries. This is done by comparing Senegal with the WAEMU countries and then with the countries in the sample to determine whether interest rates are high in relation to its level of development.

Within the WAEMU countries, lending rates have had a downward trend since 2009. This decline is mainly due to the easing of the key rate of the BCEAO, which dropped from 4.25% to 3.5 % between 2009 and 2015. The magnitude of this decline, however, varies from one country to another. Senegal is the country with the most competitive lending rates in the union. This is because the volume of loans disbursed is high. In 2015, the borrowing rate in Senegal was 5.89% against an average rate of 7% in the zone; Côte d'Ivoire comes second. In comparison with WAEMU countries, interest rates in Senegal do not appear abnormally high. In addition, lending rates for private enterprises in the productive sector are even lower in Senegal and stand at 5.08% in 2015. Although the interest rates in Senegal are the most competitive among the WAEMU countries, the freedom of bank conditions means that there is a disparity in the rates actually applied to economic agents. Indeed, the lending rate is fixed by mutual agreement with the parties, provided that it does not exceed all costs, commissions and other remuneration of any kind, the legal rate of attrition set at 15% since 2013.

Figure 7- 16: Lending interest rate in WAMU countries (%)

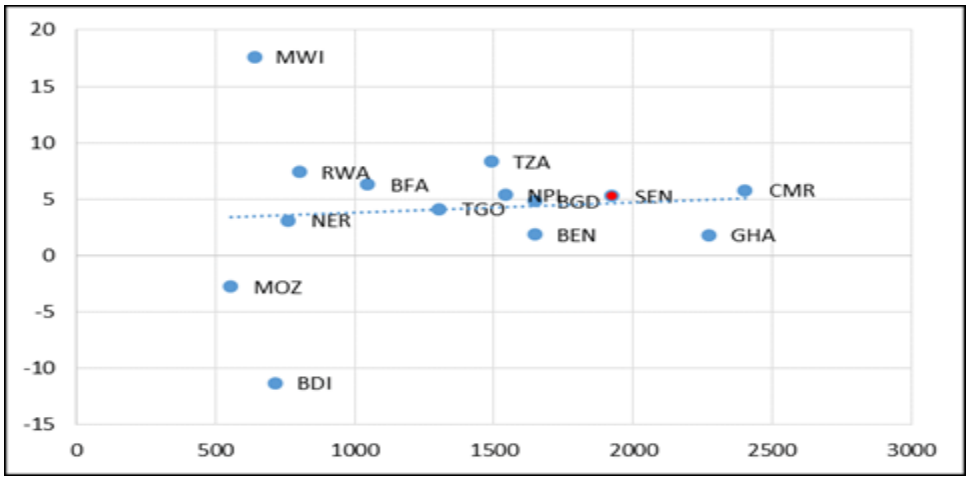


Source: BCEAO, Report on banking conditions in WAEMU, (2015)

In the absence of a long series of data on outstanding interest rates in Senegal with comparator countries, the actual discount rate is used in this test. It is accepted that the handling of this rate by the central bank is reflected in the lending rates of the secondary banks.

In fact, in 2000 Senegal had a real interest rate on the equilibrium line. Thus, given its level of economic development, Senegal had an advantage over comparator countries. This real interest rate was 5.26% (see figures below). This reflects that Senegal's interest rates are more competitive than those of some comparator countries.

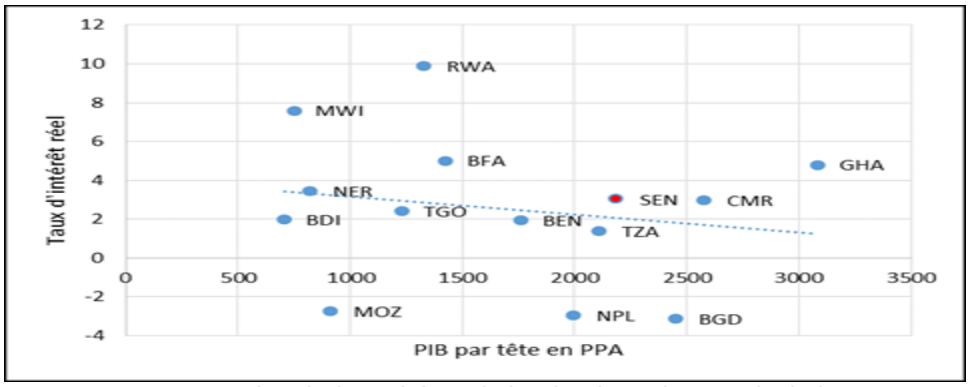
Figure 7- 17: Correlation of interest rates and growth per capita GDP in PPP (2000)



Source: WDI, International Financial Statistics (IFS), Authors' calculation

In 2010, the real interest rate declined to 3% (see figure below); which in principle should boost economic activity. The stylized facts show that the cost of capital in Senegal is relatively lower compared to the comparator countries.

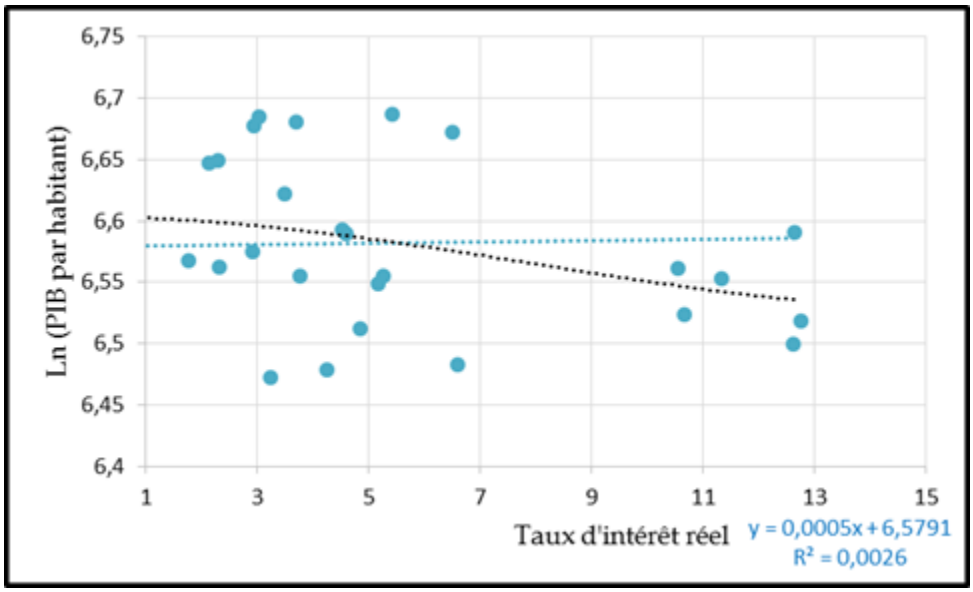
Figure 7- 18: Correlation of real interest rate and per capita GDP in PPP (2010)



Source: WDI, International Financial Statistics (IFS). Authors' calculation

On the empirical level, there is an absence of a linear relationship between GDP per capita and the real interest rate over the period 1980-2014. The econometric tests of the first-difference variables over the period 1980-2014 confirm this lack of a linear relationship between the real interest rate and the per capita GDP. Thus, the decline in the economic interest rate in Senegal does not have the economic stimulus effects. This could be explained by the fact that it does not affect the real sector via investment.

Figure 7- 19: Correlation of real interest rate and per capita GDP in PPP (1980-2014)



Source: WDI, IFS, Authors' calculation

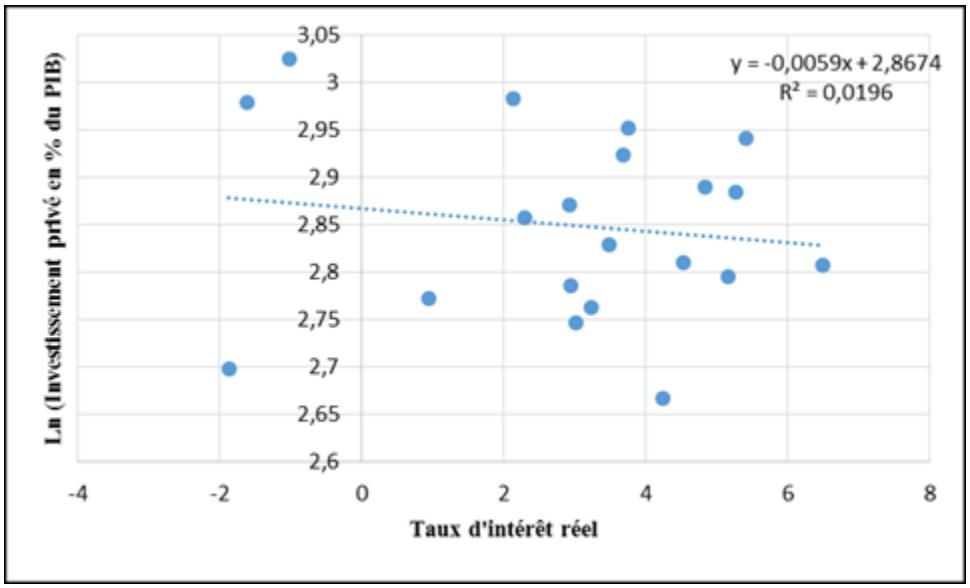
If investment is constrained by supply constraints in times of supply of financing exceeding the demand for financing, interest rates should be lowered and private investment increased. In the event that the supply of financing falls in relation to the demand for financing, then the opposite

effect would be expected. On the graph, a surplus of supply versus demand is described by a decreasing correlation between the interest rate and private investment. In this case, this would mean that the supply of financing could be a determining factor for growth and - after confirmation by testing - a major constraint on growth.

In fact, the chart below shows that there is a negative relationship between the real interest rate and private investment, thus confirming that the displacement takes place along the demand curve following a shock on the financing offer. The econometric tests confirm the negative relation between the two variables in first difference. Thus, investment reacts to a change in interest rates in Senegal.

Test 2 also analyzes whether there is causality between bank loans granted to the private sector and GDP per capita. This test is based on the existence of a positive link between credit and economic growth. However, from an empirical point of view, the link between credit development and growth remains mixed. These results can be explained by the increase in consumer loans in the total volume of credit allocated to the private sector (Beck et al., 2009). Consequently, the financial instability associated with financial development cancels out the positive impact of credit on growth (Guillaumont and Kpodar, 2004). Such results suggest that the results of this test should be taken with caution.

Figure 7- 20: Correlation of private investment and real interest rate (1995 - 2014)



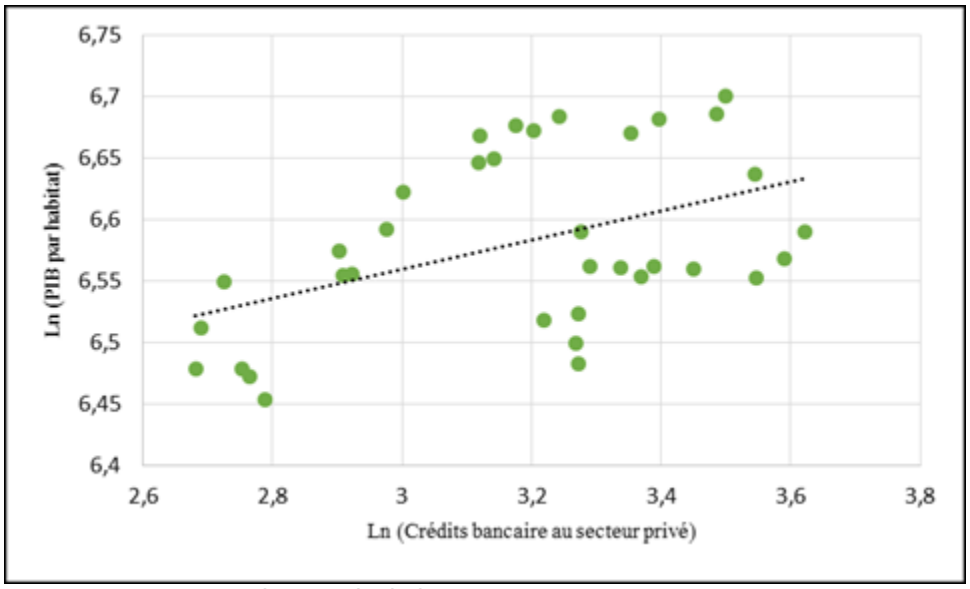
Source: WDI, IFS, Authors' calculation

The simple analysis of the graph below shows a positive correlation between credit provided to the private sector and GDP per capita. The causality test shows Granger causality from GDP per capita to credit to the private sector. This suggests that GDP per capita would explain credit to the private sector. Starting from this, the econometric regression in first difference of credit to the private sector in relation to the delayed GDP per head gives a positive and significant coefficient.

Such a result would indicate that the performance of firms in a given year pushes them to request more credit the following year in order to finance their activities. However, this should be taken with caution as this is not always the case, as companies can use self-financing to finance their investments.

The negative correlation between investment and real interest rates would explain that the cost of financing could be a constraint on business financing. The assumption of a constraint on private investment could not be rejected.

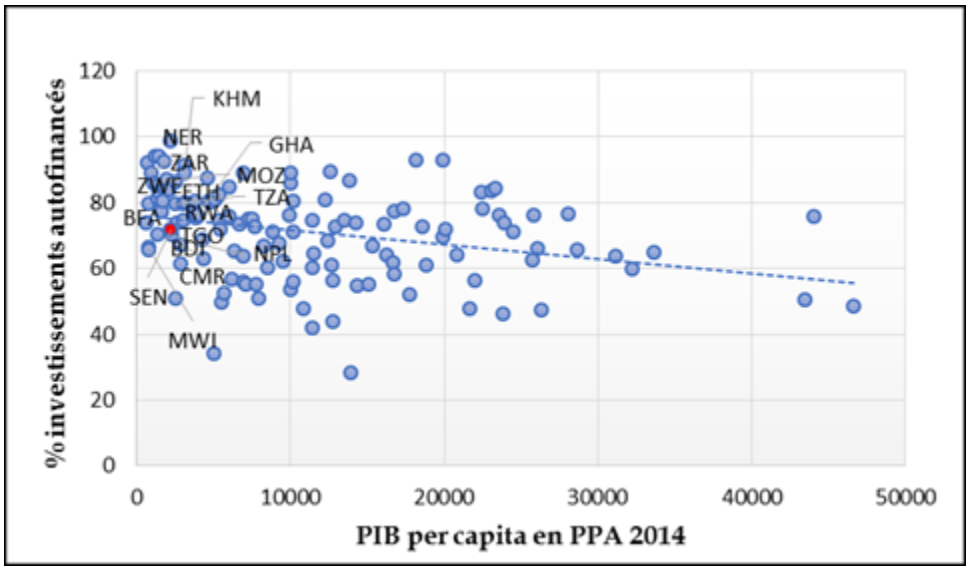
Figure 7- 21: Correlation of GDP per capita and credit to the private sector (1980 - 2014)



Source: WDI, IFS, Authors' calculation

The objective of this test is to see whether firms tend to resort to self-financing in the event that access to finance is a constraint. Corporate circumvention should be manifested by an increase in the use of self-financing for investment. The graph below shows that the proportion of self-financed enterprise investment in Senegal is 71.9% in 2014. This proportion places Senegal below the standard of middle-income countries and exceeds a large proportion of the comparator countries. Thus, companies in Senegal seem to use more of their own resources to finance their investment.

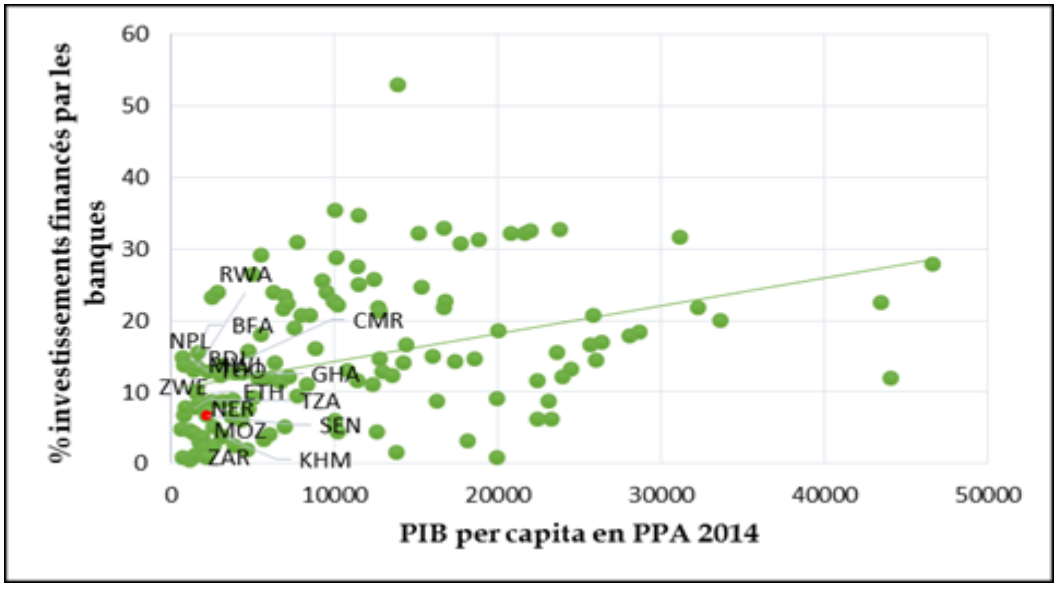
Figure 7- 22: Share of self-financed investments



Source: WDI, Enterprise Surveys, 2015 and Authors' calculation

This may explain, in part, the low level of bank lending in the financing of business investment. Indeed, the share of investments financed by banks in Senegal is 6.6% against 11.9% in the middle-income countries; thus exceeding only Cambodia, the Democratic Republic of the Congo and Mozambique. Senegal is below the standard described by the regression line.

Figure 7- 23: Share of investments financed by banks



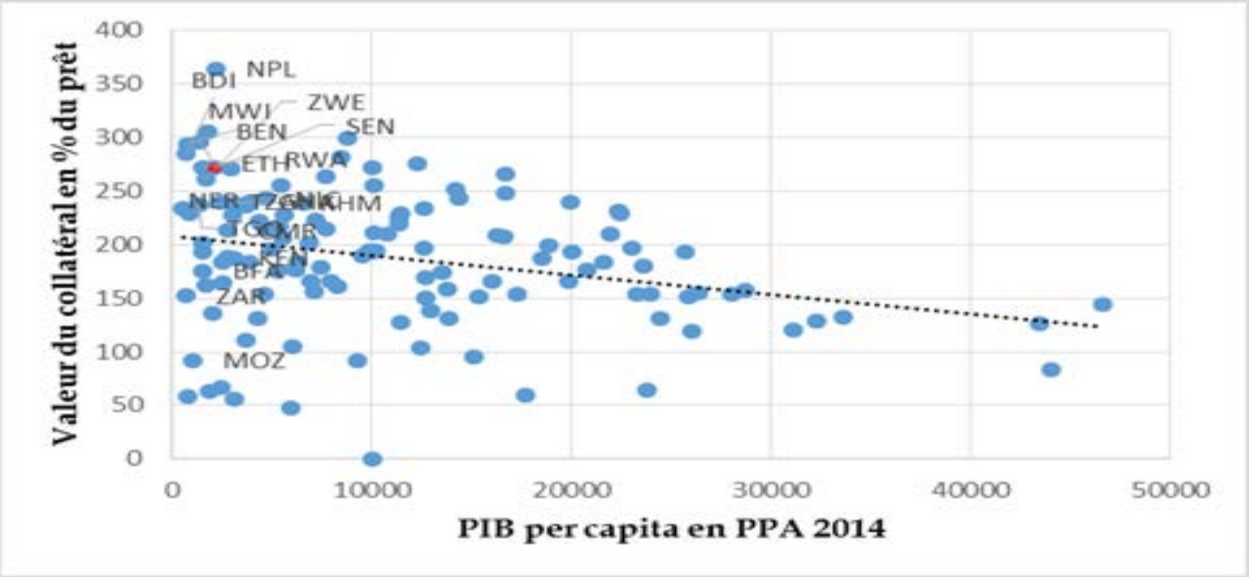
Source: WDI, Enterprise Surveys, 2015 and Authors' calculation

Weak investment by bank-financed firms reflects either non-bankable projects or difficult access to financing. The number of requests for loans from companies rejected gives an idea of the quality of the projects subject to bank financing. Only 2.6% of companies saw their loan

applications rejected in Senegal. This proportion is low compared to comparator countries with an average of 11% (business survey). However, such a situation does not really allow us to know whether the proposed projects are indeed bankable or not. Indeed, this may well hide the fact that companies do not make loans because the requirements are binding.

As far as access to finance is concerned, the terms of loans with respect to guarantees represent a constraint on companies. The graph below shows that the value of collateral required by banks is very high in Senegal. Indeed, a guarantee whose value represents 271.7% of the amount of the loan is required in Senegal by the banks as against 211.1% in the middle-income countries. The graph below shows that Senegal is well above the regression line. The value of the collateral is a constraint limiting access to bank financing.

Figure 7- 24: Value of collateral for loan in % of GDP per capita in PPP



Source: WDI, Enterprise Surveys, 2015 and Authors' calculation

The use of own resources is the means used by companies to finance their investment instead of banks. The collateral required for a loan is very high in Senegal compared to the comparator countries. Such a situation represents a real obstacle for businesses, particularly SMEs.

In summary, it is found that Senegal's lending interest rates are more competitive than those of the WAEMU countries and those of some comparator countries. Despite the fact that interest rates are more competitive, Senegalese companies use their own funds to finance their investments. Thus the interest rate alone could not be the real obstacle to financing. Access to finance is mentioned as the major obstacle for companies in Senegal. The analysis of lending conditions in this case the guarantee required by the banks reveals that the value of collateral is very high in Senegal compared to the countries in the sample. This is a major challenge for SMEs, which represent the vast majority of Senegalese companies.

CHAPTER 8: KNOWLEDGE AND SKILLS: DOES A SHORTAGE OF HUMAN CAPITAL REPRESENT A BINDING CONSTRAINT TO GROWTH?

8.1 SUMMARY ANALYSIS

In the context of growth diagnostics, a shortage of human capital can pose a binding constraint to growth if private investors cannot secure the skilled labor they need to effectively manage and operate their businesses at a competitive cost. Although many countries may reasonably aim for a more highly skilled workforce as part of their development plans, a lack of human capital only poses a binding constraint to growth if the demand for skills substantially exceeds supply, so that the costs of obtaining the needed skills are high. In the case of Senegal, the empirical evidence shows that there is no shortage of skilled labor. Rather, at present, the demand for skilled labor falls significantly short of the available supply. The most compelling evidence for this conclusion comes from the high rates of youth unemployment that affect essentially all types of university degrees. It is reinforced by the relatively high levels of emigration of tertiary-educated workers from Senegal.

Overall, there is substantial evidence that both the quality and quantity of skills in Senegal is low. However, other indicators suggest Senegal's low level is adequate for current economic production, and that the returns on skills accumulation is relatively low in the private sector, particularly for the informal sector. Over the course of our consultations, several concerns were raised about the constraints posed by the lack of adequate skilled manpower. However, we show that the returns to education in Senegal remain relatively low and we conclude that human capital is not a binding constraint in Senegal.

8.2 BACKGROUND AND BENCHMARKING

Note: Health is a key element in capturing human capital. Health as a human capital-level constraint is discussed in **Chapter 14.**

Education

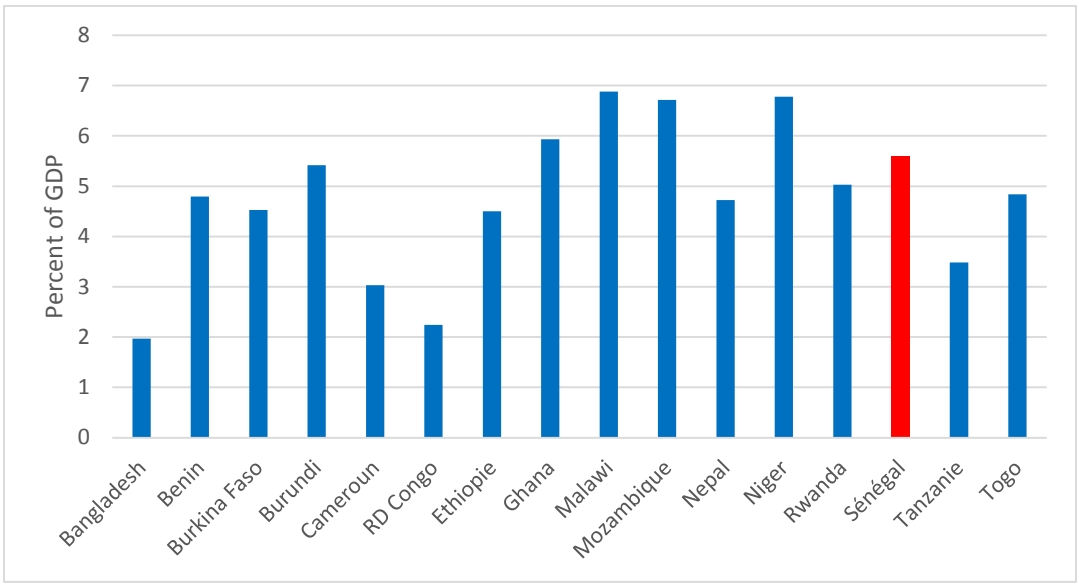
Education is one of the most important components of human capital because a better-educated workforce is more productive and allows for an inclusive and sustainable growth process. This is why the GOS policy on education and training is part of the implementation of the *Programme d'Amélioration de la Qualité, de l'Équité et de la Transparence du secteur de l'Éducation et de la Formation (PAQUET-EF)*, taking over the reform of higher education and the recommendations of the national conferences on the sector. Education and human capital are also pillars of the PSE.

To support the implementation of the PAQUET-EF program, Senegal has made an important tax effort for its education system. Senegal is committed to achieve the Millennium Development Goals, the Education for All goals, and consequently Sustainable Development Goals and has effectively translated these objectives into budgetary priority for the elementary cycle in internal trade-offs of the education sector. This budgetary effort is realized by allocating 5.6% of the GDP to education (see Figure 8-1) in 2010, an increase of 77% between 2000 and 2010.

Initial benchmarking indicates a potential problem in terms of education and skills, but the tests do not reveal strong evidence of a constraint. Average years of schooling in the working population are significantly lower than all comparators at 2.8 years. This low level of average

school is driven by the fact that large portions of the population receive no schooling at all – or at least not any that is tracked by formal statistics – and the large differences in secondary enrollment rates between Senegal and comparators. Sixty-six percent of the Senegalese population over age 25 has no education. The World Economic Forum (WEF) ranks Senegal 121/130 and 129/130 in terms of human capital development for age cohorts 15-24, and 25-54, respectively, as measured by enrollment rates and years of schooling. Though younger cohorts have more years of schooling in Senegal than older cohorts, older cohorts rank higher due to recent expansions of schooling in other countries.

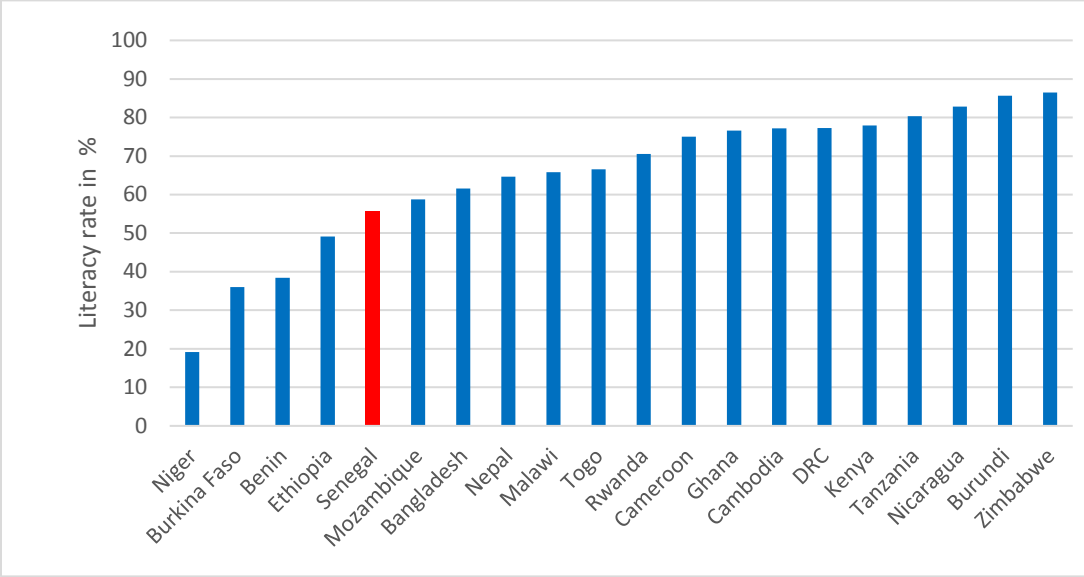
Figure 8- 1: Education expenditure as a % of Per Capita GDP Senegal and comparator countries in 2010



Source: Education Statistics, World Bank, 2013

In terms of adult literacy (population aged 15 and over), significant progress has been made in the last decade. Indeed, in 2006 alone 41.9% of adults were literate compared to 55.6% in 2015, an increase of 32%. However, in spite of these considerable efforts in terms of funding and literacy, it should be noted that Senegal's performance in this area is still weak compared to comparator countries, which for the most part (14/20) have already achieved more than 60% adult literacy.

Figure 8- 2: Literacy rates in Senegal and comparator countries, by 2015



Source: Education Statistics, World Bank

An analysis of the structure of the literacy rate disaggregated by age, sex and place of residence makes it possible to establish the existence of disparity in this indicator. It should be noted that the literacy rate is higher among the younger age groups of 10-14 years and 15-19 years, with 58.1% and 61.1% respectively. More than 4 out of 5 people are illiterate. [116] The other major characteristic of this indicator is that the vast majority of illiterates are women (59.0%) and rural (62.7%).[117] Thus, with a gender parity index (GPI) estimated at 64.02% in 2015, the gender gap in literacy is still more pronounced in Senegal than in the majority of comparator countries. Three countries of reference, namely Niger, Benin and Mozambique, with a GPI of 40.4%, 54.7% and 61.9%, respectively recorded performances below Senegal.

[116] Final Report of the RGPHAE 2013
[117] Educational Statistics of the World Bank, updated version of 11/05/2016

Table 8- 1: Literacy level of the population aged 10+ and by gender

Group of Five-year old [1]	Male		Female		Gender Grouped	
	Not Literate	Literate	Not literate	Literate	Not literate	Literate
10-14	41,9	58,1	41,8	58,2	41,9	58,1
15-19	35,2	64,8	42,4	57,6	38,9	61,1
20-24	43,3	56,7	56,5	43,5	50,2	49,8
25-29	48,8	51,2	66,5	33,5	58,2	41,8
30-34	51,0	49,0	70,7	29,3	61,3	38,7
35-39	48,8	51,2	71,5	28,5	60,6	39,4
40-44	50,4	49,6	75,8	24,2	63,8	36,2
45-49	50,6	49,4	77,1	22,9	64,6	35,4
50-54	52,8	47,2	80,1	19,9	67,1	32,9
55-59	49,2	50,8	78,0	22,0	63,5	36,5
60-64	53,7	46,3	85,0	15,0	69,6	30,4
65-69	57,1	42,9	88,9	11,1	73,0	27,0
70 and + 5	68,3	31,7	95,4	4,6	82,9	17,1
Total	46,3	53,7	62,3	37,7	54,6	45,4

Source : ANSD. RGPHAE, 2013

[1] The age range of 70+ is obtained by averaging literacy rates for intervals 70-74, 75-79, 80-84, 85-89, 90-94 and 95+.

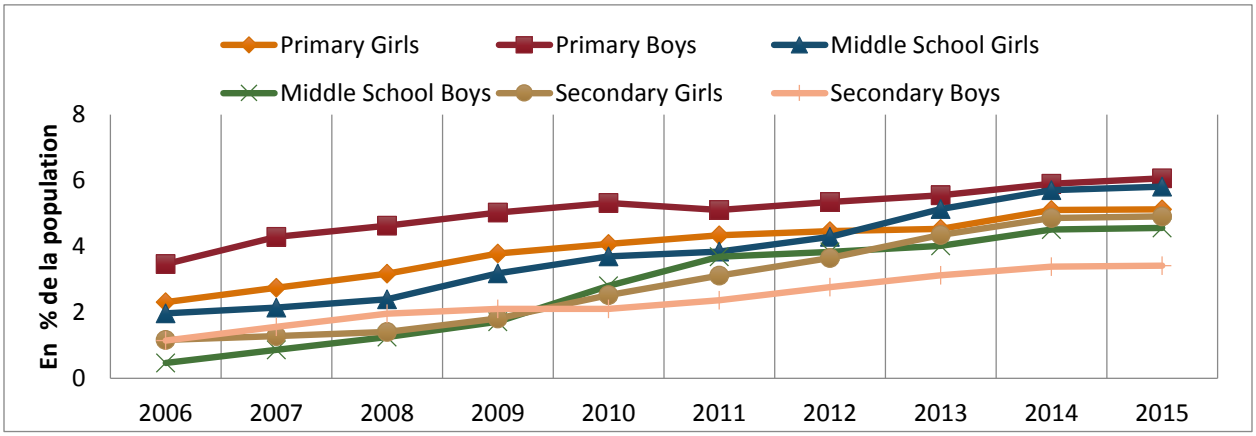
On the other hand, significant regional disparities are noted with the regions of Ziguinchor and Dakar (62.3% and 61.9 respectively), while the regions of Matam and Tamba record the lowest literacy rate (24.9% and 26.5% respectively). Other regions have more marked disparities, especially in terms of gender, with the rate of men being almost twice against women. These include Diourbel (40.3% vs. 21.4%) and Kédougou (42.6% vs. 23.8%).

Senegal has 2,852,983 students, consisting of 6.0% kindergarten, 53.3% primary, 24.6% middle school, 11.3% secondary and 4.8% tertiary (RGPHAE, 2013). The majority of this student population lives in urban areas, which concentrate 57.3%. The analysis of these trends in relation to the intensity of schooling measured by the gross enrollment ratio (GER) and the net enrollment ratio (NER) shows that these rates fall sharply as the level advances with increasing drop-outs. These indicators provide an overview of the degree of attendance of a given cycle, by comparing the numbers in that cycle and the target population for receiving dedicated instruction.

At the primary level, the gross enrollment ratio (GER) is 82.6% in 2014 against 93% in 2013, a decline of almost 10 percent. This high level of primary GER compared to other cycles reflects

the interest in this cycle, which is one of the MDGs' key objectives. Nevertheless, further efforts are needed to reach the target of universal primary education, i.e. 100%.

Figure 8- 3: Gross enrollment ratio by cycle and by gender



Sources: DPRE, national report on the state of education in 2013 and 2014

The average cycle has a school enrollment rate of 55%, a decrease of 3 percent compared to the situation in 2013. At the secondary level, this rate is set at 31%. From a gender perspective, it is noted that the enrollment gap remains in favor of girls in the primary and middle grades with a gender parity index of 1.16 and 1.11, respectively. However, the secondary cycle is still dominated by boys.

Table 8- 2: Gross enrollment ratio by region and sex in 2014

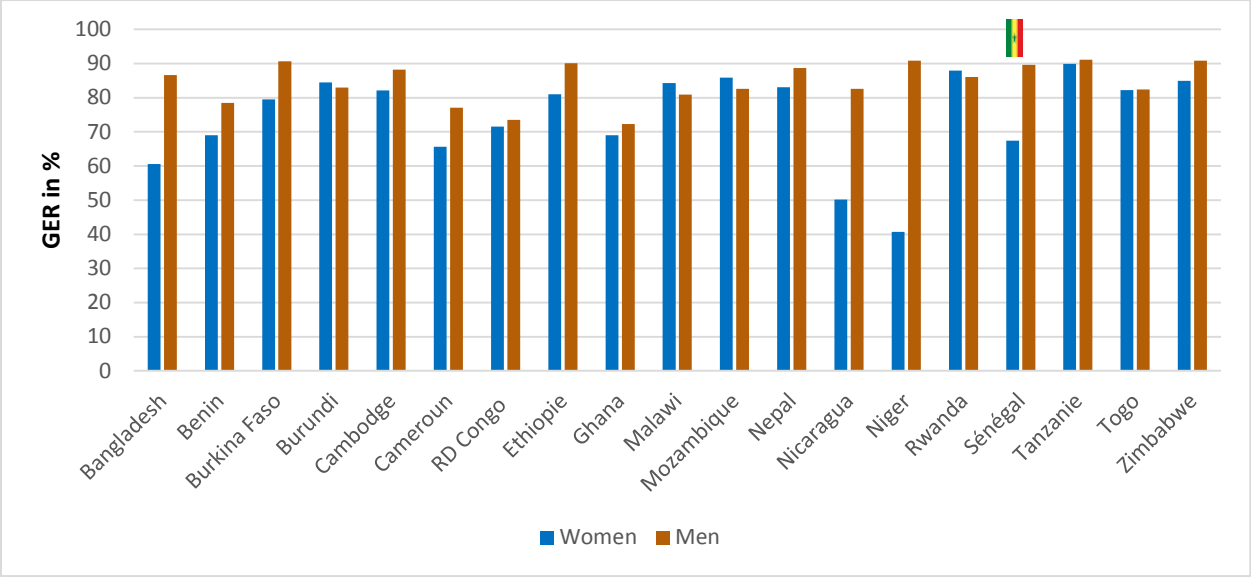
Regions	Primary Cycle		Middle Cycle		Secondary Cycle	
	GER	GPI	GER	GPI	GER	GPI
Dakar	100,6	1,07	73,6	1,09	40,3	0,96
Diourbel	52,7	1,32	26,6	1,19	14,3	0,79
Fatick	87,2	1,1	68,7	1,15	35	0,93
Kaffrine	47,5	1,33	23,3	1,02	12,5	0,69
Kaolack	78,7	1,21	57,1	1,11	33,5	0,73
Kédougou	110	0,94	56,7	0,70	19,2	0,43
Kolda	88,3	1,03	43,1	0,85	18,9	0,51
Louga	66,3	1,27	37,2	1,21	21,6	0,91
Matam	68,6	1,66	37,9	1,42	17,2	0,94
Sedhiou	99,8	1,03	61,4	0,80	31,8	0,51
St louis	83,2	1,31	60,8	1,25	33,4	0,96
Tamba	73,9	1,13	35,8	0,91	19,6	0,65
Thiès	94,6	1,14	66,2	1,10	39	0,93
Ziguinchor	116,1	1,01	94,5	1,03	66,7	0,87
Sénégal	82,6	1,16	55	1,11	31,1	0,85

Source: DPRE

The analysis of school enrollment reveals many disparities both regionally and in terms of gender. The Kedougou, Ziguinchor and Dakar regions have 100% enrollment rates while Kaffrine Diourbel and Louga have the lowest rates with 47.5%, 52.7% and 66.3%, respectively. With the exception of the Kédougou region, the elementary cycle is more attended by girls than boys.

In the middle cycle, the regions with the highest level of schooling were Ziguinchor (94.5%) and Dakar (73.6%) followed by Fatick (68.7%) and Thiès (66.2% %). At the same time, the regions of Tamba, Kédougou, Sédhiou and Kolda have lower female enrollment rates than boys. As for higher education, half of the regions had a gross enrollment rate above the national level in 2014. The regions of Ziguinchor (66.7%), Dakar (40.3%), and Thiès (39.0%) have the highest rates while the Kaffrine region has the lowest rate with only 12, 5%, followed by Diourbel (14.3%) and Matam (17.2%). In addition, the Dakar and St Louis regions have reached parity.

Figure 8- 4: Gross enrollment ratio in primary school by gender in 2014



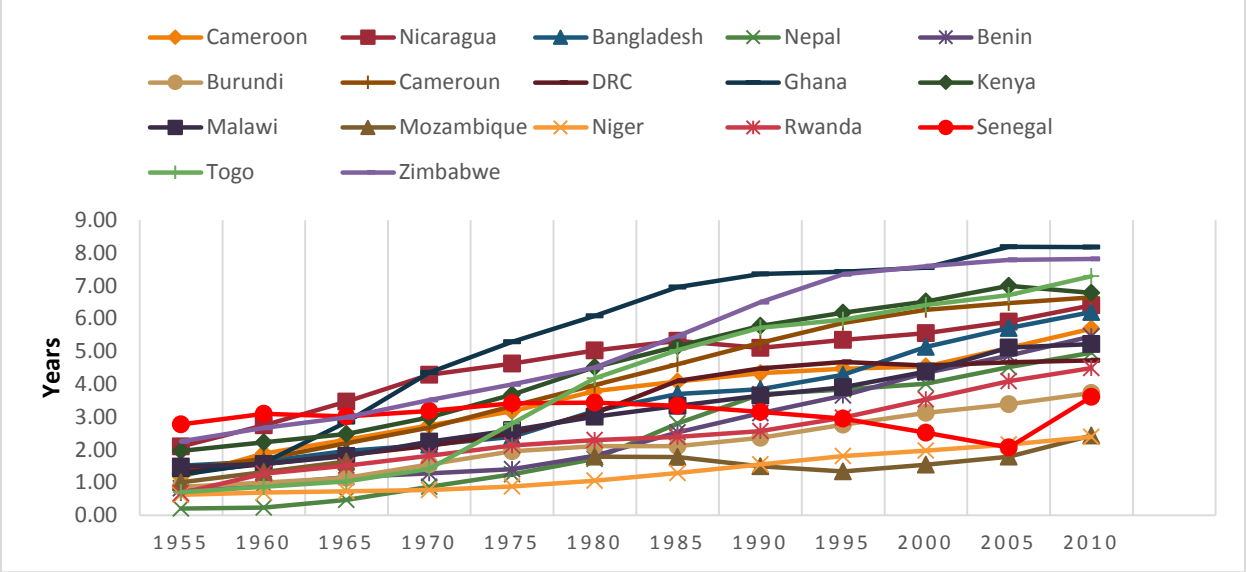
Source: Education Statistics, World Bank

The net enrollment rate is 58.1% in the primary cycle. The large gap between GER and NER results from the fact that many of the population admitted to primary school would not be in the targeted population for this cycle. However, while at the domestic level primary GER is relatively high compared to other cycles, additional efforts are needed to reach the level of education of other comparator countries. Thus, at the international level, Senegal's education performance remains weak, as evidenced by the primary school enrollment rate (see Figure 8-4).

Estimated by the average years of schooling of the population aged 15 years and over, the average duration of schooling in Senegal is particularly low (2.74 years in 2010, according to Barro and Lee (2013) and 2.46 years In 2011 according to the *Enquête de Suivi de la Pauvreté au Sénégal (*ESPS). This score is very erratic compared to its comparator countries (see Figure 8-11) This situation results from the fact that a large number of this population (58.5%) are marginalized (ESPS, 2011) In 2013, according to UNESCO, 66% of the population aged 25 and

over is uneducated, although an improvement in the length of schooling has been observed since 2005. Keeping pupils in school is also a challenge for Senegal. With an estimated school life expectancy of around 8 years, Senegal is lagging behind most comparator countries and is only ahead of Niger and Burkina Faso.

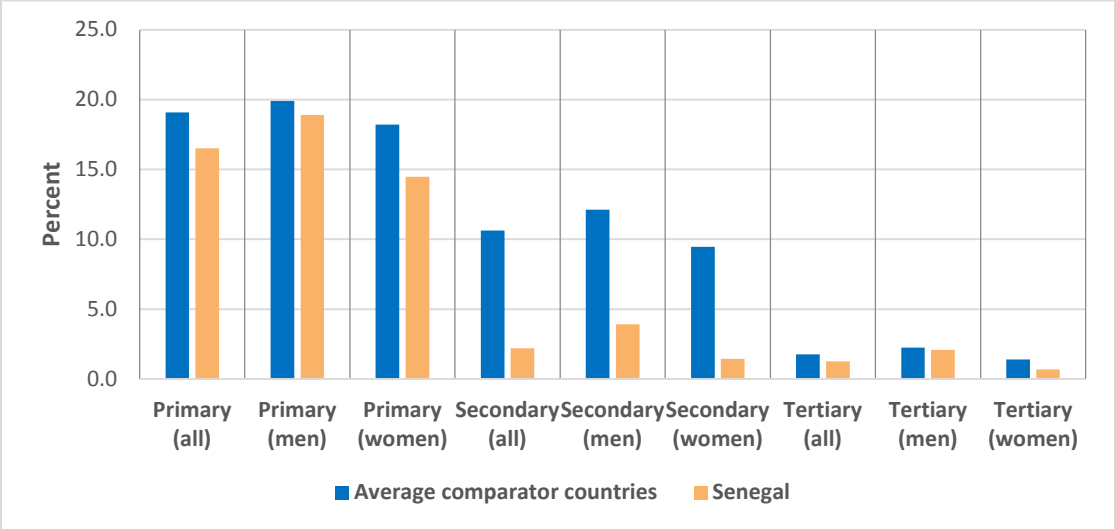
Figure 8- 5: Average years in school 2010



Source: Barro and Lee, 2013

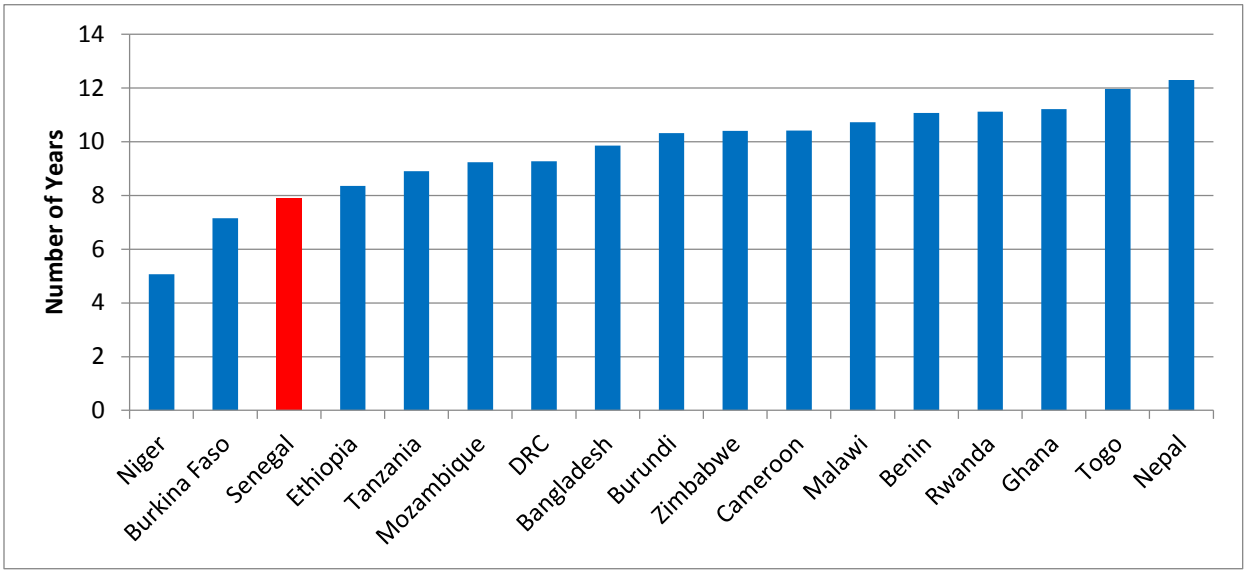
This level of education is accompanied by a low completion rate at the primary, secondary and tertiary levels. Indeed, regardless of the cycle considered and the gender, Senegal scores below the average of its comparator countries.

Figure 8- 6: Completion rate by cycle as % of population aged 15 and over in 2010



Source: Barro and Lee, 2013

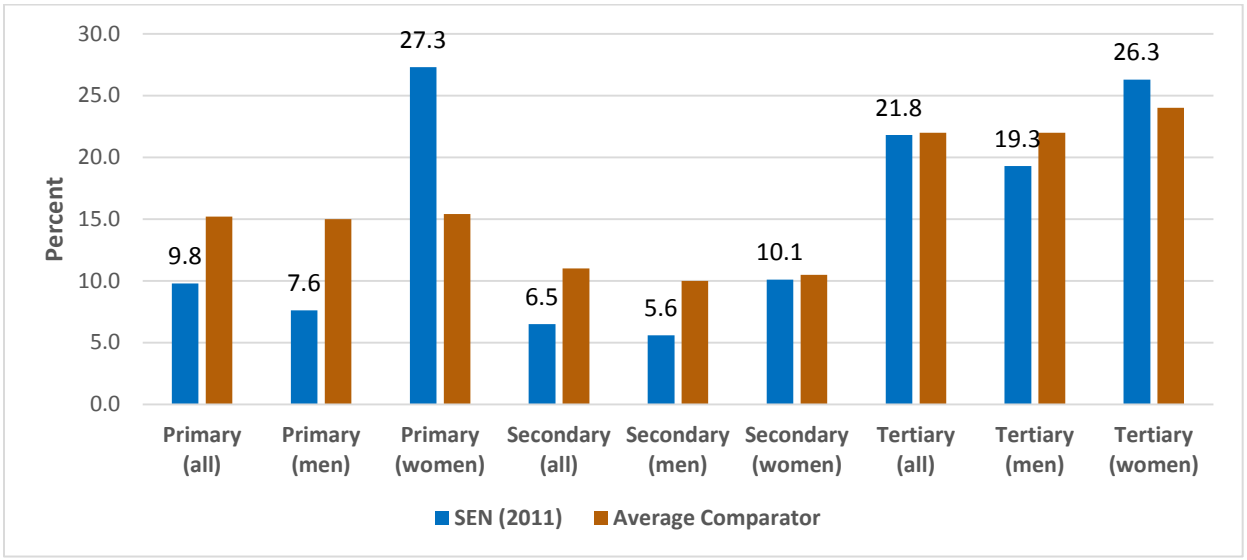
Figure 8- 7: School life expectancy, from primary education to higher education in 2011



Source: UNESCO Institute for Statistics

From a personal point of view, investment in education remains profitable at all levels. The wage variation resulting from an additional year of study remains positive in the order of 9.8%, 6.5% and 21.8% for primary, secondary and tertiary, respectively. Moreover, the return to education for women is higher than that of men.

Figure 8- 8: Education Performance by Level and Gender

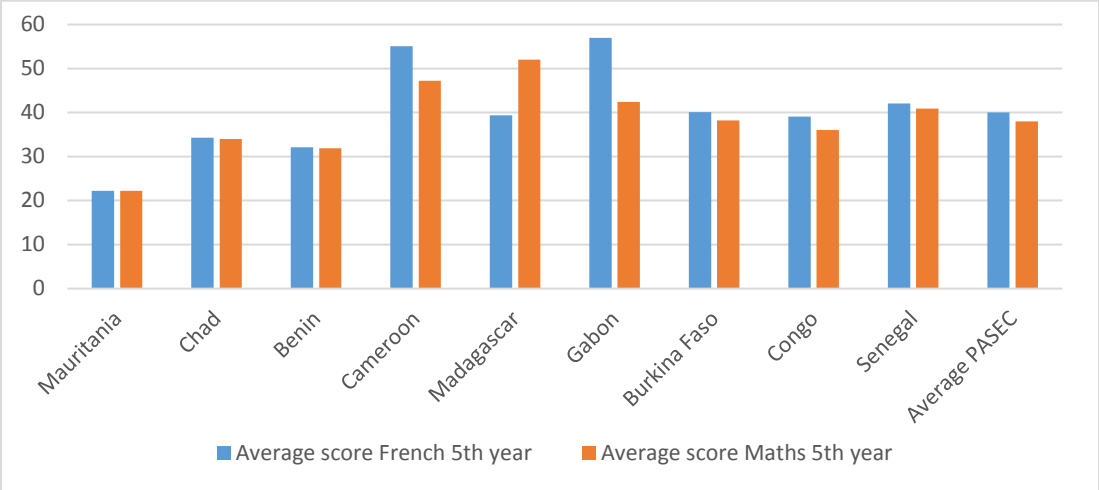


Source: Montenegro and Patrinos (2014)

Quality of education and training

The demand for quality remains at the heart of the new reforms in the education sector, as part of the implementation of the PAQUET-EF program. Indeed, although the adoption of the ten-year education and training plan (PDEF, 2000-2010) made it possible to democratize access to education and reduce disparities, efforts are still needed to improve the quality of education. The results of the PASEC, 2007 (P*rogramme d'Analyse des Système Educatifs de la Confemen)* test in French and mathematics confirm this diagnosis. .[118] In comparison to other Francophone countries, Senegal has an average position of 40% of the correct answers in the two subjects of learning (French and Math) and two levels tested (CP and CE1). In addition, Senegal's score declined between 1996 and 2006. [119]

Figure 8- 9: PASEC test in French and mathematics for the 5th year



Source: CONFEMEN, 2007

[118] CONFEMEN (2007) Evaluation PASEC Senegal, PASEC-CONFEMEN (2008), Preliminary Results of PASEC Diagnostic Assessment 2006/07

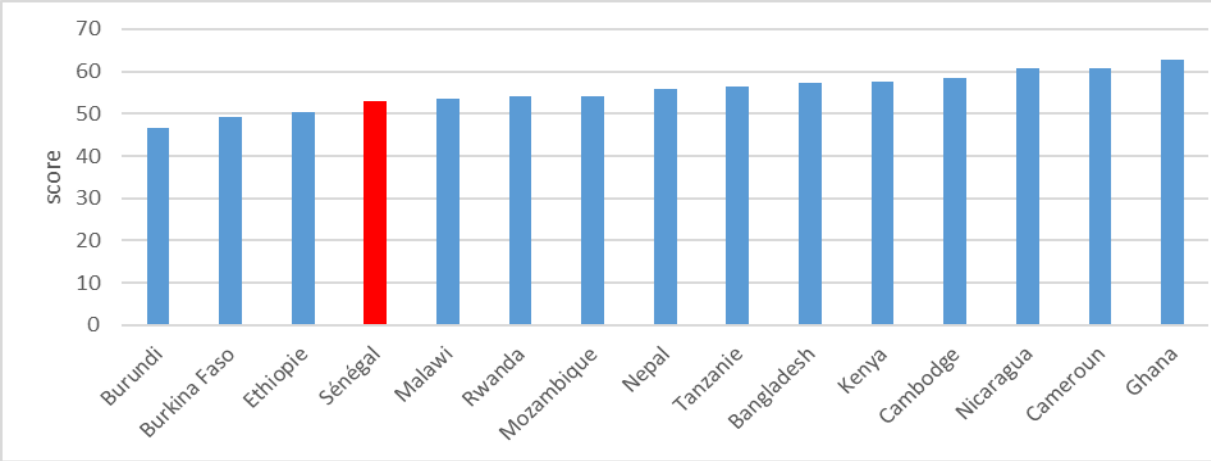
[119] USAID/Senegal (2009) : The Quality of Basic Education in Senegal: A Review

Text Box 8-1: Measuring Human Capital

Human capital is a multidimensional concept, encompassing different factors such as education and health. The World Economic Forum, through its report on human capital, calculates a human capital index that allows countries to be compared according to their score. The index is calculated on the basis of three factors: the first factor addresses the issues of apprenticeship and employment, the second factor deals with demography, and the third allows to keep countries on the same standard by controlling others Differences.

The analysis of the figure below shows that with a score of 53, Senegal obtains a capital index lower than most of its comparators.

Figure: Human Capital Index in 2015.



Source: WEF, 2015

In addition, the Early Grade Reading Assessment (EGRA), 2008 which assesses pupils' competencies at the primary level (CI, CP and CE1) in Senegal shows that almost half of the learners tested are unable to read correctly five words out of a total of 60 words in a minute. According to this test, the performances achieved by the students remain below the level required for comprehension. This is due, among other things, to the heterogeneity of the stakeholders in the cycles, with 53.8% of elementary school teachers without initial training and therefore without qualifications.

Efficiency of education and the education system

The efficiency of any education system is understood in terms of the appropriation by the majority of the learners of the methods and values that the system sets out to inculcate (internal efficiency) and in terms of the relevance of the subjects in the professional and social environments (external efficiency). The study assesses these two types of effectiveness below.

Senegal's performance in primary education is fairly satisfactory. The primary completion rate (TAP) reached 73.4% in 2014, compared to 65.9% in 2013, with a target of 68.8%, Positive difference of 4.6%. Progression is greater for girls than for boys. As for the completion rate of the core cycle (from the 1st to the 3rd grades), it stagnated between 2013 and 2014 (36.1% and 36% respectively). [120] In addition, the repetition rate remains low at around 2.8% in 2014 (WDI). Thus, Senegal has an internal efficiency coefficient (IEC) of 88.86% at the primary level, i.e. nearly 11% wasted resources.

[120] DPRE, Sector Review May 2015

In terms of external efficiency, 9.2% of companies consider the inadequacy of education as a major constraint on their activities (Enterprises Surveys, 2014), meaning that the Senegalese education system is showing encouraging results. Thus, the instruction received by the workforce seems to correspond to the requirements of the companies (with some exceptions). In addition, Figure 8.10 shows that in the labor market, investment in education remains profitable with wage increases of up to 21.8% for graduates of higher education. On average, the monthly salary of individuals depends on their level of education. Whatever the type, the more a person is educated, the higher his salary is with the uneducated receiving the lowest wage. With the exception of the secondary level, a wage gap favorable to men is noted. This is true regardless of the institutional sector with higher pay gaps in the informal sector. Also note below that the returns to education, proxied by differentials between pay according to educational level, are lower in the informal sector for both genders, indicating that formal education matters little for determining earnings if one is to be in the informal sector in Senegal. That the link between productivity and education appears weak for the informal sector, but is much stronger in the formal sector, suggests that the problem is not fundamentally driven by a low general quality of schooling, but rather the lower productivity of informal firms, consistent with the business policy and other issues identified throughout this analysis.

Figure 8- 10: Average wage and level of education in 2011

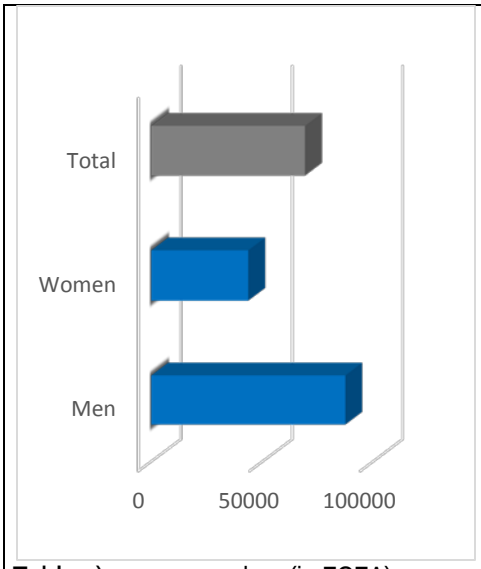


Table a) : average salary (in FCFA)

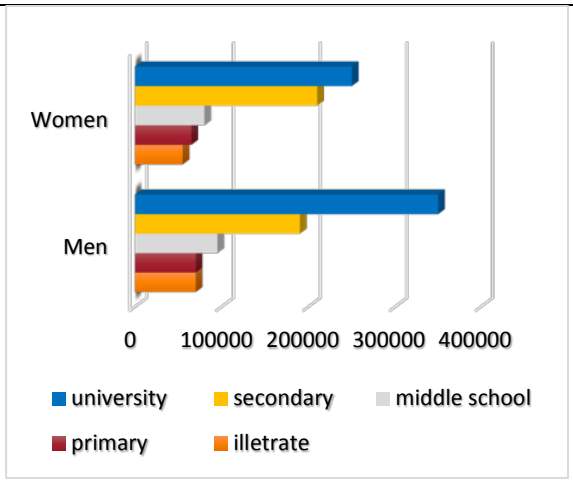


Table b) : salary by level of education & gender

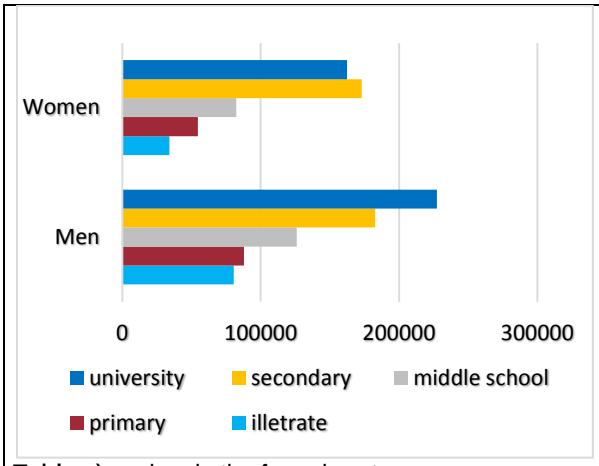


Table c) : salary in the formal sector

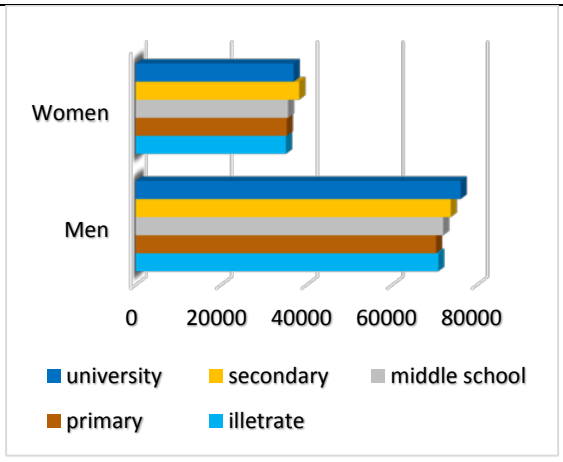
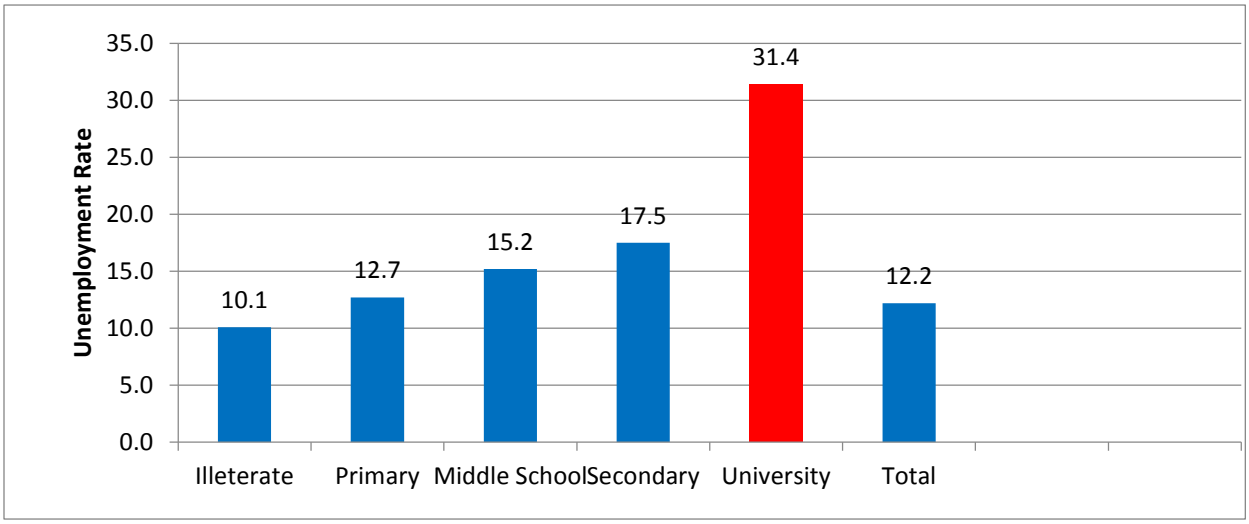


Table d) : salary in the informal sector

Source: ESPS 2011 and Authors calculation

However, these results on external efficiency must be tempered by the fact that the Senegalese education system, like other sub-Saharan African countries, produces more graduates than it needs (Maurel and Seghir (2014). The resulting unemployment and/or migration of graduates of higher education illustrate the inefficiency of the system.

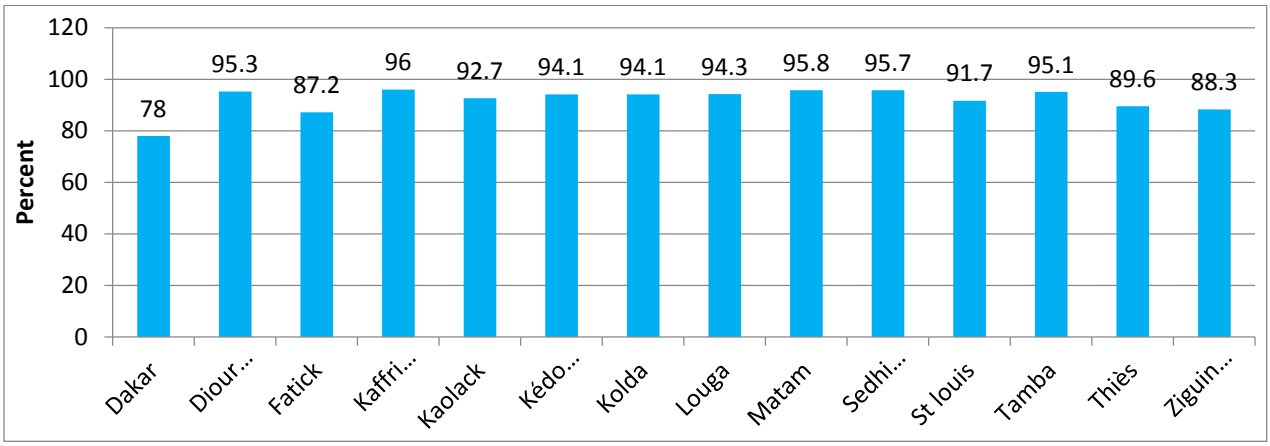
Figure 8- 11: Youth unemployment rates by level of education



Source: ESPS, 2011

In the field of technical education and vocational training, efforts are still insufficient. The results of the general census of 2013 revealed that almost 9 out of 10 people (89.5%) aged 6 or older said that they received no training. This trend was the same used for both gender and place of residence. Only 6.4% received formal training, and 4.1% used informal training. At the regional level, the majority of people had no training in all localities. The Dakar region with 78% has the lowest rate followed by the Ziguinchor and Thiès regions (88.3% and 89.0%, respectively).

Figure 8- 12: Proportion of individuals aged 6 years and over who did not have any vocational training by region



Source: ANSD. RGPHAE 2013

These performances in vocational and technical education fell far short of the target of 25% absorption rate of primary school drop-outs as recommended in the sector policy. There is also a weak linkage between the labor market, vocational training and the accompanying employment policy, as well as the lack of market transparency. These factors combined with the limitations of the information system lead to an increase in the unemployment and underemployment rate. Thus, on the basis of the diagnosis made in the PSE, the supply of training in the urban area does not match the needs of the labor market. Overall, the levels of vocational training are low and limited.

Education quality seems to be on par for Senegal's level of income. Regional test scores compare on average with other countries in the region. However, the formal education system is anecdotally focused on training future civil servants, bureaucrats and public officials which translates to a low level of demand for schooling from individuals, but also a low level of entrepreneurial skills among those who attend. Sending one's children to a Koranic school, or *daara*, where children are taught more "entrepreneurial" skills, is a common substitute for formal schooling, although the exact prevalence is not known.

Unemployment patterns reflect poor internal education efficiency or imbalance between job supply and demand. According to the World Bank's Skills PAD 214, a remarkably large share of the working-age population (36 percent) is neither working nor attending school. This is observed among youth and adults, many of them are educated, with both urban and rural populations at a similar rate.

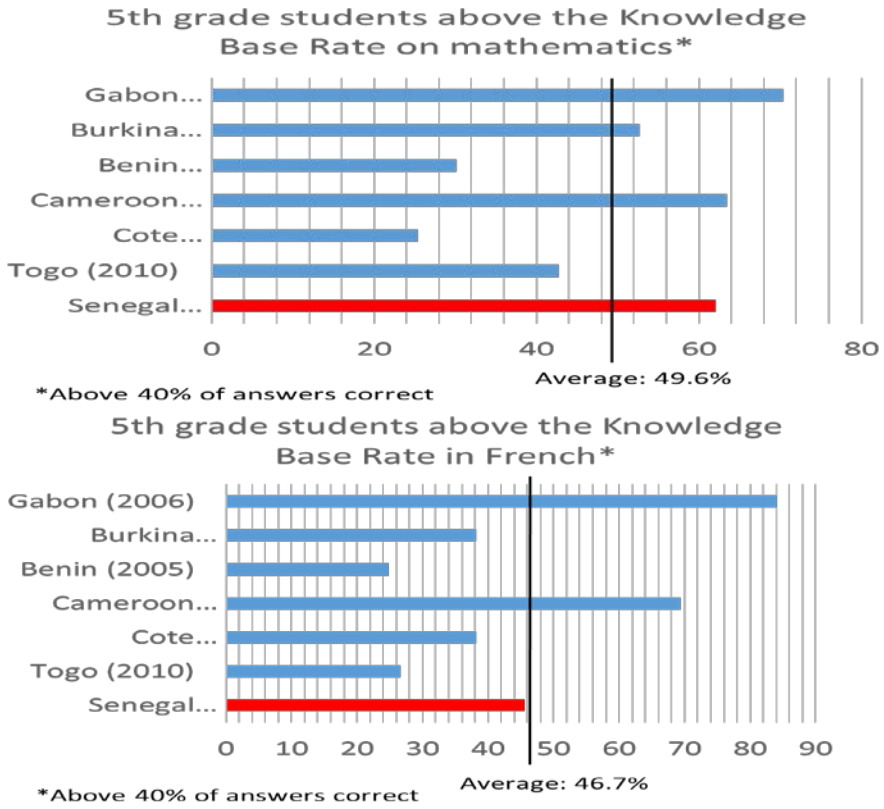
The scattered location and multiplicity of employment support structures, the fact that there is no linkage between the labor market, vocational training and the self-employment support policy, as well as lack of labor market transparency constitute factors that are not conducive for the decline in unemployment and under-employment.

Senegalese quality of education, proxied by regional test scores, is at the regional mean.

Despite strong prior indicators that knowledge and skills may be constraining, the diagnostics tests do not reveal a constraint. Overall migration of tertiary-educated workers ("brain drain") is moderate to high relative to comparators. Moreover, average years of experience by managers

are on par with the global average, and a few years ahead of SSA states. The number of Senegalese managers is relatively high compared to the global average, indicating that managerial skills are relatively abundant. Further, very few firms (19.4%) offer training to their employees, although those that do offer it extensively.[121] And, even though lower levels of education are strongly associated with informality, low productivity, and lower incomes, the relationship is not necessarily causal i.e., there could be a lack of demand for education because informality is the only option for many.

Figure 8- 13: Senegalese performance on regional standardized tests



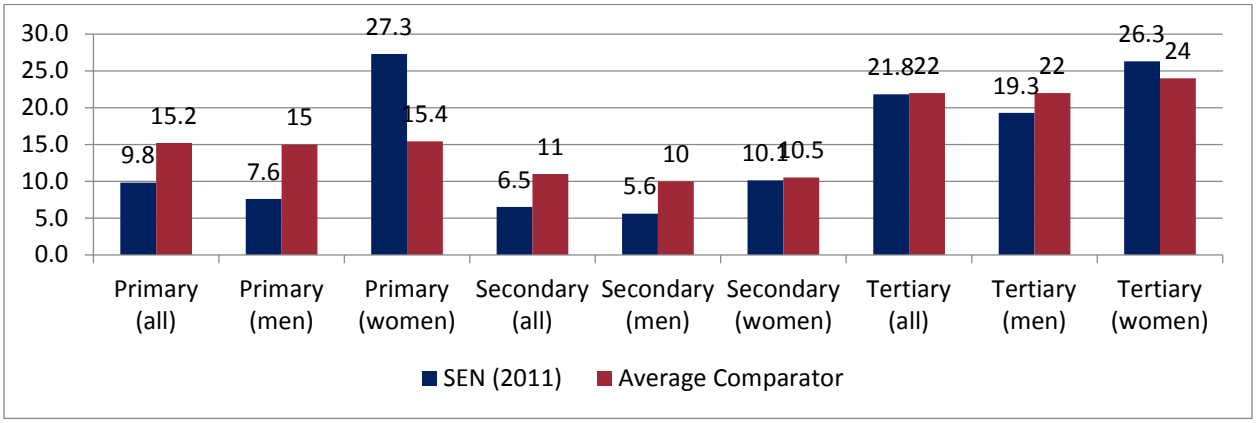
Source: PASEC data[122]

[121] World Bank Enterprise Survey, Senegal 2014
[122]World Bank's Education Statistics database, Programme d'Analyse des Système Educatifs de la CONFEMEN

Returns to an additional year of education are lower than the global average at somewhere between 7.8% and 11.8%, depending on the level of education achieved. There are large differences between men and women and schooling levels. The returns to schooling for women are much higher at all levels than for men, although education is a much stronger predictor of overall earnings for men than for women, suggesting barriers to labor market participation for women, even if they have education. Last, the contribution to GDP of knowledge-intensive industries – finance, real estate, and telecommunications – is increasing, while the relative share of low-skill activities is falling.

Returns to education are relatively low.

Figure 8- 14: P*erformance* by education cycle and gender

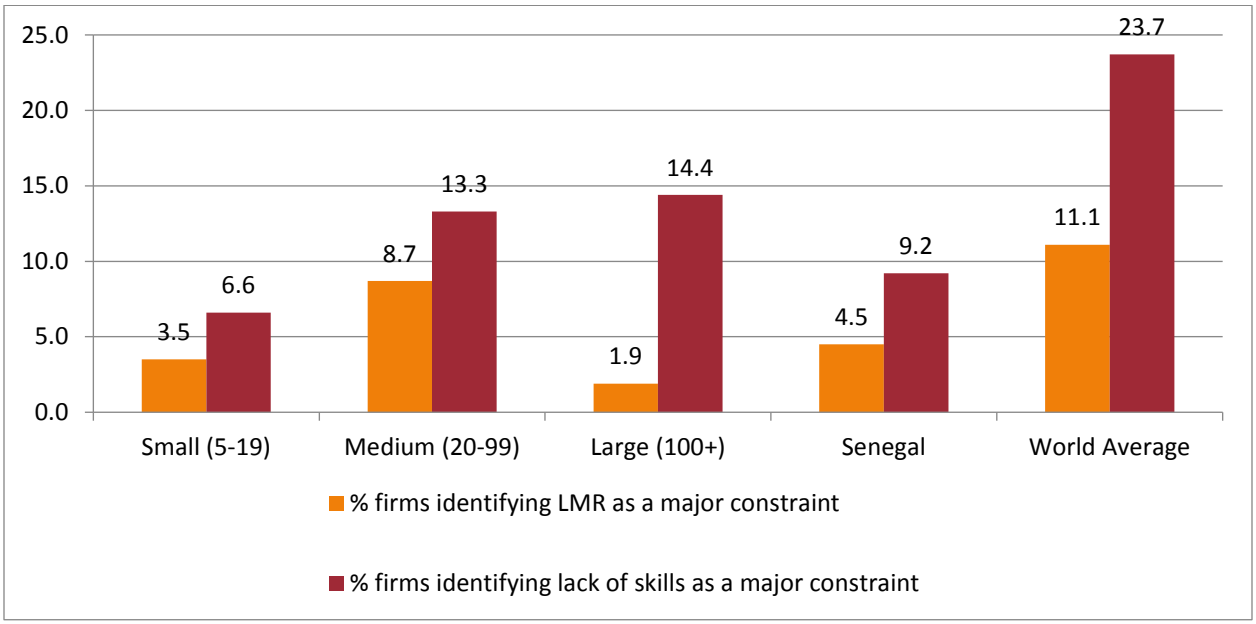


Source: Montenegro and Patrinos (2014)

Though the supply of skilled labor in Senegal is low, this does not rise to the level of binding constraint because the demand for such labor is also low, given the country's level and sophistication of production. However, if Senegal is able to generate significant amounts of economic activity centered on modern, value-added products (such as those envisioned in the PSE), then the current supply of skills is likely to be limiting in the medium- to long-term.

Firms do not note lack of skilled labor as a constraint.

Figure 8- 15: Evidence of skills as a constraint



Source: WEBES

The current and immediate pipeline of workers has limited ability to change their circumstances with the current supply of training. Recent trends in Technical Vocational Education and Training (TVET) enrollment suggest that a diminishing share of youth will enter the labor market with vocational and technical skills over the medium term, and studies show the entire training system (formal and informal) is not set up to foster the range of skills needed for sustained competitiveness, due to limited opportunities, especially outside Dakar; limited offerings of professional training specializations – with strong concentrations in four areas[123] – and a mainly informal apprenticeship program that is not relevant to private sector enterprise. Though this constraint can be alleviated in the short- to medium- term by opening borders and facilitating the importation of necessary skills, the government needs to start thinking early about how to build skills among the Senegalese in the medium- to long-term, or it can expect to confront a binding constraint related to skills in the future. Poorly educated labor force will not attract the industrial investments desired.

Low supply of technical skills reduces the cost-efficiency and productivity of firms (in important/growth-opportunity sectors). General entrepreneurial skills reduce the productivity of firms' production and limit the likelihood of successful expansion

The shadow cost can be apprehended by the performance of education. [124] A high return on education means a shortage in the supply of educated labor. Conversely, a low return means that the supply of educated labor is greater than the demand or that the quality of the offer does not

[123] These are: accounting/management/marketing, hairdressing, dressmaking/tailoring/clothing, and electricity.

[124] Educational performance refers to the salary supplement when the individual completes an additional year of study. Here, education is seen as an investment whose value depends on the cost of training and anticipated future benefits. The fundamental assumption of reasoning is that going to school increases the productivity of people and thus their incomes.

correspond to the needs of the market. In practice, the return on education is determined by the Mincer Model estimate of the earnings function (Mincer 1974), [125] which links the logarithm of wage to education, work experience and certain characteristics of the individual Such as sex, place of residence, etc.

The results of the regression are presented in the following table:

Table 8- 3: Estimated performance of education and training

Estimating the performance of education			
Variables	Total	Men	Women
Number of years of study	0,10***	0,093***	73,6
Experience	0,06***	0,082***	0,102***
Experience ^ 2	-0,0006***	-0,0008***	0,041***
Constant	8,6***	8,59***	-0,0004***
R 2	0,30	0,35	8,64***
Depend on the level of education and vocational training			
Experience	0.07 ***	0,08 ***	0.05 ***
Experience ^ 2	-0,0007 ***	-0,0009 ***	-0,0005 ***
Primary	0.088 ***	0.07 ***	0.091 ***
Middle School	0.065 ***	0.057 ***	0.09 ***
Secondary	0, 12 ***	0.10 ***	0.183 ***
High Education	0.15 ***	0.148 ***	0.185 ***
No vocational training	0.87 ***	0.76 ***	0.71 ***
constant	8.68 ***	8.69 ***	8.65 ***
R 2	0.19	0.26	0.13
Number of observations	**44924**	**26003**	**18921**

Note: *** p <0.01, ** p <0.05, * p <0.1
Source: Authors from ESPS, 2011

Overall, an additional year of study provides a 10% increase in salary levels. These results are consistent with most empirical studies documented in this area (Card, (1993), Banerjee and Duflo (2005), Psacharopoulos and Patrinos (2004), and Montenegro Patrinos (2014).

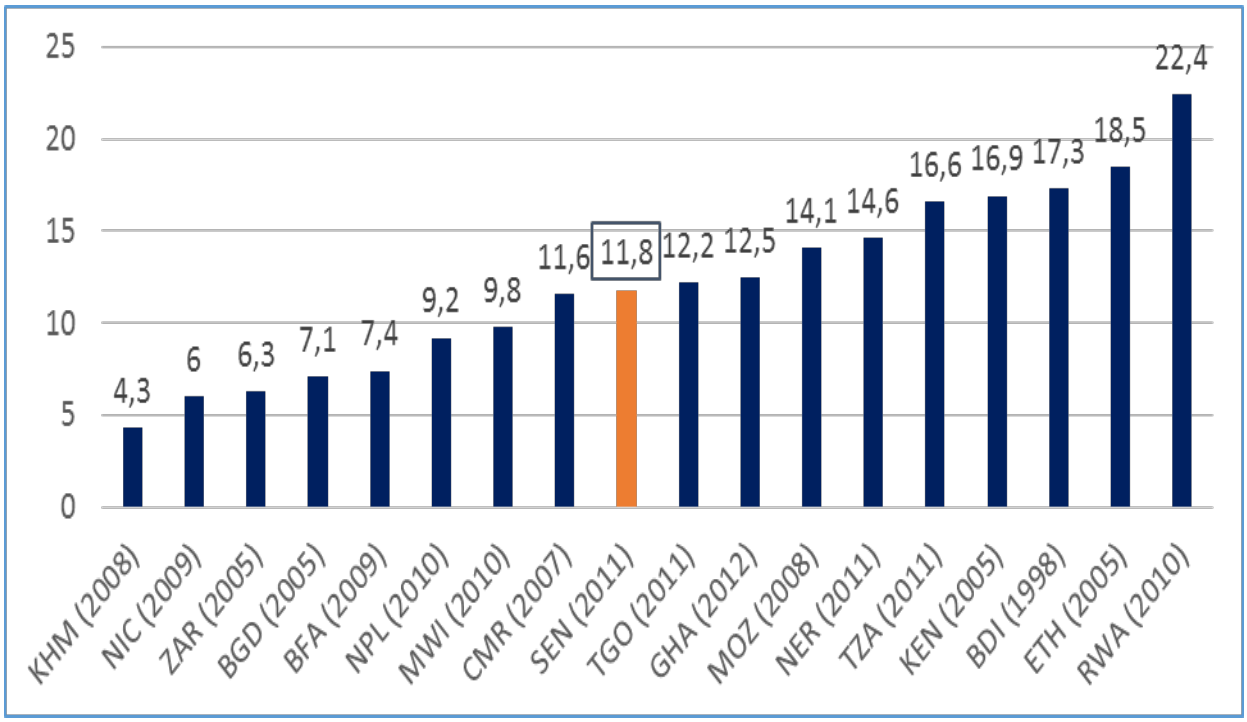
Estimating the performance of education by level makes it possible to see that the latter increases as the individual passes a given cycle (primary, middle, secondary and higher), with higher level education than the others. These last results, although contrasting (in particular with those found by the UNESCO-BREDA Dakar Pole, 2007), confirm the new dynamics of private returns to education discussed above. This is significant particularly with higher education which is more profitable than the other cycles (Montenegro and Patrinos (2014).

Moreover, on the basis of the same gain equation, estimated on a sample of 139 countries, Montenegro and Patrinos (2014) find that the return on education in Senegal is not particularly

[125] Mincer (1974): Theory of investment in human capital used to examine income distribution. Relationship between schooling, earnings and post-school investment

high in comparison with its comparators. Indeed, with 11.8% increase in salary for an additional year of study, it occupies an average position, below half of the comparator countries.

Figure 8- 16: Education performance in Senegal and comparator countries



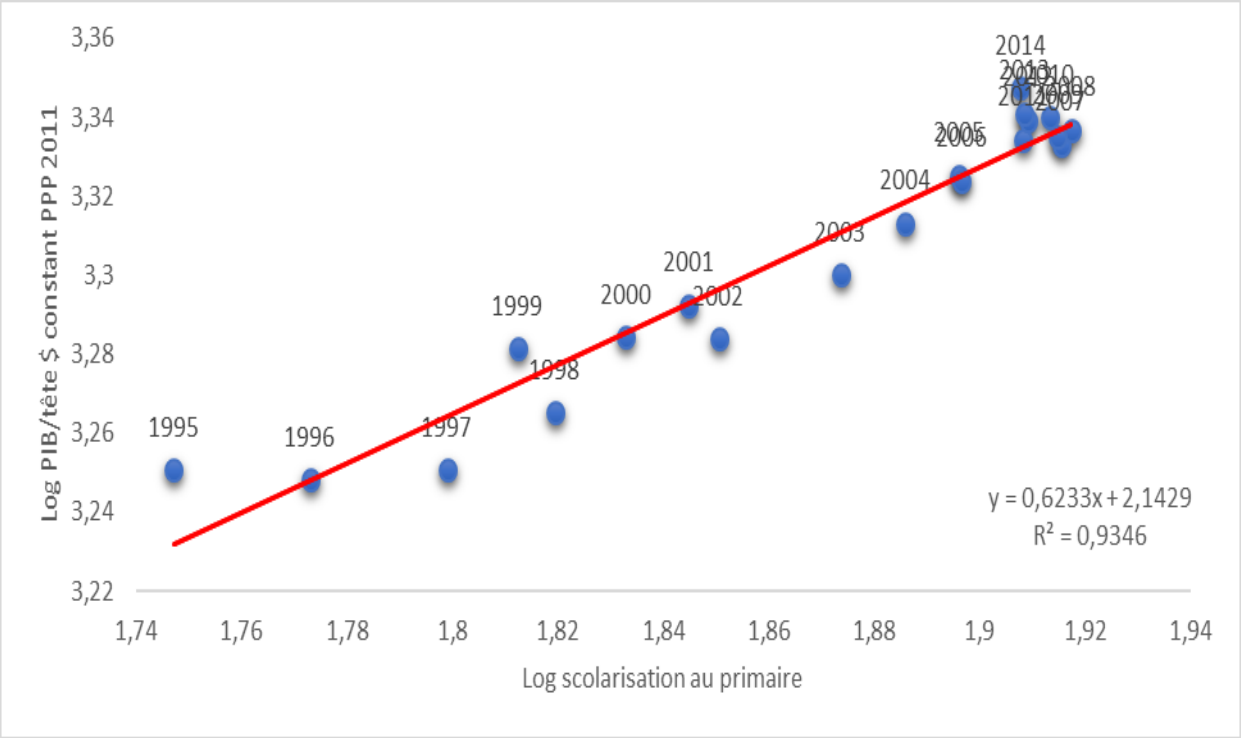
Source: Montenegro and Patrinos (2014)

This show that the shadow cost of education is not so high as to be a constraint compared to the reference countries. Moreover, the positive evolution of youth unemployment according to their level of education shows the total quantity of labor (educated skilled labor) in the labor market, which confirms the accessibility of skilled labor.

Rather, this analysis envisages the hypothesis of a structural imbalance between an excess supply of skilled labor alongside a limited stock of formal employment and/or a more open labor market profile for low or intermediate qualifications (ADB, 2012). In Senegal, the labor market is still very segmented with a dominance of informal jobs which are generally not sensitive to the level of education and a modern sector in particular manufacturing in declining regimes.

This test allows one to see if removal of the constraint leads to an improvement of the objective function. The test analyzes the correlation between levels of education and the level of Per Capita GDP or private investment.

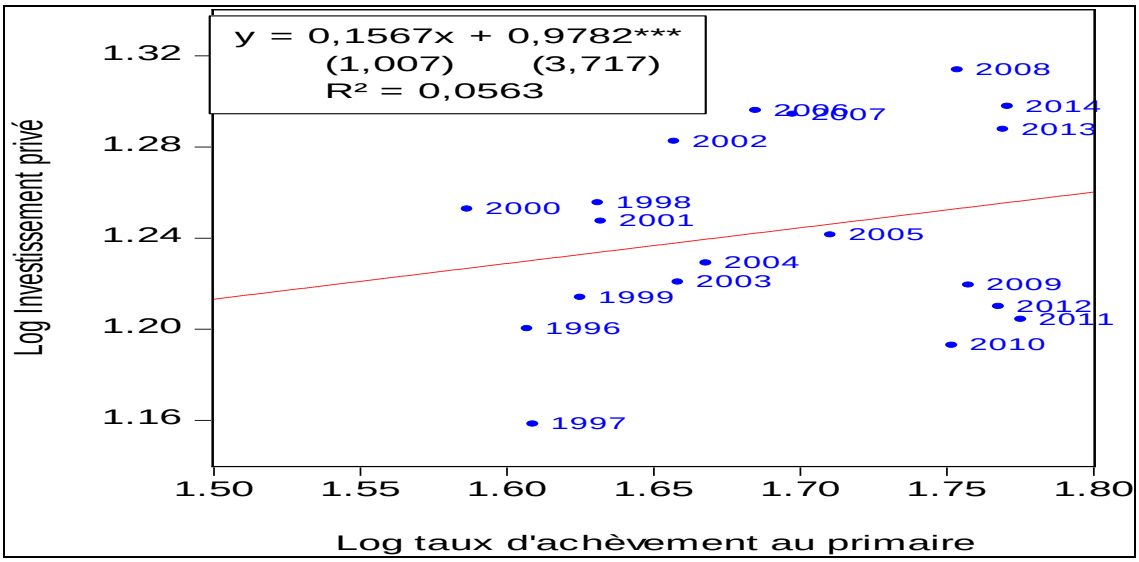
Figure 8- 17: Correlation between education level and per capita GDP



Source: Education Statistics and WDI, World Bank

Figures 8-16 and 8-17 show a positive correlation between the gross enrollment ratio in primary education and per capita GDP on the one hand, and completion rate and private investment, on the other. These results are consistent with the empirical literature (E.Glaeser & J.Shapiro, 2001) on the positive effect of education on the level of economic development. However, it should be noted that the correlation between the rate of education completion and private investment is not significant and that the positive effect of completing the primary cycle on private investment and therefore on growth should be put into perspective. Although Test 2 gives a positive result (see Figure 8-14), it should be noted that primary education is of basic type and does not inculcate specific competences for the execution of the tasks specific to the enterprises. In addition, an analysis of the stylized facts show that the level of education reached could not be an obstacle because of the massive unemployment observed among higher education graduates (31.4%) which affected the choice of such an indicator for this test. To overcome this limit, the analysis can be deepened by considering the quality dimension of the educated workforce. However, this perspective is limited by data availability issues.

Figure 8- 18: Correlation between log completion rate and private investment rate

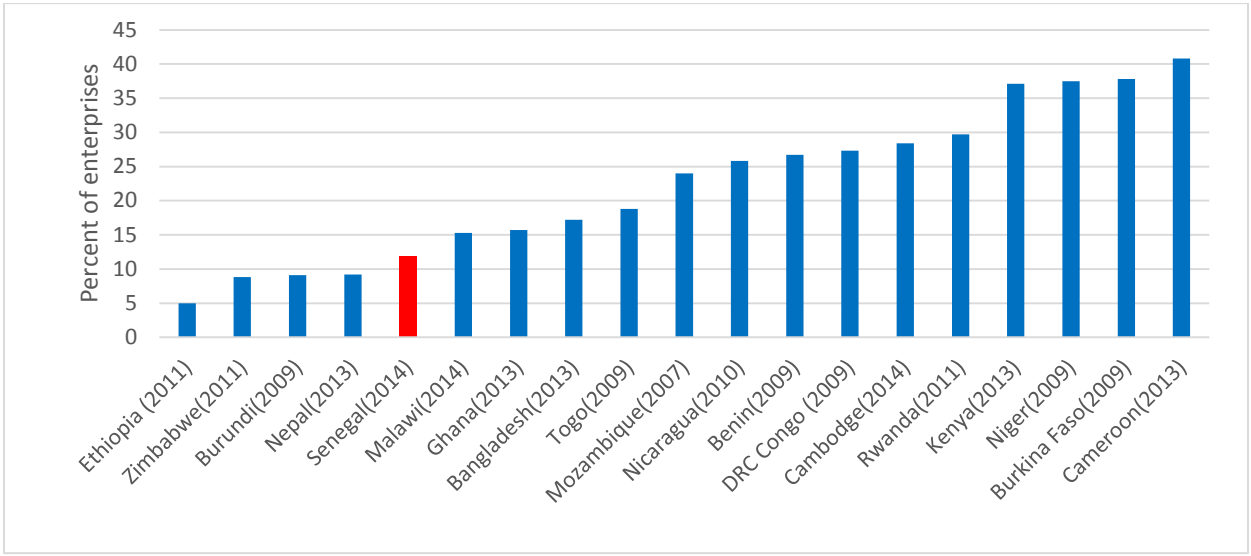


Note: Values () are student statistics. *** p <0.01, ** p <0.05, * p <0.1

Source: Education Statistics and WDI

To what extent firms try to circumvent the constraint linked to the deficit of human capital? According to the survey carried out by the World Bank in 2014, only 9.2% of companies consider the inadequacy of the educated labor force as a major constraint. Compared with the reference countries, this percentage remains low.

Figure 8- 19: Percent of enterprises identifying the inadequacy of workforce education as a major constraint

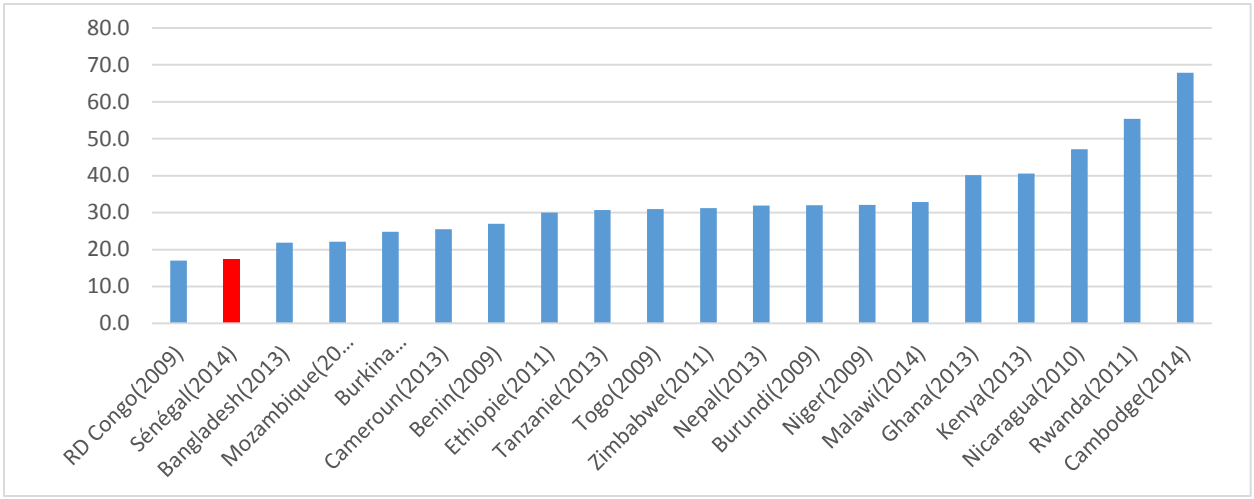


Source: Enterprise Survey, World Bank

To compensate for the constraints of the educated labor force (in particular its inadequacy), firms generally offer continuous training to their employees once they have been recruited. The intensity

of the use of this type of training shows the existence of the problem. The survey of companies shows that in Senegal only 17.4% of companies offer training to their employees. This rate remains the lowest in all comparator countries with the exception of the DR Congo.

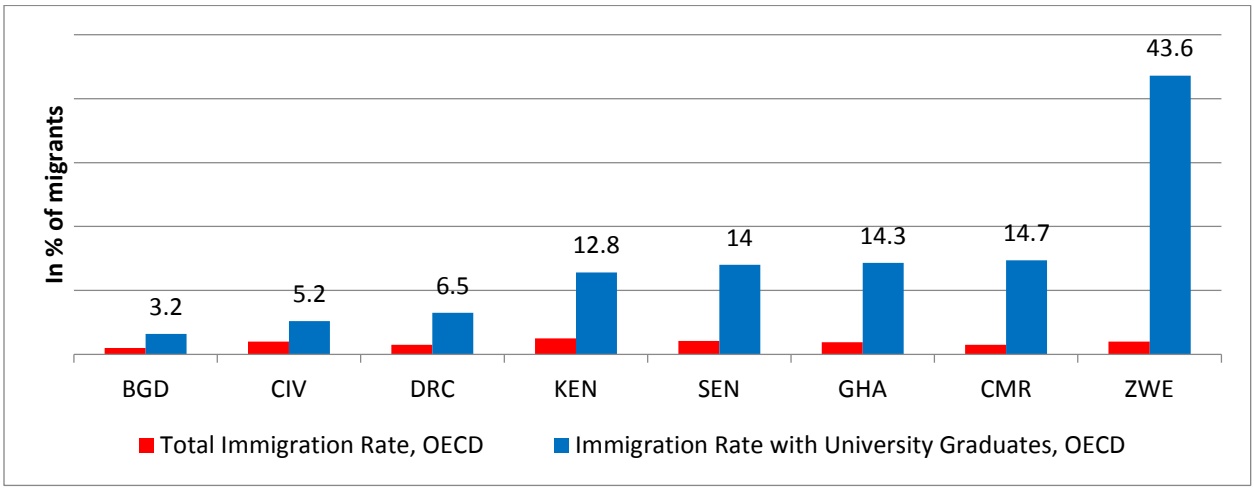
Figure 8- 20: Training offered by businesses to their employees



Source: Enterprise Survey, World Bank

The profile of emigration is also an edifying element of the circumvention strategies. Indeed, in a situation of deficit of human capital (skilled labor), Senegal must register a high rate of immigration of skilled workers compared to the unskilled workers. However, according to OECD statistics in 2010/2011, university graduates account for 14% of the total stock of emigrants.

Figure 8- 21: Emigration rates in OECD countries in 2010/2011



Source: OECD, 2013 and Authors

Also, the general census of 2013 shows that 10.2% of emigrants are graduates of higher education. In the absence of statistics on the educational profile of immigrants, the skill level of

emigrants shows a trend towards the export of skilled labor (higher education graduates). However, this rate of emigration remains an average in comparison to comparator countries (see Figure 8-21).

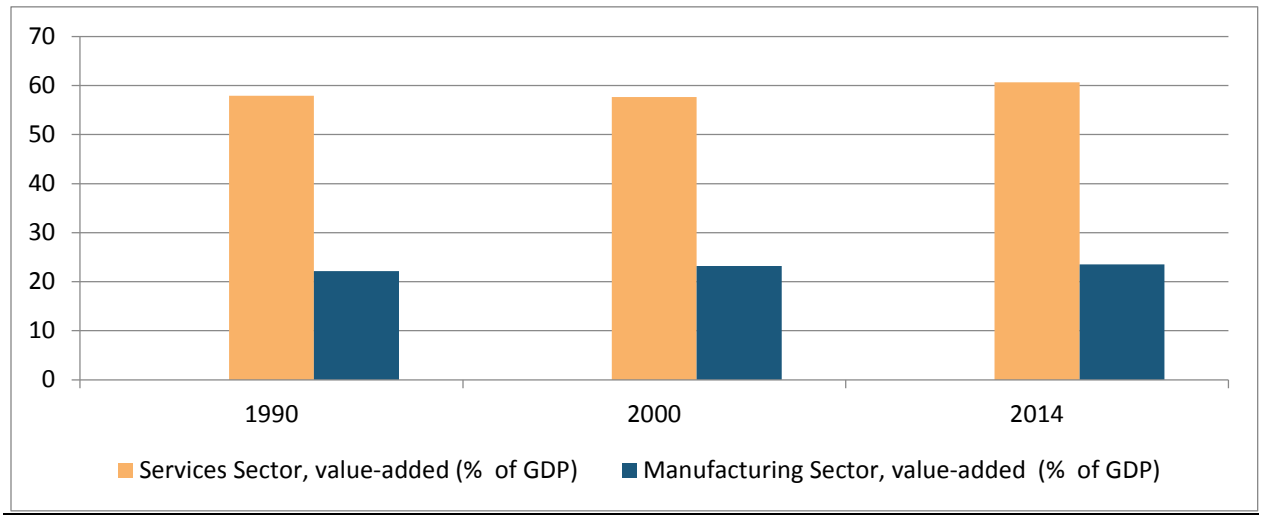
These findings highlight the phenomenon of brain drain in recent years. Indeed, the migration profile drawn up by the International Organization for Migration (IOM) in 2009 shows that the majority of Senegalese emigrants are of working age and 68% are looking for a better job. This form of migration also affects skilled workers, estimated at 24.1% of the stock of emigrants (IOM (2009), Dia (2006) and ANSD (2004 and 2011)). Already in 2000, tertiary graduates accounted for 17.7% of the migrant stock (Docquier and Marfouk (2005)). In addition, health care skills are severely affected by 51% of physicians and 27% of nurses over the period 1995-2005 (Clemens and Pettersson (2008)).

Thus, this test provides a negative result in that the companies' circumvention strategies remain negligible compared to the comparator countries, while the migration profile shows a clear trend in the labor force of exporting skills.

This test tries to see the profile of the companies and the workforce that are able to thrive given the constraint of skilled workers. Indeed, if there is a lack of qualification of the workforce in a sector there would be few firms requiring qualification (camel firms) whereas an abundance of qualified labor will favor the establishment of skills and/or technology based companies (hippopotamus firms).

If the supply of skilled labor is a constraint then firms in the manufacturing sector which depend on skilled labor must be allocated in comparison with those service firms that are less dependent on labor. In the absence of data on employment trends in both sectors in Senegal, value-added is used. The analysis in Figure 8-22 below shows that the value added in the manufacturing sector is falling over time. Thus, the boom in the sector that depends more on skilled labor is impacted.

Figure 8- 22: Value-added of the sectors (% of GDP)



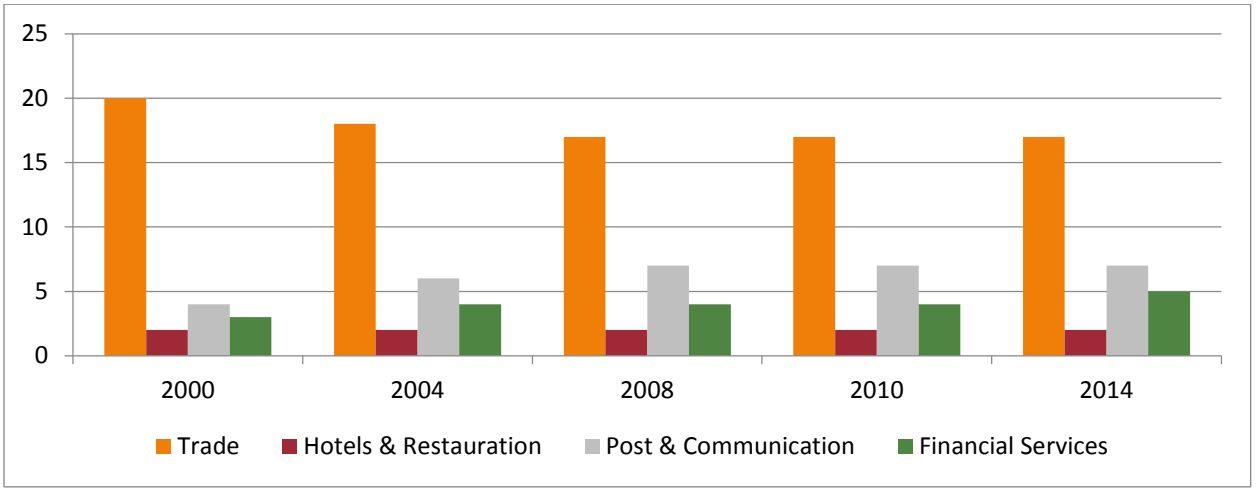
Source: WDI and Authors

However, this test is weak insofar as there are branches of activity in the manufacturing sector that do not depend on the quality of the workforce, while some services are knowledge intensive.

To correct this bias, the service sector is disaggregated according to the OECD classification. Thus, Knowledge Intensive Business Services (KIBS) are distinguished from services that are less so. If human capital is a constraint for the Senegalese economy then KIBS activities must be impacted compared to other types of activity.

The figure below shows value added trends in the trade and hospitality and catering services (which are less knowledge intensive), as well as in post and telecommunications and financial services which are KIBS. Analysis of the graph shows a predominance of trade services over time. This test gives a positive result. However, this conclusion has to be put into perspective insofar as the dynamism of the trade sector is explained more by the informal nature of the economy than the scarcity of qualification (human capital).

Figure 8- 23: Evolution of value added by sub-sector (as% of total VA)



Source: ANSD

CHAPTER 9: TRANSPORTATION: IS LACK OF ADEQUATE INFRASTRUCTURE A BINDING CONSTRAINT TO GROWTH?

Infrastructure is a determining factor in the development process of a country. Complementary to capital (financial and human) and production technology, infrastructures contribute to the improvement of the business environment and multiply the opportunities for wealth creation and improvement of the living conditions of the population. They contribute to the opening-up of certain regions and a much more equitable distribution of wealth throughout the territory.

Inadequate infrastructures, on the other hand, represent bottlenecks to the competitiveness of enterprises. Indeed, an environment marked by weak and / or inadequate infrastructure often leads to underperformance and slowing down the pace of private investment and economic growth. It is therefore necessary to carry out an overall analysis of infrastructures in order to understand their shortcomings.

9.1 SUMMARY CONSTRAINT

Almost 75% of the paved roads in the country are in good condition; 47% of the unpaved or dirt roads are in good condition.[126] Both of these numbers reflect significant increases since 2010 at 60% and 39%, respectively. Additionally, rural road availability has increased since 2008. Thirty-three percent of the target areas in Senegal's 2008 round of the Afrobarometer survey had a tarred or paved road – well below the survey average of 41%- while this was true of 49% of surveyed areas in the 2015 round, which was slightly above the survey average. There have been significant efforts to improve the quality and extent of road infrastructure in the last several years. As a result, Senegal has restored its 78th place ranking on the Global Competitiveness Report's indicator for overall quality of the road network infrastructure, back up from a fall to 91st place in 2010-2011. Overall, while the road density is low, the quality of roads is good. Furthermore, though relatively few people live within 5km of a primary road outside of Dakar, this is most likely due to the dispersion of the population in rural areas rather than a true lack of infrastructure, given the relatively large density of roads per 1000 inhabitants in areas outside of Dakar.

To summarize, transportation infrastructure does not appear to be a binding constraint to economic growth at this time. In spite of significant regional disparities in access to roads — roads are clustered in the western and urban areas —on the national level Senegal's infrastructure appears to be an area of relative strength. Indicators of the quality of roads, airports, and ports are all relatively favorable. Based on relatively adequate supply of infrastructure to support investment, there is no indication that a lack of infrastructure at the national level poses a binding constraint to Senegal's growth.

Senegal's transport infrastructure is quite advanced when compared with low-income countries in Africa. But to sustain rapid economic growth in the years ahead, it is now necessary for Senegal to measure its transport infrastructure against the middle-income, emerging country benchmark to which it now aspires. The sub-sections that follow briefly review and compare Senegal's transport infrastructure with that of its comparator countries.

Roads. Roads infrastructure is a critical problem in Senegal. While the roads quality is good, the network density is low and unevenly distributed. The transport services are also a critical issue

[126] AGEROUTE, 2015

as prices of local shipments are high. The prices of long distance shipment are low but overloading of trucks remains a structural problem.

Ports. Senegal's ports infrastructure appears not to be a constraint. Logistics appear to be a serious problem in Senegal and deserve further due diligence. According to the World Bank Logistics Performance Index (2012) which measures countries' trade logistics efficiency, Senegal was ranked 110th out of 155 countries. As per the 2014 Logistics Performance Index, Senegal scored low on logistics competence. Senegal was rated 2.53, while the next lowest country within the similar per capita group scored 2.75, and all others scored above 3.00. In 2016, this average fell to 2.33. However, the WEF in 2015 scored Senegal relatively well on quality of port infrastructure, at 4.13 out of a possible score of 7.

In terms of port infrastructure Senegal performs better than any of the comparators. Between 2015 and 2016 for example Senegal ranks 64 out of 140 (better than any of the comparators), according to the WEF.

Air Transport. Senegal has an average quality of air transport infrastructure. However, both the number of passengers transported and the quantity of freight carried are below the average of countries with similar level of income. It is worth noting that currently the GOS is building a new international airport with a minimum capacity of five million passengers.

Railways. Both in terms of density and quality Senegal seems to be doing better than the average ranking of its comparators. However, there are lingering issues with the failing main railroad. The GOS has launched discussions with many of its partners who may help to rehabilitate the railroad.

Based on the indicators available and the large infrastructure construction and road rehabilitation projects now underway, it appears that Senegal has adequate infrastructure to meet its current needs. There will still be a need to continue to invest and expand in keeping with the economy's broader growth trends, and a higher level of investment may be economically justified in transport infrastructure—roads and ports in particular—to provide access to under-served areas and to enhance Senegal's trade links.

9.2 BACKGROUND AND BENCHMARKING

An ambitious investment policy has been central to Senegal's development strategy. With the support of donors, the GOS has focused investment spending on expanding and modernizing transport infrastructure to facilitate access to markets. Major infrastructure projects include the Blaise Diagne International Airport, the Dakar-Diamniadio toll road, other large and small road projects, and the modernization of the port of Dakar. These projects are intended to spur private sector development, diversify economic activity away from Dakar, and support poverty reduction.

The WEF Global Enabling Trade Report 2015/2016 ranks Senegal 88/141 for the availability and quality of transport infrastructure; this rank falls to 104 for the quality and availability of transport services.[127] [128] The WEF Travel and Tourism Competitiveness Guide 2015 ranks Senegal 99/141

[127] WEF Global Enabling Trade Report 2014,
http://www3.weforum.org/docs/WEF_GlobalEnablingTrade_Report_2014.pdf

[128] AfDB, Border Posts, Checkpoints, and Intra-African Trade: Challenges and Solutions (2012). Report notes a high incidence of bribery and corruption at the border for inland transit services in West Africa. A driver from Dakar to Bamako, Mali, can expect to stop 100 times and pay as much as $437 USD in bribes.

for ground and port infrastructure. Considering only road density, this ranking falls to 120, or fourth to the last of the comparator group. Further, the quality of ground transport infrastructure scores significantly better at 3.7 than the composite score of 2.9 on this indicator, putting Senegal second among comparators. The quality of roads indicator scores 3.4 of 6.

Notwithstanding this positive report, the cost of domestic transport and freight services is high for local freight. Studies showed a per km cost of local freight of as much as forty cents per metric ton-kilometer, versus 10 cents for a longer-haul trip to Dakar. The high cost is likely explained to some extent by the quality of secondary and rural roads, but local prices were high even on roads that did not use a secondary road. Therefore, we consider the price of local transport is probably due to local market structure and the cartelization of local routes. This is true to a lesser extent for inland national and cross-border routes, although the costs and delays are significant and among the highest in the region.[129] The most recent WAEMU Road Governance report notes substantial progress in road governance but much work remains.[130]

Despite these improvements, Senegal has not seen an overall increased level of investment or strong economic growth trends, indicating that, despite perhaps positive results for certain sectors – e.g., mining – domestic transport probably does not rise to the level of binding. Overall, benchmark indicators show that roads in Senegal are of satisfactory quantity and quality, given the country's level of income, and do not indicate a constraint. Less than 1% of firms cite the quantity or quality of road networks in the WBES as the biggest barrier to their operations. Overall, the evidence is compelling that a problem exists in extending the road network to rural areas, especially in order to achieve the PSE vision in terms of agro-processing and development of economic areas outside of Dakar. However, many of the problems related to transport cost appear to be primarily policy-related, rather than infrastructure related. Nor does any indicator suggest that the problems associated with road transport are more pressing than either electricity infrastructure or the policy issue related to the business environment, discussed above.

Transportation Infrastructure – in particular roads and ports - is a strong factor in attracting private investment in Senegal. Special efforts are underway to modernize the road network, enhance development of industrial zones, and upgrade ports and airports. However, the infrastructure deficit (in quantity and quality) found especially in rural areas seriously hampers the creation of wealth. The weaknesses of the road and railway density are constraints that do not favor the creation of wealth. Indeed, a lack of roads, electricity and telecommunications are causing low returns to entrepreneurs and projects. Furthermore, unreliable transport costs and difficult access limit the development of economic activities. Moreover, poor integration of road, rail, maritime, river and air transportation will not improve the movement of people and goods as well as leveraging the huge local potential.

The transport costs in Senegal are excessively high for local cargo and passengers, but this is due primarily to market structure than to road quality. Despite improved efforts in terms of access

(http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/INTRA%20AFRICAN%20TRADE_INTRA%20AFRICAN%20TRADE.pdf).

[129] AfDB, Border Posts, Checkpoints, and Intra-African Trade: Challenges and Solutions (2012). http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/INTRA%20AFRICAN%20TRADE_INTRA%20AFRICAN%20TRADE.pdf

[130] WAEMU, 24th Road Governance Report: Survey Results for the 2nd Quarter http://www.borderlesswa.com/sites/default/files/resources/jun14/24th%20IRTG%20report.pdf

to roads and road quality in recent years, Senegal continues to have a low density of roads relative to its comparators by several measures.

Overall quality of infrastructure

During the last decade, considerable efforts have been made by the government in the implementation and rehabilitation of structuring projects in several infrastructure sectors such as transport, water works, sanitation, energy and telecommunications. Analysis of the evolution of the overall quality of infrastructures shows that Senegal is well placed among its comparators despite deterioration in its ranking between 2012 and 2014. Thus, by 2015 Senegal ranks 97th in the world just behind Kenya and Rwanda which are in the lead.

Table 9- 1: Evolution of overall infrastructure quality

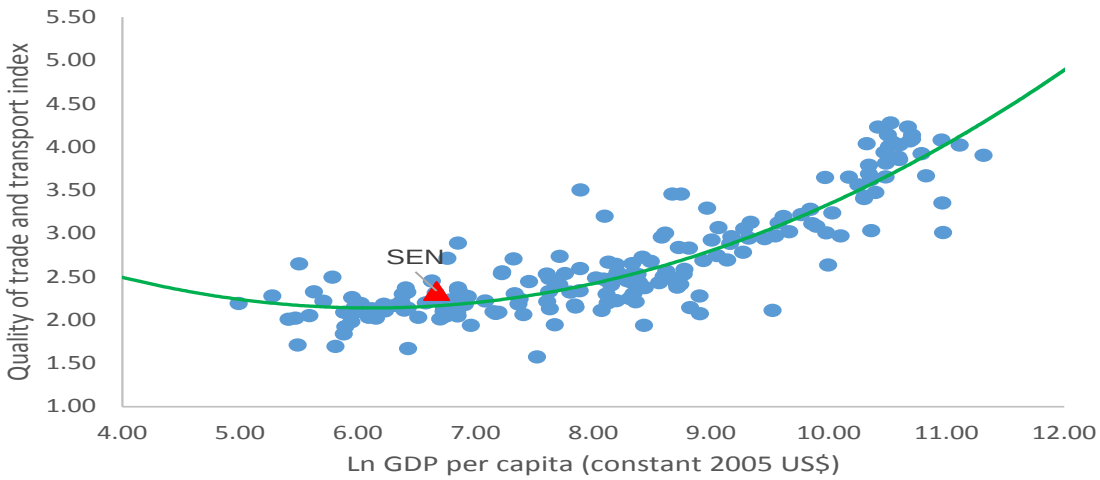
	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Bangladesh	130	129	131	134	130
Benin	125	117	121	135	135
Burkina Faso	128	131	136	140	137
Burundi	126	133	142	141	131
Cambodia	83	76	72	86	109
Cameroon	121	122	122	128	116
Ethiopia	87	98	100	112	115
Ghana	85	90	86	90	110
Kenya	88	81	80	68	65
Malawi	106	111	116	121	118
Mozambique	110	121	126	126	124
Nepal	133	132	129	132	126
Nicaragua	114	118	106	104	114
Rwanda	67	52	48	62	68
Senegal	81	97	109	113	97
Tanzania	124	119	124	124	117

Source: GCI, World Economic Forum

Analysis of transport infrastructure

Transport infrastructure, particularly road and port infrastructure, has played a major role in both domestic and international trade and economic growth. The analysis of Figure 9-1 below shows that Senegal has an average score compared to its level of development.

Figure 9- 1: Quality of trade and transport infrastructures



Source: WDI

However, these results conceal shortcomings and disparities that we will attempt to examine in the road, rail, maritime and air transport sub-sectors.

Road Transport

Road infrastructure is an important area of support for wealth creation. Indeed, road transport remains the main transit route for people and goods with 90% of the travel needs. [131] It also plays an important role in regional and sub-regional integration and in the process of opening up the country. A catalytic sector, it contributes fundamentally to the development of localities and to the reduction of poverty.

Senegal's road transport receives good ratings in the World Bank's Senegal's Infrastructure: A Continental Perspective (Torres, Briceño-Garmendia, Dominguez, 2011). To quote from that study[132]:

> *The existing network of 18,063 km of roads is adequate to provide basic regional, national, and international connectivity, linking Dakar to international border crossings and provincial capitals in the interior. This is generally true even if Senegal's road density indicators, both for classified and total network, are lower than African averages for low- and middle-income countries. This reflects an efficient network design that has given priority to connecting Dakar and other relatively large cities (with a population of 50,000 or more) to major ports as well as provincial capitals and cities (with populations of over 25,000).*

The study goes on to identify the major shortcoming of Senegal's road system:

> *The binding unavailability of resources for road works has been made more conspicuous by the ongoing overloading of trucks, which has contributed significantly to road*

[131] Economic and social situation, 2013 and ANSD, 2016

[132] World Bank Africa Region Sustainable Development Unit (Sept 2011) Senegal's Infrastructure: A Continental Perspective, Clemencia Torres, Cecilia M. Briceño-Garmendia, Carolina Dominguez

Text Box 9-1: Objectives and priorities of road infrastructure

The strategic objectives to be achieved are:

- intensify the road maintenance and preservation of road asset to maintain a level of service adapted to the flow of traffic;
- build a structured exchange network for a more balanced development of the territory and encourage the emergence of clusters of economic activities;
- opening up areas with high potential and facilitating people's access to basic social services through a network of rural roads and tracks and crossing structures;
- increase the attractiveness and competitiveness of the economy by building infrastructure (corridors) to the sub-regional market and boosting exchanges with the outside world;
- develop the motorway network to encourage the emergence of the country by allowing fast links to the main growth poles;
- developing transport services in a logic of modal complementarities in order to meet demand at the lowest cost and in total safety;
- improve urban mobility in Dakar and in major cities

The main priorities are:

- Priority 1: Program for the Conservation and Maintenance of Road Assets
- Priority 2: Road rehabilitation and road construction
- Priority 3: Construction of structures and bridges.
- Priority 4: Construction of highways
- Priority 5: Rehabilitation and construction of farm-to-market and feeder roads

deterioration, especially along the regional transport corridor from Dakar to Bamako. The lack of enforcement of weight controls along the road and the absence of formal agreements among the countries that utilize these corridors make it very difficult to distribute the costs of road rehabilitation and maintenance between national taxpayers and international truck operators. Achieving a consensus on how to distribute the costs and benefits of using this regional transport corridor is another critical element of the sector's policy agenda that has yet to be addressed.

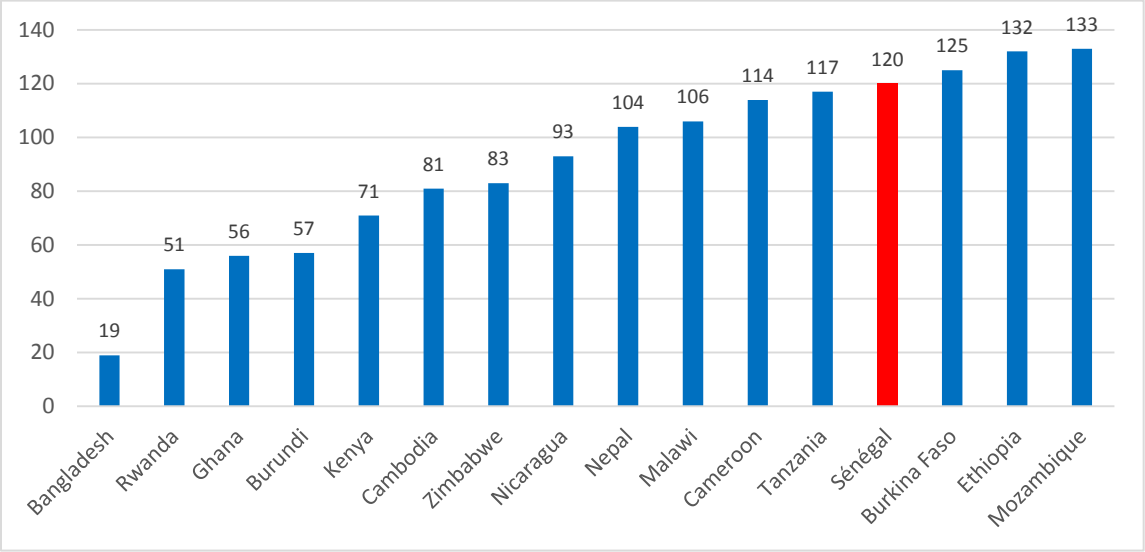
Contrary to the good record of the road network in providing national and regional connectivity, Senegal has complex issues to tackle regarding the provision of rural road accessibility. Overall, about one-third of Senegal's population lives within 2 km of an all-weather road—the same level as for all low-income countries (or somewhat more, depending on the indicator used) and below the level found in middle-income countries. But beyond the trunk network, accessibility falls off. The clustering of Senegal's population along the coast makes it comparatively difficult to achieve significant increases in rural accessibility by improving the quality of the existing rural network beyond this narrow band. Even though population density may be low in the remaining zones of the country, extending the rural road network remains a strong priority for the government because road density is one of the main determinants of cash income from agricultural sales in Senegal, along with agriculture yield, high-value crops, and direct selling to the market. Improving accessibility to roads in the more isolated rural regions is also important to strengthen their integration with the rest of the country.

Over the past decade, Senegal has made significant efforts to upgrade its infrastructure in order to promote both national and international private investment. In 2015, the classified road network is estimated at 15 000 km. Thirty five percent of the road network is paved (i.e. 5 300 km) and 65% is unpaved roads (9 700 km).

However, like most sub-Saharan African countries, it suffers from an infrastructure deficit despite the investment efforts in this sector. With a road density of 7.4 km per 100 km2, it occupies 120th

place in the World Economic Forum rankings in 2015 far below countries like Bangladesh or Rwanda.

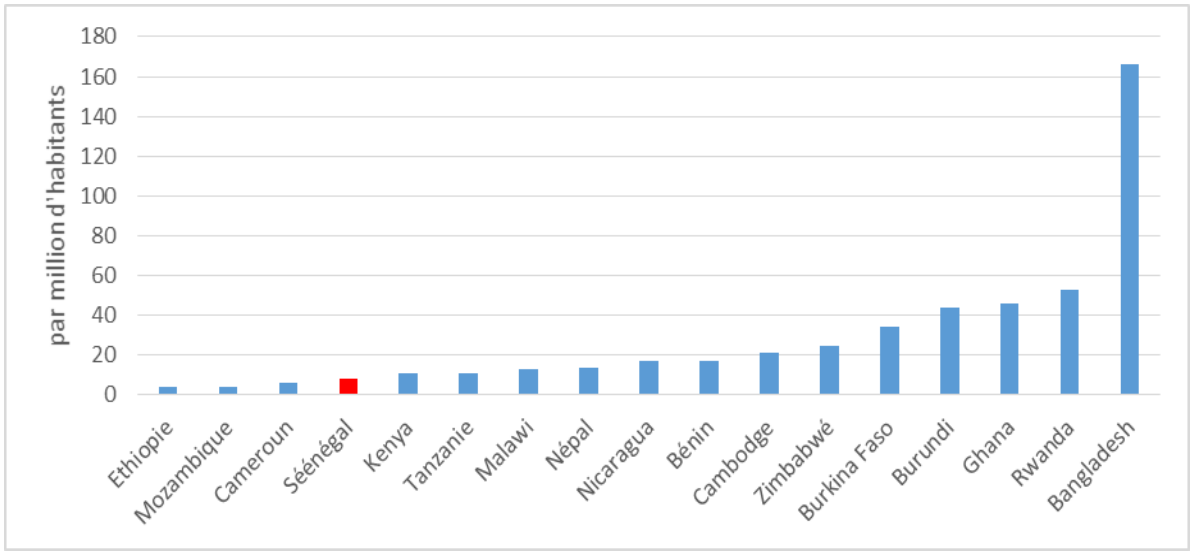
Figure 9- 2: Classification according to road density (Km / Surface)



Source: The Travel & Tourism Competitiveness, World Economic Forum, Report 2015

The analysis of road density relative to the population also shows the low level of linkages compared to the reference countries. The extension of the road network has not kept pace with the population growth.

Figure 9- 3: Road density in Senegal and comparator countries in 2013



Source: The Travel & Tourism Competitiveness, World Economic Forum, Report 2015
As a key factor in correcting large spatial imbalances, infrastructure linkage is essential to support production at the local level. Indeed, rural areas suffer from an isolation which reduces their

connectivity to different markets, thus creating obstacles to the exploitation of the enormous potentialities.

The survey carried out in 2009 to identify the geographical disparities in access to basic social services paints a picture that is not conducive to the development of entrepreneurship and private investment. The report of the survey carried out in 2009 shows a great disparity with much greater access to roads in the departments of Dakar, Thiès, Saint-Louis and Ziguinchor than in Linguère, Ranérou, Koumpentoum and Salémata which are less endowed.

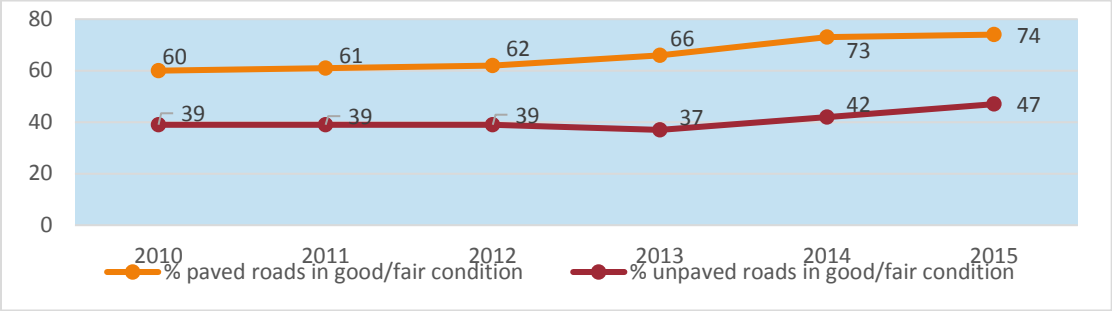
Various road construction and rehabilitation projects and programs have been implemented in recent years to reduce these disparities.

These are, among others the followings:

- The first MCC compact which enabled: (i) the rehabilitation of the Ziguinchor - Velingara road, (ii) the reconstruction of the Kolda bridge in southern Senegal, and the north (Iii) the rehabilitation and widening of the National Road N ° 2 from Richard Toll to N'Dioum, (iv) the construction of a new bridge at Ndioum and its access ramps, and (v) development of water resources in the Delta and the River Valley through the establishment of hydro-agricultural infrastructures to facilitate competitive agro-industrial production.
- The Community Development Emergency Program (PUDC), which aims to contribute to improving rural people's access to basic social services through the establishment of socio-economic infrastructures. For example, in the case of transport infrastructure, it is planned the construction and rehabilitation of 1650 km of rural roads in the most enclaved areas, including all sewage works.
- Programs initiated by Agéroute such as the Annual Road Maintenance Program (PERA).
- The Community Trails Project (PPC) of the National Program for Local Development (PNDL) with 1,206 km of feeder roads designed to contribute to the opening-up of the hinterland. [133].

Senegal's efforts made since 2000 have created a fairly satisfactory level of service on its roads, with 75% of the paved roads in good and/or fair condition and 47% of the un-paved roads in good and/or fair condition.

Figure 9- 4: Evolution of the level of service



Source: AGEROUTE, 2015

[133] Moctar SOW et al, Evaluation Report of the Programme national de Développement local (PNDL), 2011

Projects completed between 2012 and 2015 have resulted in 1145 km of paved roads and approximately 2091.9 km of feeder roads. The work carried out on the unpaved network has facilitated people's access to basic social services and the transport of agricultural, fisheries and pastoral products to major urban centers.

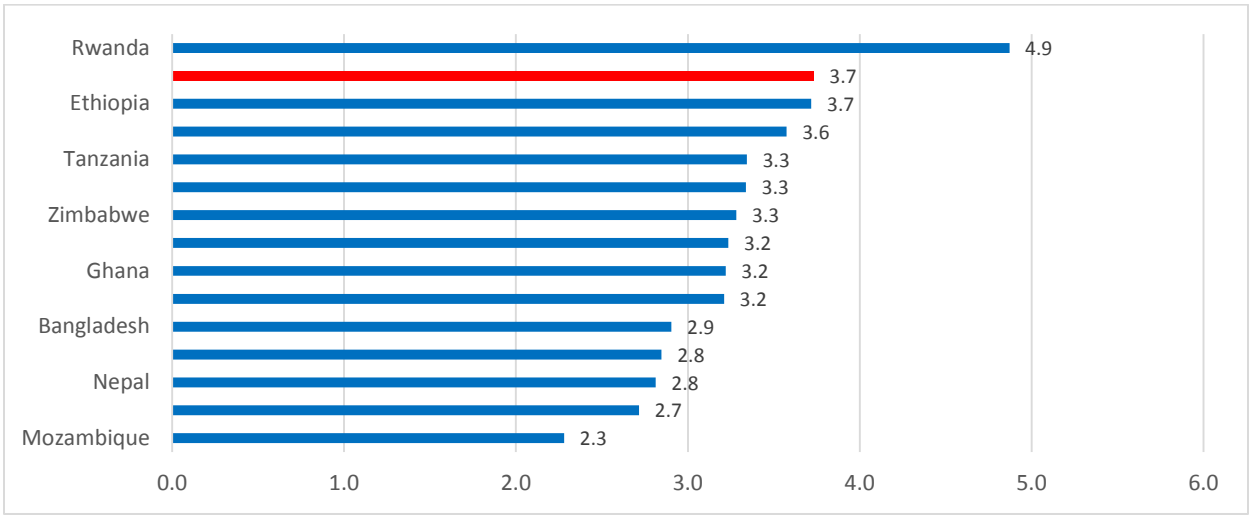
Table 9- 2: Infrastructure Road Projects completed in 2015

N°	PROJECT	LINEARE (KM)	COST (in Millions CFAF)	SOURCE OF FINANCING
1	Rehabilitation of the Tambacounda-Dialocotto road	65	16 600	BOAD /SENEGAL
2	Rehabilitation Ourossogui-Matam	10,6	1510	SENEGAL
3	Construction and Rehabilitation of roads in Tivaouane	16.7	2184	SENEGAL
4	Rehabilitation of the RN2: Richard Toll-Ndioum	120	27 529	MCC (USA)
5	Rehabilitation of the RN6: Tanaff-Kolda Section	72	22 578	MCC (USA)
6	Rehabilitation of the RN6: Kolda-Kounkané Section	93	21 753	MCC (USA)
7	Rehabilitation of Grande Niayes (Rufisque to Lompoul)	95	19 085	MCC (USA)
8	Reconstruction of the Kolda Bridge	0.91	3 344	MCC (USA)
9	Construction Ndioum Bridge	0.15	6 827	MCC (USA)
10	Extension of the VDN, Golf Club-Tivaouane Peulh	17.2	31 669	FKDEA / SENEGAL
11	Rehabilitation of the road Vélingara-Manda-Douane	38	12 682	SENEGAL
TOTAL PROJECTS COMPLETED IN 2015		527,5 Km RR & 1.06 Km bridges	165 761	

Source: Ministry of Infrastructures

This improvement in the level of service seems to be confirmed by the Global Competitiveness Report, 2016. The quality of the roads is satisfactory. Regarding the comparator countries, Senegal (78th) with 3.7 points is outranked only by Rwanda (37th).

Figure 9- 5: Quality of roads in Senegal and comparator countries, 2015



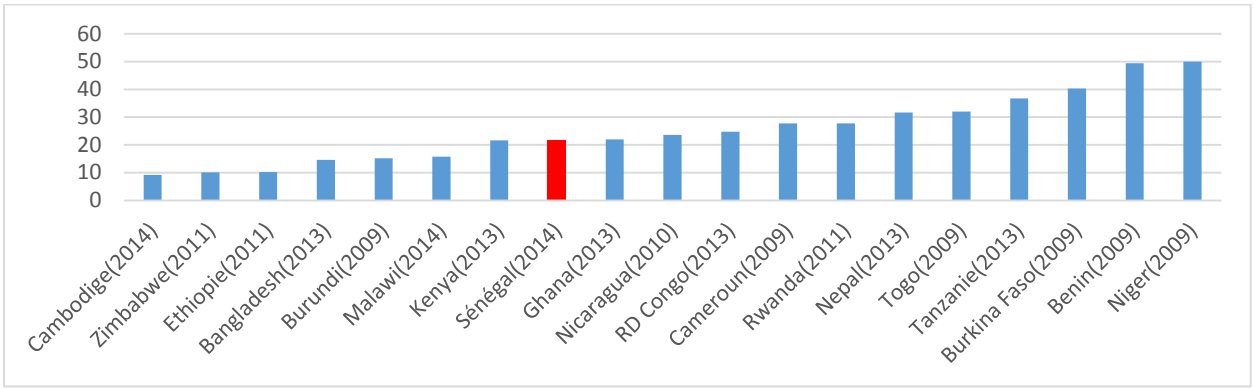
Source: Global Competitiveness Report, World Economic Forum, 2015-2016

Senegal has strengthened the institutional framework by setting up and operationalizing the Autonomous Road Maintenance Fund (FERA) and the Road Works and Management Agency (AGEROUTE). Nevertheless, road maintenance remains a major challenge in the same way as the creation of new roads and production of tracks.

The following obstacles are noted in the implementation of projects:
• Gap between the pace of work and the availability of financial resources
• Insufficient budgetary resources and scarcity of donor concessional resources
• Cumbersome procurement procedures that lead to delays in the start-up of projects.

According to a survey carried out by the World Bank, Senegal is at a median position for the "*percentage of companies identifying transport as a major constraint*", in front of its comparators with about 22% of firms (more than 1/5).

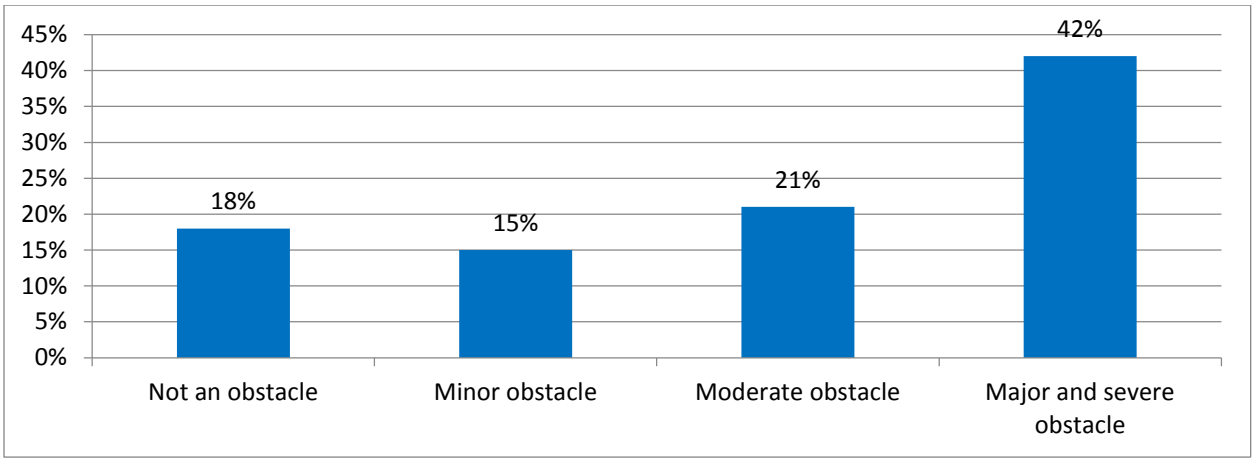
Figure 9- 6: Transport constraints in Senegal and comparator countries



Source: Enterprise Surveys and World Bank

This infrastructure constraint affects more medium-sized enterprises of which 27.6% identify the transport system as a major constraint on their activities.

Figure 9- 7: Percentage of companies identifying transportation as a major constraint



Source: Enterprise Surveys and World Bank

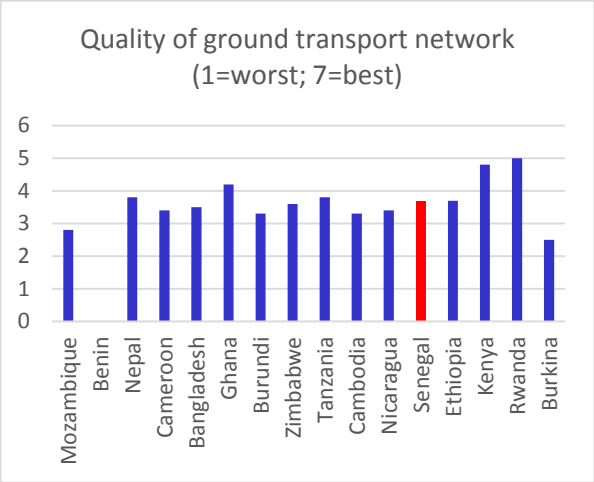
The government has undertaken extensive infrastructure work (construction and rehabilitation of roads and bridges, establishment of bus stations, development of corridors to Mali and Guinea) and initiated programs for the renewal and modernization of the urban transport fleet and Intercity. However, road transport still faces, among other things, a weak regulatory framework, a lack of regular maintenance, an unevenly distributed and degraded network, an inadequate supply of urban public transport services and a dilapidated fleet. The prospects for the rehabilitation of the infrastructures of this axis and the implementation of the Regional Express Train (TER) will also contribute to the development of the strategic objectives of the PSE, namely the development of an integrated multimodal transport network and infrastructure integrated to the sub-region market in order to stimulate trade with the outside world.

Though Senegal has fewer roads per km in terms of surface area, this can be explained by the fact that Senegal has a relatively sparse population which is primarily concentrated in the northern and western areas. However, since roads are clustered in the western and urban areas, there are significant regional disparities in access to roads, which translates to highly differential access to services. The percentage of the population living within 5km of a primary road varies between 12% in Kédougou to 98% in Dakar. In 2004, 62.5% of the rural population in Senegal lived within 5km of an all-weather road. As of 2015, 50% of all land area in Senegal is within 5km of a primary road.[134]

[134] Data from AGEROUTE 2015

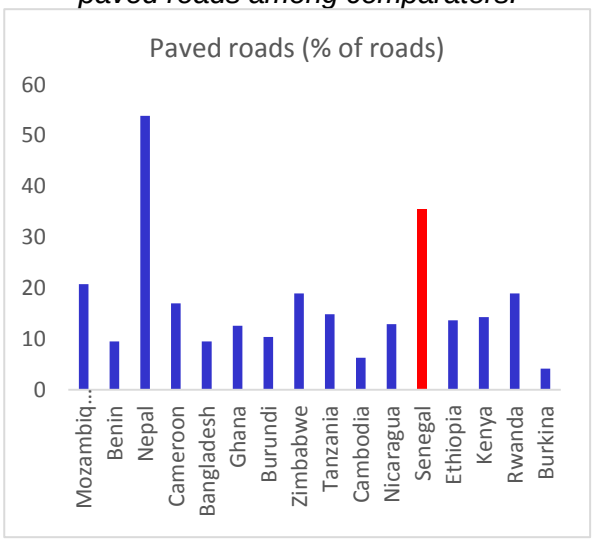
Figure 9- 8: Roads quantity and quality indicators

Executive Opinion Surveys by the WEF ranks Senegal relatively well against comparators in terms of the overall adequacy and quality of the road network.



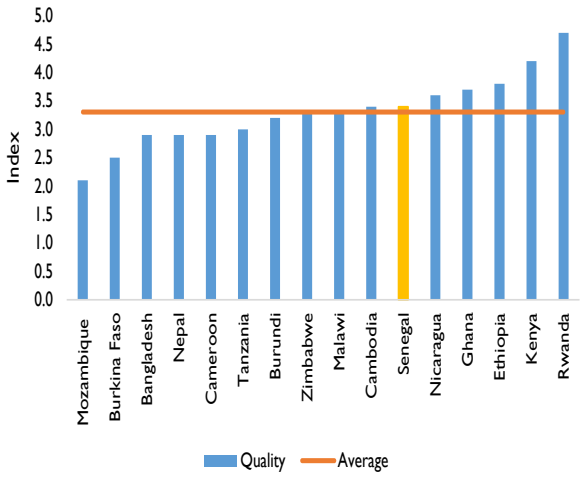
Source: WEF Trade & Tourism Competitiveness Report 2014

Senegal has the second highest proportion of paved roads among comparators.

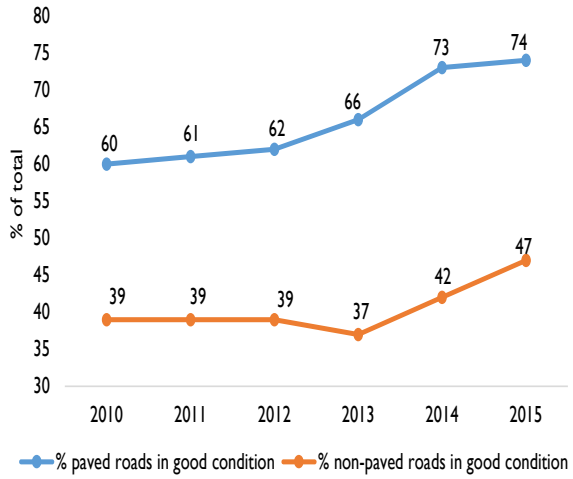


Source: WEF Global Enabling Trade Report 2014

The overall index of transport and commerce infrastructure is average.

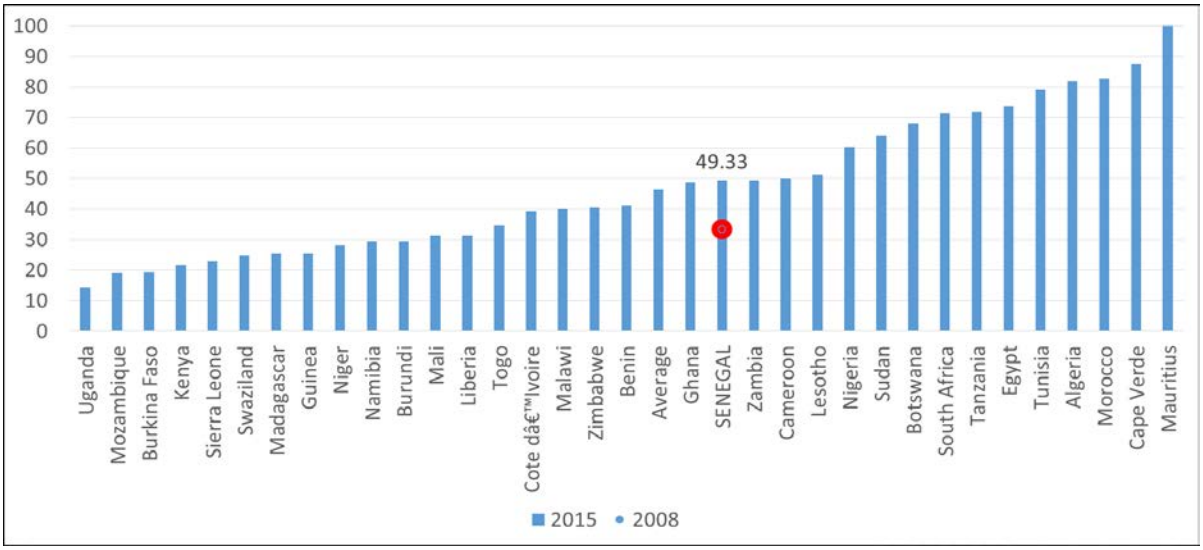


Quality of the road network has improved in recent years.



Expansion of access to rural roads increased from 41% to 49% in 2008-2015, placing Senegal's primary road access around the median for comparators.

Figure 9- 9: % of Afrobarometer enumerations areas with a paved road



Source: Afrobarometer 2008, 2015

Data on road density and road service from Ageroute suggest that issues related to transport access are more serious for urban areas outside of Dakar. Table 6 below shows road density by sub-region and demonstrates that while road density per km^2 is low outside of Dakar, road density by population is significantly higher.

Table 9- 3: Road network indicators by area, 2015

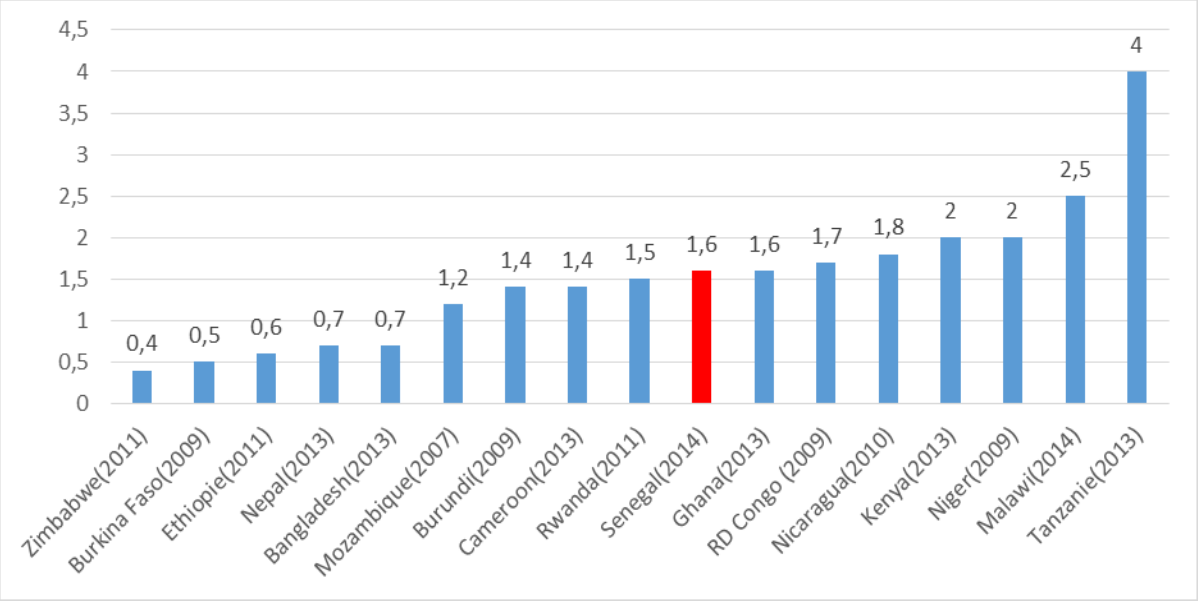
	km of paved road	km of unpaved road	Population	Surface area (km^2)	Density (km/km^2)	Density (km/1000 hbts)	% within 5km of principal road
Tambacounda	570.2	2256.8	649,654	42,564	0.07	4.35	17%
Kédougou	208	772.5	152,134	16,911	0.06	6.44	12%
kaffrine	223.9	715	544,011	11,263	0.08	1.73	19%
Kaolack	306.8	454.3	918,355	5,357	0.14	0.83	35%
Fatick	396.8	415.6	684,652	6,849	0.12	1.19	32%
Ziguinchor	441	649.8	523,840	7,352	0.15	2.08	35%
Kolda	376.8	954.4	633,675	13,771	0.1	2.1	22%
Sédhiou	288.31	721.7	434,877	7,341	0.14	2.32	26%

Saint-Louis	362.33	685.9	870,629	19,241	0.05	1.2	44%
Matam	389.25	836	541,032	29,445	0.04	2.26	30%
Louga	622.01	976.5	835,325	24,889	0.06	1.91	29%
Diourbel	558	380	1,420,082	4,824	0.19	0.66	36%
Thiès	708.61	318.4	1,709,112	6,670	0.15	0.6	58%
Dakar	454.9	12.4	2,959,023	547	0.85	0.16	98%

Source: AGEROUTE, 2016

The shadow cost of road transport is captured here by the percentage of product that deteriorates during transport to domestic markets. The poor quality of the roads results in losses to businesses estimated at almost 2% of the products passing through. This deterioration rate does not indicate that the quality of infrastructure is a constraint among comparator countries.

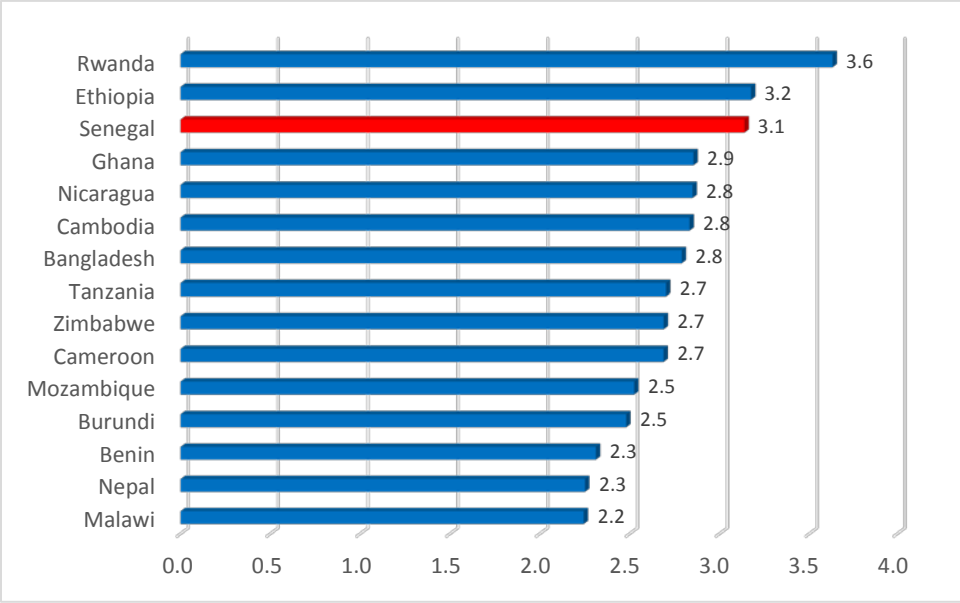
Figure 9- 10: Proportion of products lost/deteriorated during transport to domestic markets (%)



Source: Global Competitiveness Report, World Economic Forum, 2015-2016

The World Economic Forum's report draws the same conclusion by ranking Senegal just behind Rwanda and Ethiopia.

Figure 9- 11: Quality of transport infrastructure in Senegal and comparator countries in 2015

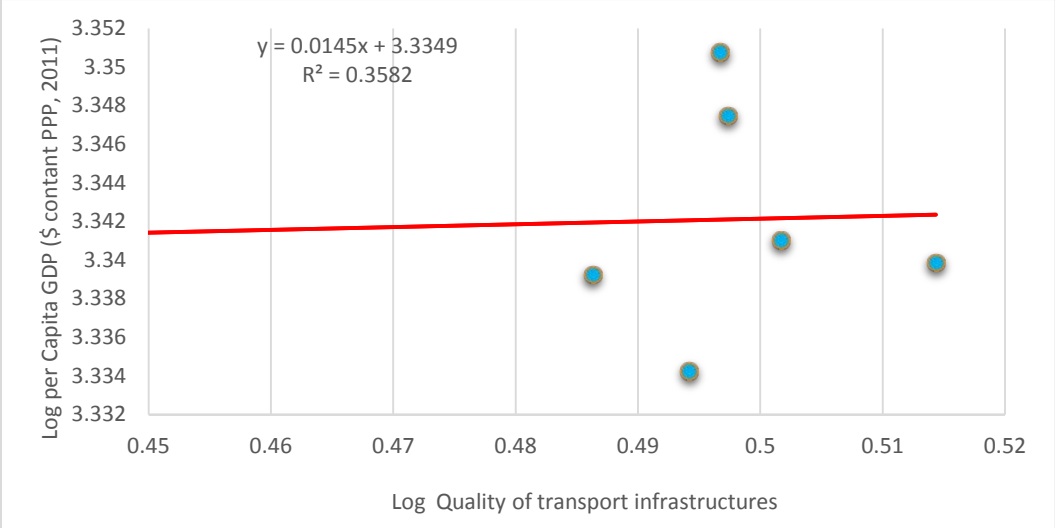


Source: Global Competitiveness Report, World Economic Forum, 2015-2016

The quality of transport infrastructure seems not to be a major obstacle in terms of Senegal's position, and it is outranked only by the comparator countries of Rwanda and Ethiopia.

The quality of infrastructures contributes to the creation of an enabling environment for the creation of wealth and thus to the improvement of the level of development of a country. The test carried out indicates that there is a positive relation between the two variables even if it is weak.

Figure 9- 12: Correlation between transport infrastructure quality and Per Capita GDP



Source: WEF and WDI

The inadequacy of the time series relative to the quality of the infrastructures did not make it possible to determine the correlation with the level of development of the country.

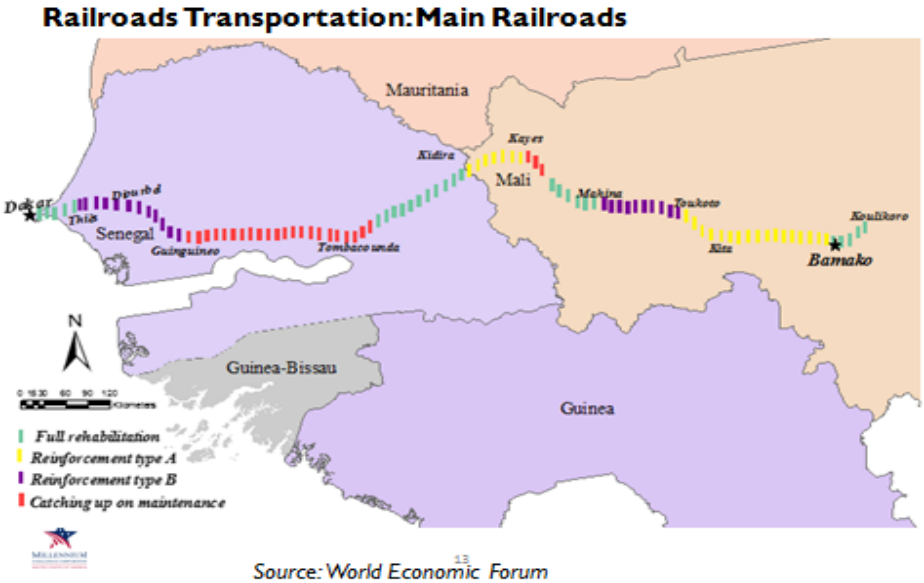
In Senegal, roads become impracticable in some parts of the territory during the rainy season. This makes it difficult for producers and other development actors to rally markets. Transportation costs during this period are exorbitant. Also, the actors make their arrangements to buy on time what they need before the rainy season. They use rudimentary means such as carts and bicycles to transport people and goods.

Moreover, given the difficulties encountered some passengers prefer to travel from Dakar to Ziguinchor by boat. Indeed, the road is bumpy in some places and the ferry crossing of the River Gambia at Farrafenni is difficult. It should be noted that sea, river and air transport are not yet alternatives to road transport.

Wholesalers and retailers in agriculture who use roads frequently suffer from the deterioration of transport routes. Indeed, the low quality of the transport infrastructure results in a serious deterioration of shipped products/goods. The service sector with less demanding use of roads is developing despite the quality of infrastructure.

Railroads Transportation
The railway is a more than appropriate option for the transport of goods and raw materials, particularly on the Dakar-Bamako (Mali) axis, which provides access to the West African sub-region.

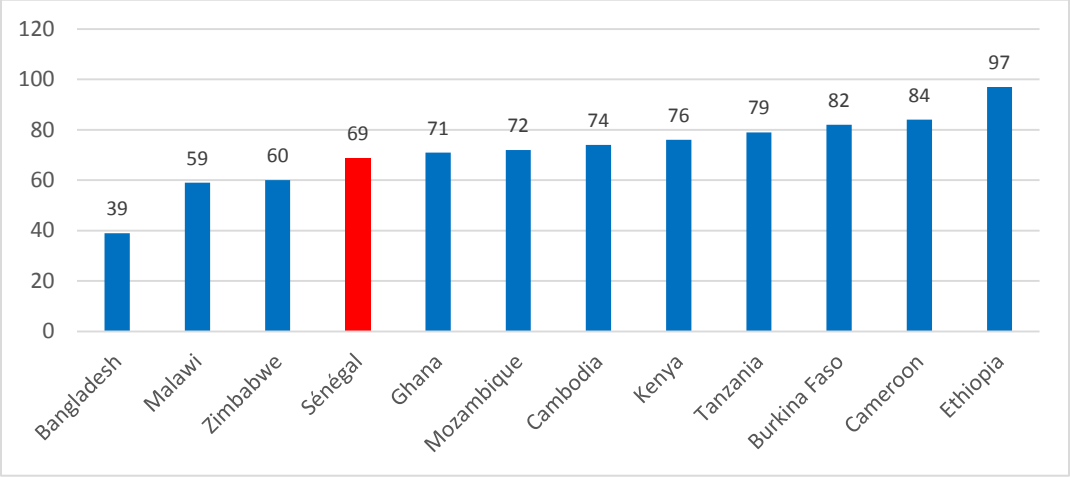
Figure 9- 13: Main Railroads Transportation



Railroads transportation is managed by two entities. On the one hand, TRANSRAIL manages the international transport of goods on the Dakar-Bamako line and, on the other hand, the Petit Train de Banlieue provides service to Dakar and its suburbs. However, it should be noted that since December 2015, TRANSRAIL no longer manages this traffic which has been entrusted to a temporary management body.

The analysis of this sector will be limited to the benchmark of the number of km of the railway network and its quality, due to lack of data on the transport of goods and people for Senegal in recent years.

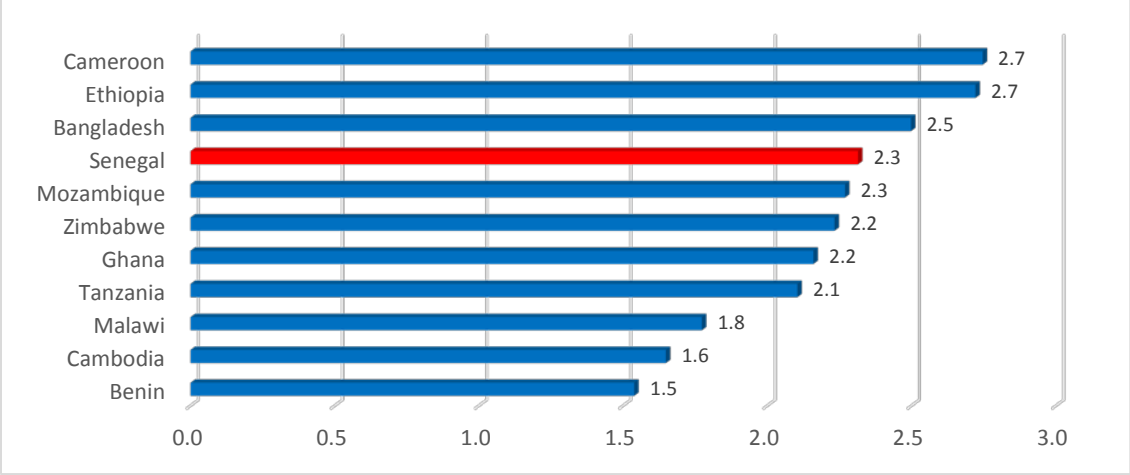
Figure 9- 14: Classification according to the density of the railway line



Source: The Travel & Tourism Competitiveness, World Economic Forum, Report 2015

Though well placed compared to the comparator countries, the fact remains that the railway network in Senegal is far from satisfying the demand for transport of people and goods.

Figure 9- 15: Quality of Railway infrastructure



Source: Global Competitiveness Report, World Economic Forum, 2015-2016

Obstacles to the development of the railway network include:

- The scarcity of financial resources combined with the costly nature of railway projects.
- The quasi abandonment of the railway policy by the government during the decade 2003 to 2012, with the unsuccessful choice of the full concession of the railway activity on the main Dakar-Bamako axis
- An anarchic and illegal occupation of the railway rights-of-way, the releases of which will certainly be costly in financial terms
- Insufficient human resources in the field of railway trades.

The obsolescence of railways and rolling stock is a major handicap for the business environment. If they were efficiently rehabilitated, the railways will not only improve transport supply between Dakar and Bamako (the main recipient of exports), but also serve other parts of the country, boost economic activities and improve attractiveness.

Text Box 9-2: Activities under the new railway policy

- Establishment of management bodies and continued capacity building of ANCF agents, as soon as the decree on the organization and functioning of the Agency is adopted;
- Launch of the action plan to implement the reform of the Dakar-Bamako railway concession;
- Preparation of the study updating the Master Plan for the development of railways in Senegal, taking into account regional integration policies;
- Implementation of activities related to railway development programs in close collaboration with relevant actors (TER, WAEMU, ECOWAS, NEPAD, OIC);
- Strengthening of international railway cooperation in order to benefit from feedback;
- Development of national railway expertise and improvement of sub-sector governance.

The prospects for the rehabilitation of the Dakar-Bamako axis, the implementation of the Regional Express Train (TER Dakar-AIBD) and the Bus Rapid Transit (BRT) project will contribute to the development of an integrated transport network and infrastructure linked to the sub-regional market in order to facilitate exchanges with the outside world.

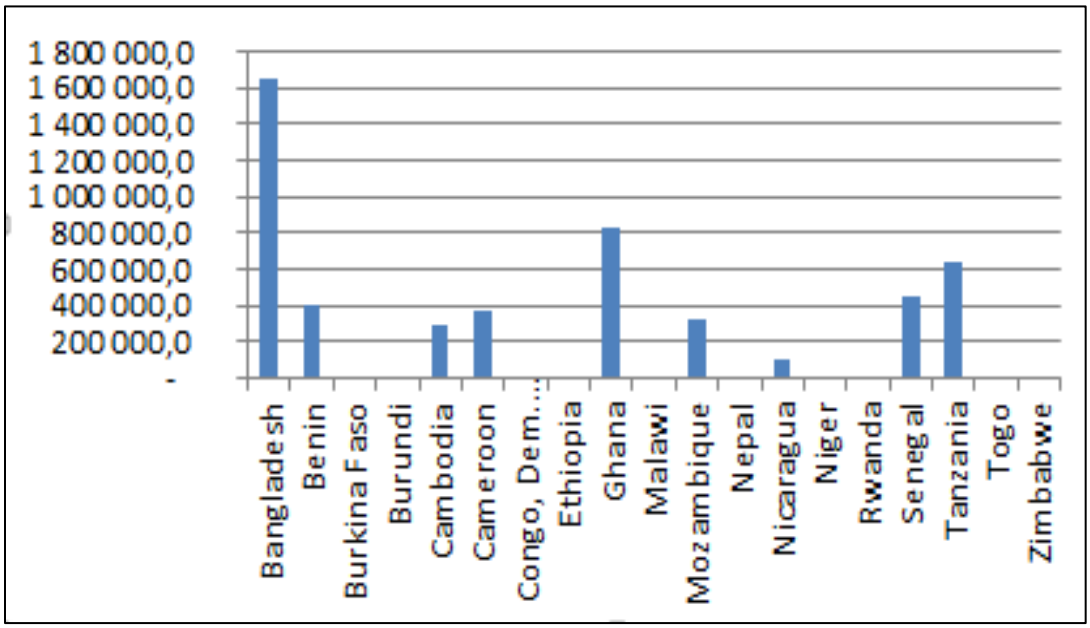
Maritime Transport

Senegal's economy is heavily dependent on the maritime transport sector. In fact, 95% of trade is by sea. Senegal has a main port (Autonomous Port of Dakar) which concentrates most of the traffic, and the secondary ports of Ziguinchor, St Louis, and Kaolack.

Between 2010 and 2013, maritime freight increased. Overall traffic increased by 18.95% from 10,271 tons in 2010 to 12,217,987 tons in 2013. Nevertheless, it should be noted that despite

these upward trends and its proximity to the large markets via the Atlantic Ocean (Europe and the Americas), Senegal has a relatively low level of container traffic.

Figure 9- 16: Container traffic in ports in Senegal and comparator countries in 2014

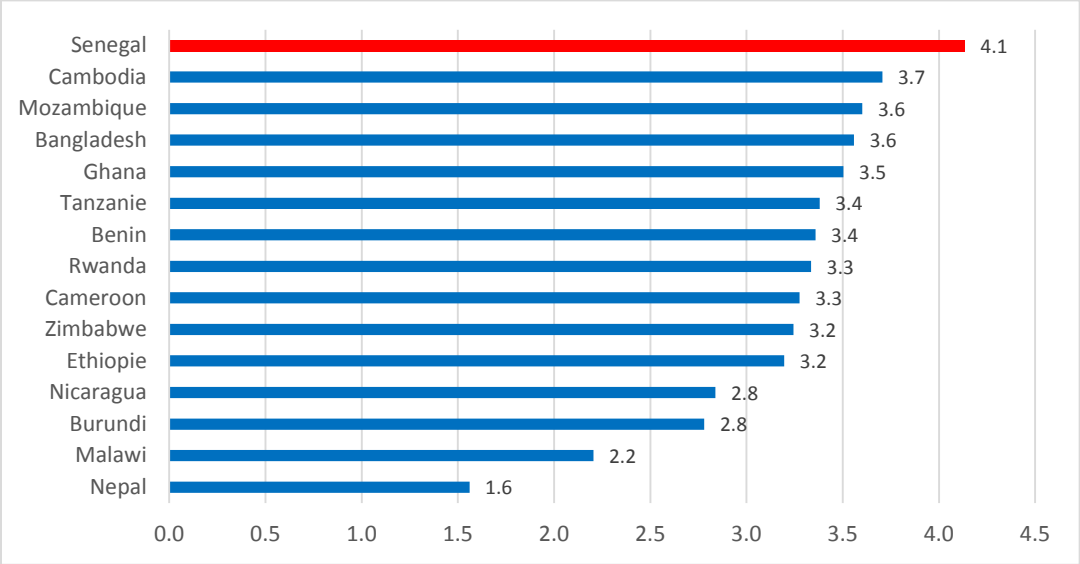


Source: WDI (2014)

Compared with other countries, port traffic in Senegal is relatively low. By 2014, Bangladesh, Ghana and Tanzania have largely dominated Senegal as regards container traffic. However, compared with the countries of the sub-region, Senegal occupies an excellent position compared to WAEMU countries

The quality of port infrastructure is a key indicator of port assessments. Compared to comparator countries, Senegal has a good infrastructure. A major modernization program based on the concession to the Dubai Port World Company of the Container Terminal has promoted a significant investment in the improvement of logistics activities for the benefit of economic operators.

Figure 9- 17: Port infrastructure quality



Source: Global Competitiveness Report, World Economic Forum, 2015-2016

Port activities are mainly concentrated in Dakar, where there is an upward trend in freight traffic from 2010 to 2013. Total landing, total boarding, and total traffic have increased from 8,121, 2,150 and 10,271 respectively to 9,501, 2,717 and 12,218 during this period.

Figure 9- 18: Trends in freight traffic in the Dakar Autonomous Port (in 000 of tons)

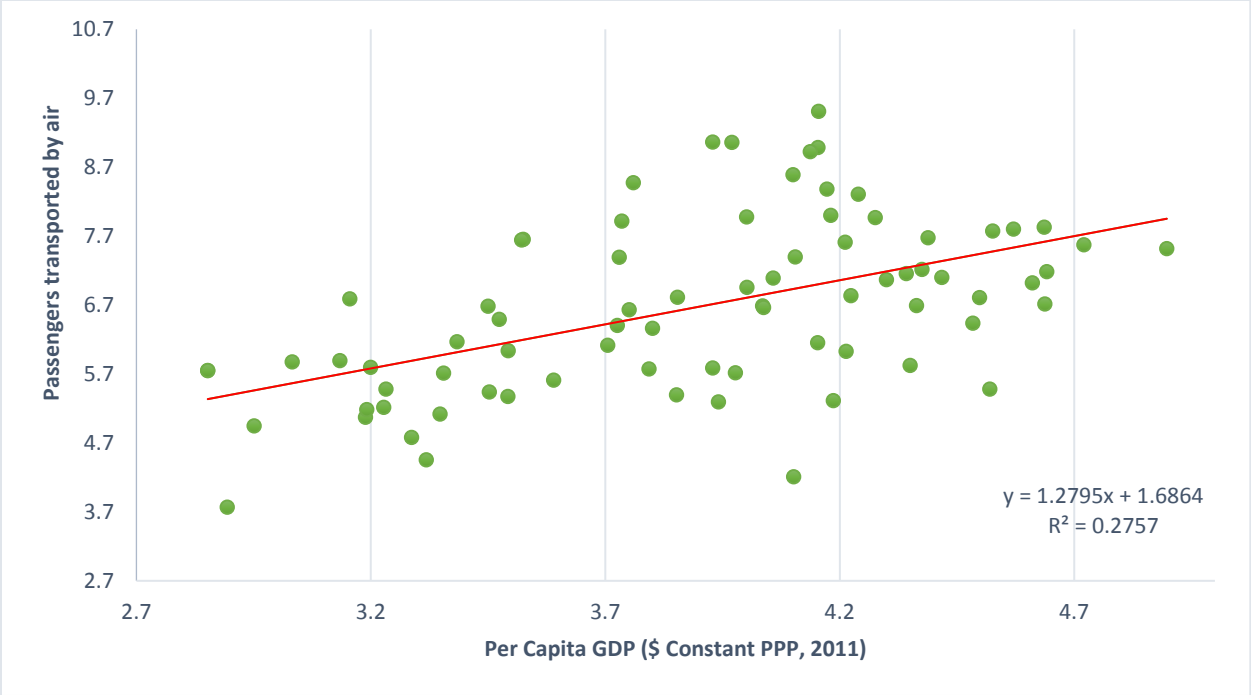
Source: Port Autonome de Dakar

Senegal's main secondary ports of Saint-Louis, Ziguinchor and Kaolack are characterized by a low level of activities. River transport, especially on the Senegal River, is severely limited by obstacles such as silting and lack of drainage, etc.

Air Transport

Senegal has four international airports (Dakar, Saint Louis, Ziguinchor and Cap Skiring) and some regional airports. Dakar Leopold Sédar Senghor International Airport concentrates 91.0% of aircraft movements, 96.6% of passenger movements and 97.9% of freight. [135] To cope with the increase in air passenger and freight traffic and improve the quality of service, the Blaise Diagne International Airport located in Diass will soon be opened. Due to its strategic position, Senegal is served by the largest airlines with both direct and indirect links.

Figure 9- 19: Passengers transported via air as % of GDP ($ constant PPP, 2011) in 2014



Source: WDI

With 131,966 passengers transported by air in 2014 (figure above), Senegal is below most of its comparator countries which on average serve 1,182,021 passengers. The situation remains the same for freight transport.

The analysis of the above figure shows the weakness of the freight sector compared to the comparator countries. However, a dynamic growth has been observed since 2010.

[135] Source : SES 2013-2014, ANSD

Figure 9- 20: National air traffic over the period 2006-2013

Source : WEF, the travel & tourism competitiveness report 2015

Despite these advances, it should be noted that freight transported by air remains low given its level of development as Senegal is less well positioned than most of its comparators.

Overall, air transport indicators show that Senegal performs well in comparison with its comparators. It remains well ranked by the World Economic Forum (WEF) in terms of air transport infrastructure. Regarding the number of seat-kilometers per week on international flights, it exceeds all its comparators with the exception of Ghana, Kenya, Ethiopia, Nepal and Bangladesh. This performance could be explained by the geographical position of Senegal and the dynamism of its tourism sector which recorded for the first time in 2012 more than one billion international arrivals of tourists. [136]

[136] World Tourism Organization

Table 9- 4: Air transport indicators in Senegal and comparator countries, 2015

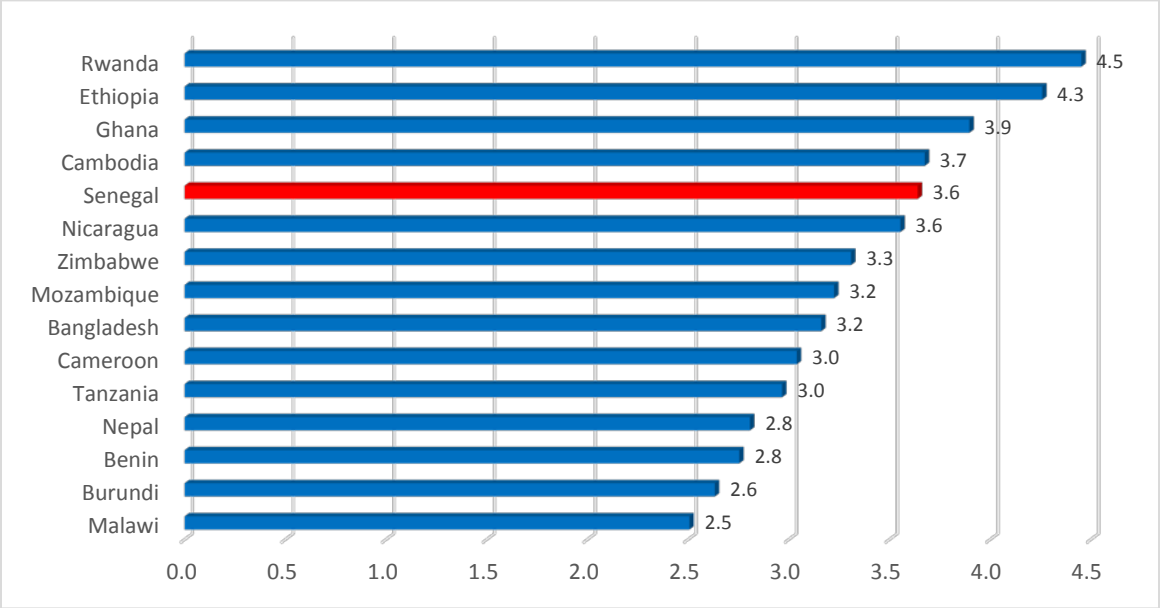
	Air transport infrastructure	International Company[137]	Departure for 1000 pop.	Number of companies operating
Senegal	2	101,5	0,5	31
Bangladesh	1.9	236,2	0,2	30
Burkina Faso	1.6	16	0,2	11
Burundi	1.6	1,9	na	7
Cambodia	2.1	92,1	0,7	35
Cameroun	1.8	48,3	0,3	23,0
Ethiopia	2,3	279,3	0,7	11
Ghana	2,1	106,4	0,7	30
Kenya	2,6	274,6	1,7	35
Malawi	1,5	9,1	0,1	5
Mozambique	1,8	19,6	0,6	10
Nepal	2,1	104,7	1	28
Nicaragua	1,9	18,4	n/a	14
Rwanda	1,8	19,8	0,9	6
Tanzania	1,9	79,9	0,7	33,0
Zimbabwe	1,8	15,8	0,8	16

Source : WEF, the travel & tourism competitiveness report 2015

Senegal's position vis-à-vis the comparator countries does not seem to indicate that airport infrastructures are a constraint. However, Senegal will have to face certain challenges, such as the construction of airport infrastructures conforming to international standards and the installation of the latest generation of air navigation equipment.

[137]International lines expressed in Seats-km per week (in millions)

Figure 9- 21: Quality of airport infrastructures



Source: Global Competitiveness Report, World Economic Forum, 2015-2016

CHAPTER 10: ARE MACROECONOMIC RISKS BINDING?

Poor macroeconomic policies can constrain growth through two broad channels. Macroeconomic distortions can constrain economic growth where macroeconomic policies reduce the current profitability of private investment. Excessive budget deficits, for example, require large amounts of government borrowing, and this drives up the real interest rate and crowds out private investment. Macroeconomic policies that result in an overvalued exchange rate reduce the profitability of exporting and of producing goods and services that compete with imports. In contrast, macroeconomic risks arise when government policies and external events combine to create a growing likelihood that the economy will suffer a macroeconomic crisis in the future. Where such future risks are significant, they tend to discourage investment in the present, as potential investors worry that their money will be lost to a burst of rapid inflation, sudden devaluation, financial crisis, or other symptom of macroeconomic crisis. In a situation where such distortions and risks are sufficiently serious, they can pose a binding constraint to economic growth.

10. 1 SUMMARY ANALYSIS

The macroeconomic situation of Senegal shows some stability since the devaluation of the FCFA in 1994. Senegal has strengthened its positive macroeconomic position in recent years with the implementation of a series of economic and financial reforms supported by the International Monetary Fund (IMF). Through these programs, Senegal was able to strengthen its budget expenditure, debt relief, and debt cancellation occurred in 2004 and 2005.

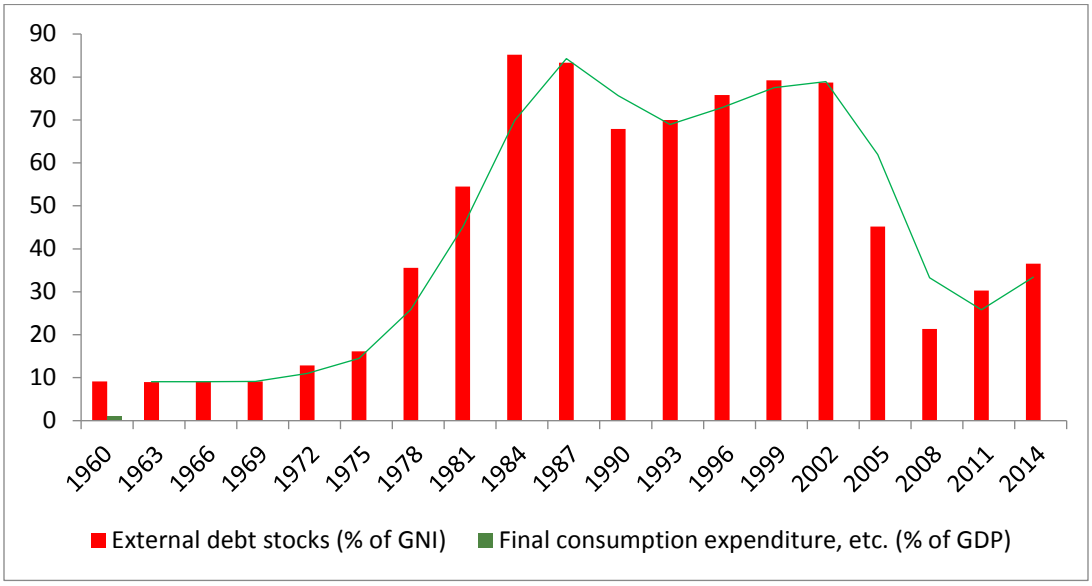
Based on this analysis, macroeconomic risks and distortions clearly do not pose binding constraint to economic growth in Senegal. All indicators suggest the GOS is in a good macroeconomic and fiscal position. Senegal's debt is moderate relative to GDP, although it is growing. Inflation is relatively stable, and the GOS is building adequate reserves to maintain monetary soundness and cover its trade deficit. The rising level of debt and the low levels of GDP growth in recent years raise concerns about medium-term stability, but this does not rise to the level of binding. The inflation is stable, the budget deficit is under control, and the expenditure-revenue ratio is below the average compared to countries with the same levels of income. The debt stocks is sustainable but has resumed the increasing trend after the 2004-2005 debt forgiveness initiatives.

10.2 BACKGROUND AND BENCHMARKING

Overview of Macroeconomic Situation for 1960-1970 Period

Since Senegal's Independence in 1960 until the early 1980s, the macroeconomic policy was marked by a rather strong state intervention in the productive sector, particularly in terms of support to the producer. Indeed, the government embarked on a series of four-year development plans which were very costly in terms of public resources. The fourth and fifth plans included: (ii) increasing agricultural productivity, production and marketing in rainfed areas and irrigation, and (ii) expanding the broader public sector to stimulate new industries and take control at the national level of companies with foreign capital.

Figure 10- 1: Final Consumption Expenditure (% of GDP) and External Debt Stocks (% of GNI)



Source: World Development Indicators

This strong presence of the State led to a considerable increase in public expenditure, which was particularly accentuated at the end of the 1970s, combined with a slowdown in tax revenues, a large part of which came from a reduced number of raw materials (Groundnut and phosphate), which is subject to high volatility due to wide fluctuations in world markets.

As a result, the government deficit averaged 12% of GDP over the period, with a payroll of about 50% of tax revenues. Public debt servicing in relation to tax revenues was about 30% with an external part whose stock turns around 50% of GDP in 1981 (Chart 1). Inflation was about 9% on average and the trade deficit was over 20% of GDP.

The macroeconomic policy of the late 1970s led to a displacement of public investment in favor of social uses intended to extend public control over the economy and above all to support domestic final consumption (Figure 10-1), affected by the weakness of rural incomes due to poor harvests. The Senegalese economy experienced a severe drought in 1977/78, followed by two poor harvests of groundnuts in 1979/80 and 1980/81, combined with an increase in the price of oil in 1979 Economic growth was therefore very low over the period 1975-1980, averaging 0.6 per cent against 1.9 per cent between 1970 and 1975, according to data from the World Bank. [138]

From the above description it can be concluded that the macroeconomic situation affected economic growth during that period.

Macroeconomic policies from 1980 to 1993

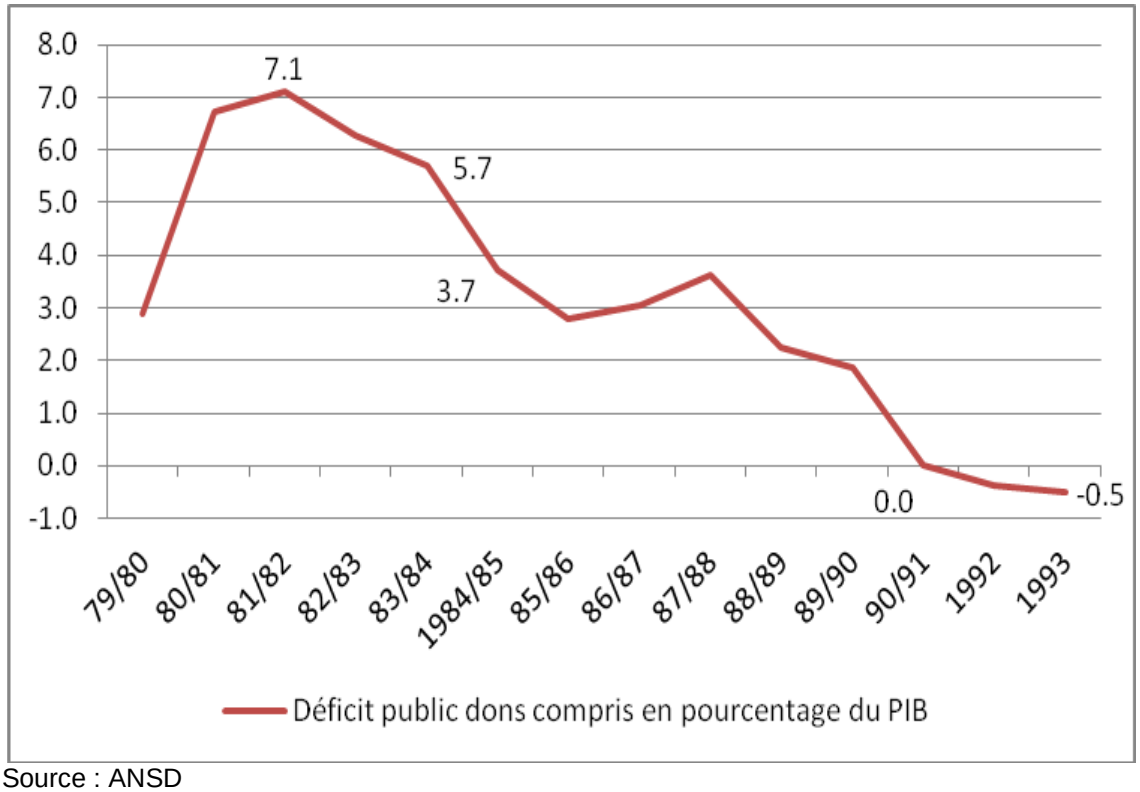
To stem the macroeconomic imbalances which marked the end of the 1980s, Senegal began in 1979 a structural adjustment process under programs designed with the support of the Bretton Woods institutions. The fundamental objectives assigned to these programs were the restoration

[138] World Bank Economic Memorandum dated November 5, 1984

of the major balances, the control of inflation and the achievement of sound and sustainable economic growth.

In the area of public finances, the objective of the macroeconomic policy over the period 1980-1993 was the gradual elimination of the budget deficit, notably by reducing expenditure such as the wage bill with a view to generating public savings that could finance investments. It was successively marked by (i) a stabilization phase from 1979 to 1980; (Ii) an extended Facility Agreement (1980-1981); (iii) stand-by agreements (1982-1984); and, (iv) the medium- and long-term adjustment program (1985-1991).

Figure 10- 2: Evolution of the budget deficit (as% of GDP) [139]



Source : ANSD

The **stabilization phase from 1979 to 1984** started with the short-term stabilization program over the period (1979-80), considered as an emergency plan to stabilize the deterioration of macroeconomic aggregates. Although the deficit was reduced to an average of 6.7% of GDP, the decline in economic activity led to an increase in inflation to 37%. In addition, the State accumulated internal and external arrears, valued at 10.4 billion and the ratio of wage bill to tax revenue, deteriorated to 60% against 50% on average over the previous period.

[139] The budget year ranged from July 1st June 30th in year 1

The stabilization program was subsequently pursued by a series of stand-by agreements, the first of which was signed in 1981, followed by three other stand-by agreements until 1985. [140] On the whole, these stand-by agreements were completed with the exception of the 1982 one, where inflation stood at 17.4%, current account deficits at around 7% of GDP and 9, 9% of GDP.
Overall, the results were mixed over the 1981-85 period as average annual GDP growth stood at 2.9%, slightly above the estimated 2.7% population growth, A trend strongly marked by the erratic behavior of climatic conditions but inflation remained high (11.7% on average). In terms of public finances, the government deficit was estimated at 5.5% of GDP on average and the payroll represented about 60% of tax revenues. The current account deficit averaged 11.3% of GDP.

Finally, the **medium- and long-term adjustment programs (1985-1991)** were marked by the preparation of a framework document for economic and financial policy submitted to the Consultative Group for Senegal in December 1986, marking a break in The approach to adjustment. Indeed, this program, called to maintain the gains achieved in the reduction of demand, focused on the promotion of exports and the implementation of sectoral policies. It was in this context that the New Industrial Policies (NPIs) were adopted in July 1986, the state's withdrawal from trading activities in 1987 and a new approach to investment. Also, the industrial incentive system was revised to make the sector more competitive in domestic and foreign markets.

In terms of results, this adjustment program led in 1988 to an improvement in public finances with the reduction of the public deficit to 1.5% of GDP and the stock of arrears of payment of 28 billion, i.e. 1.9% Of GDP. From November 1988 to January 1992, the program was strengthened with the conclusion with the IMF of an Enhanced Structural Adjustment Facility (ESAF I) agreement.

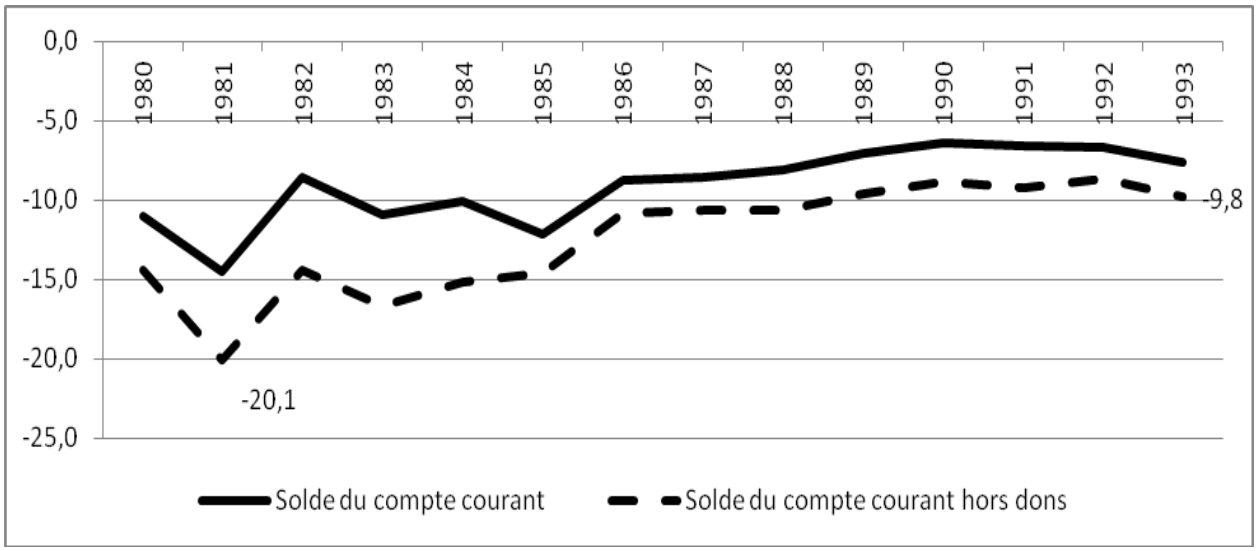
In 1992, serious financial policy slippages, linked in particular to a 21.1% increase in the wage bill in the context of a 6.4% fall in tax revenues, led to a budget deficit of around 3% of GDP, Which was financed by an accumulation of domestic and foreign payment arrears estimated at 3.4% of GDP.

Current account and external debt

After a deterioration between 1980 and 1981, the current account deficit improved gradually from 20.1% to 9.8% in 1993 (Figure 10-3). This improvement in the current account balance is mainly due to the fall in prices, which since 1986 has been affecting the main import products rice and petroleum products and import cuts in relation to the decline in Investment (the rate of investment declined on average by about 6%).

[140] The purpose of IMF stand-by agreements is to help countries overcome temporary balance of payments difficulties. Disbursements are conditional upon the achievement of the program's objectives ("conditionality"). Their duration is generally 12 to 24 months and repayment is normally between 3 and 5 years.

Figure 10- 3: Evolution of the current account between 1980 and 1993



Source: BCEAO

In conclusion, it should be noted that, overall, the annual growth rate recorded during the period 1980-1993 averaged 2.4% against a population growth rate of 2.7%. This weakness is partly explained by the contraction in demand arising from the adjustment policy, particularly over the period 1985-1991. Moreover, despite the relatively high level of public deficits (3% of GDP) and external deficit (6.7% of GDP), elements of precariousness led to the breakdown of relations with the Breton-Woods institutions in 1992 -93. All these difficulties led the Government in August 1993 to draw up an Emergency Plan, commonly known as the *Sakho-Loum Plan*. In January 1994, the devaluation of the CFA franc led to an improvement in the external competitiveness of the economy.

Macroeconomic Policies from 1994 to 2014

Fiscal policy in the aftermath of the devaluation was very conservative in order to consolidate public finances, guaranteeing macroeconomic stability. Thus, following the change in parity, the Government had immediately implemented a program of macroeconomic adjustment and structural reforms. This program was supported by the International Monetary Fund (IMF) under a three-year arrangement (1994-1997). A second arrangement of the Enhanced Structural Adjustment Facility (ESAF II) for a period of three years (1998-2000) was subsequently approved.

After the transitional years 2000 and 2001 characterized by the completion of the Enhanced Structural Adjustment Facility (ESAF II), Senegal committed itself to achieving the poverty reduction objectives which it clearly reflected in the Document Poverty Reduction Strategy (PRSP), developed through a broadly participatory process. This PRSP was adopted in December 2002 by the Boards of the IMF and the World Bank and endorsed by the donor community at the Consultative Group meeting held in Paris on 12-13 June 2003.

To achieve the objectives set out in the PRSP, the Government designed an economic and financial program for the period 2003-05, known as the PRGF, which focused on poverty reduction and laid the foundation for healthy and sustainable growth. The assessment of the 2003-2005 PRGF in mid-2006 showed that Senegal achieved substantial economic progress with long-term macroeconomic stability, a lack of IMF financial resource requirements, and a commitment to Policies and accelerated structural reforms. At the end of the last PRGF, the Instrument for Supporting Economic Policy (PSI) was signed in 2007. The results for fiscal policies in the context of these macroeconomic policies are presented in the following sections.

Fiscal Balance and Public Debt

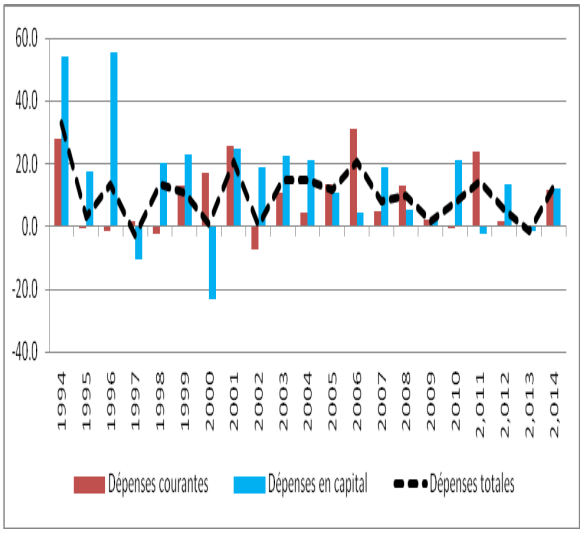
During this period from 1994 to 2000, the consolidation of the public finance policy was accompanied by a gradual reduction in the debt ratio to GDP from 81% in 1994 to 78% in 2000. The program was completed in April 2004 and resulted in a significant decrease of Senegal's external debt. However, the external debt ratio increased from around 78.6% in 2000 to 46.3% in 2005. Moreover, the eligibility of Senegal under the Multilateral Debt Relief Initiative (MDRI) resulted in a substantial reduction of the debt stock which increased from 2 127 Billion CFA Francs in 2004 to 1.042 trillion CFA francs in 2005. Since then, the debt stock to GDP has steadily increased to $ 2.597 trillion in 2014. However, debt sustainability and forecasts predict a debt ratio of 57.1% in 2015 should be reduced to 48, 5% in 2021. The reversal of this trend would be based on respect for the projected deficit profile over time. This would translate to a decrease from 4.8% of GDP in 2015 to 2.3% of GDP in 2021.

Tax revenues rose sharply over the period 1994-2005, from 301.5 billion in 1994 to 880.2 billion in 2005, an increase of 10.9% on average per year, bringing the tax rate to 18.5% of GDP largely above the Community floor of 17% retained by the WAEMU.

The years of decline in agricultural production, the electoral years and those marked by strong increases in international prices generally correspond to significant increases in current expenditure and at moments of rupture of the upward trend in the share of (2000, 2006, 2011) (Figure 10-4). Thus, as of 2006, the Government had released budget appropriations of 15 billion FCFA allocated to social protection measures, thus increasing the budget deficit excluding grants to 13.2% in 1994. This social safety net was used to subsidize temporarily Consumer prices of rice and wheat, as well as health, education and other social spending for the most vulnerable groups. In 2001, measures to clean up the electricity and groundnut sectors cost the State 105 billion CFA francs.

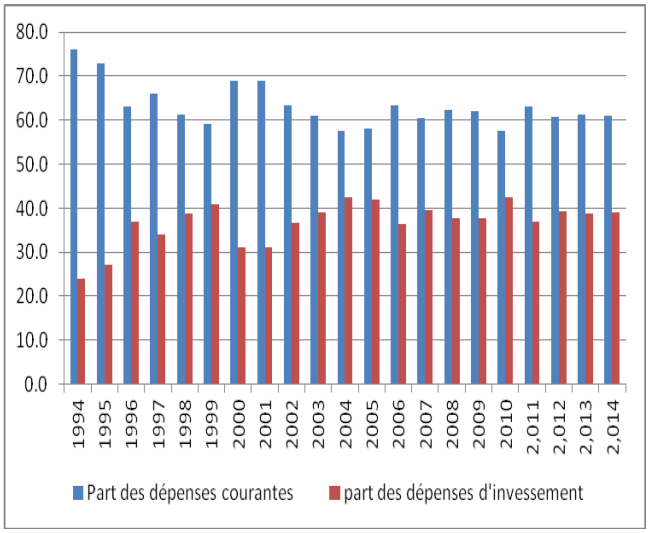
However, fiscal management was generally conservative with an average increase of 10.3%, slightly above the average expenditure increase over the period. In addition, Senegal has shifted its resources towards investment in recent years. On average over the last ten years, the share of capital expenditure in total expenditure has risen to 39.4 compared to 33% in the 1990s.

Figure 10- 4: Evolution of budget expenditures (in %)



Source : DPEE

Figure 10- 5: Structure of expenditures

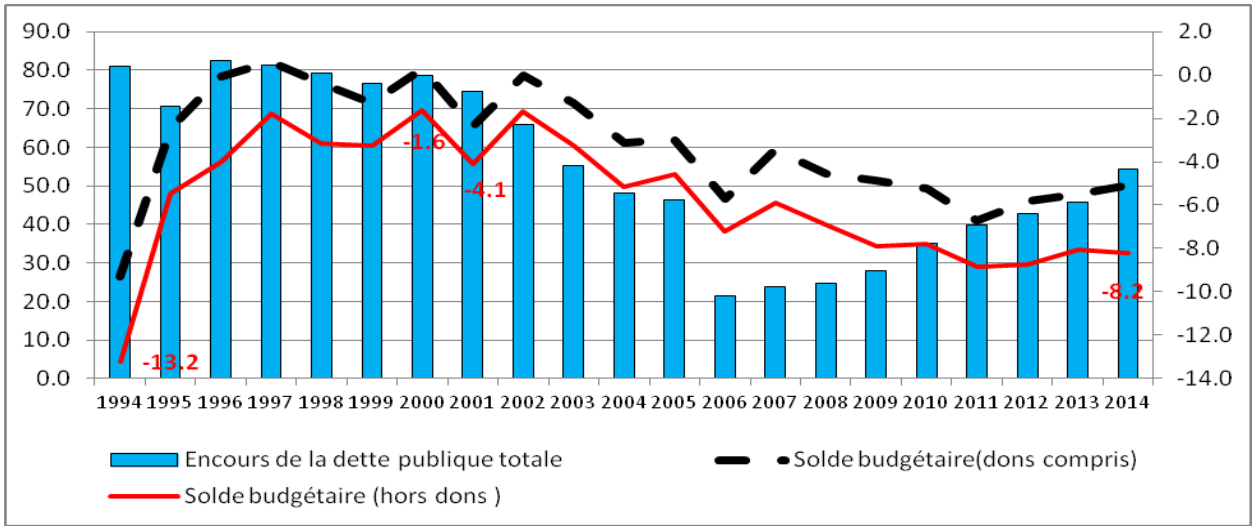


Source : DPEE

Balancing the budget

Overall, Senegal's fiscal policy has been cautious despite spending expansion to contain the case, the impact of exogenous shocks and crises linked to trade union demands, particularly in education and health. After 1994, the budget deficit was gradually reduced under the double effect of an increase in revenue and a control of the increase in expenditure. The results show a budgetary deficit based on commitment (excluding grants), which rose from 13.2% of GDP in 1994 to 1.6% in 2000. Subsequently, it deteriorated to 4.1% in 2001 due to the implementation of measures to clean up the electricity and peanut sectors for CFAF 105 billion, or 3% of GDP, in order to improve the performance of these sectors (Figure 10-4 Right scale). An improvement to 1.7% was subsequently noted in 2002. Overall, the budget deficit (excluding grants) rose from 1.7% in 2002 to 4.8% in 2014, reflecting the strength of public investment.

Figure 10- 6: Budget balances and public debt as a percentage of GDP



Source: DPEE, DDP

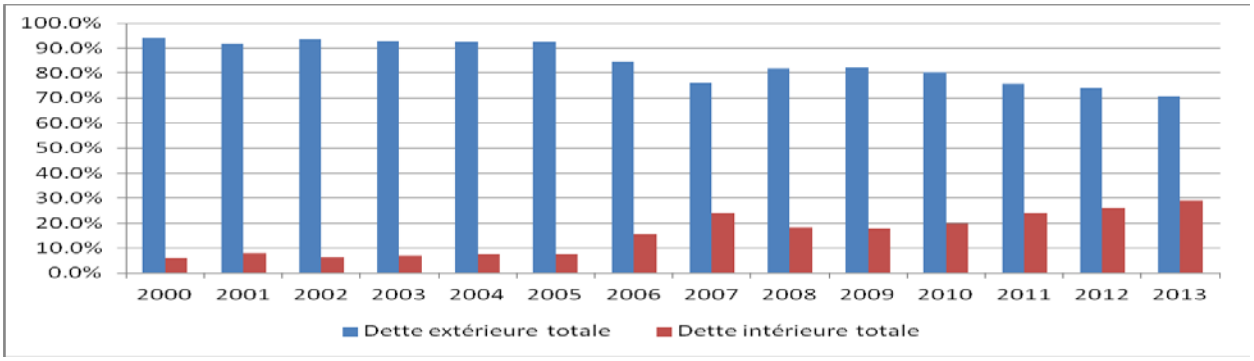
Sustainability of the debt

Over this period from 1994 to 2000, the policy of consolidating public finances was accompanied by a gradual reduction of the debt-to-GDP ratio from 81% in 1994 to 78% in 2000 (Figure 10-6 from the left).

The program's completion in April 2004 resulted in a significant reduction in Senegal's external debt, whose external debt ratio rose from nearly 78.6 per cent in 2000 to 46.3 per cent in 2005. In addition, Senegal's eligibility for the MDRI resulted in a substantial reduction in the stock of debt from 2,127.8 billion in 2004 to 1042.1 billion CFA francs in 2005. Since that date, Stock of debt relative to GDP steadily increased to 2597 billion in 2014. However, the debt remains sustainable and forecasts assume a debt ratio of 57.1% in 2015 which should be reduced to 48, 5% by 2021. This trend reversal would be based on meeting the projected deficit profile over the period from 4.8% of GDP in 2015 to 2.3% of GDP in 2021.

However, mainly external debt is denominated in foreign currency (Figure 10-7), which is a point of vulnerability vis-à-vis the rest of the world in relation to real exchange rate fluctuations, any depreciation of which leads to an increase of the debt-to-GDP ratio.

Figure 10- 7: Structure of public debt over the period 2000 -2014



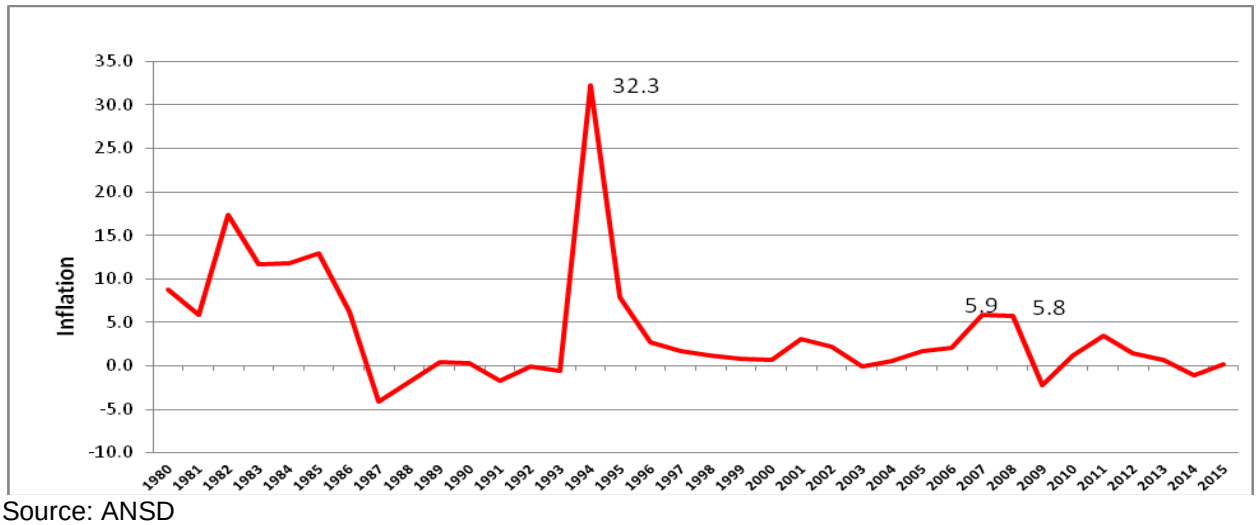
Source: DGCPT

Inflation

As a member of WAEMU, Senegal's monetary policy is determined by the Central Bank of West African States (BCEAO) and the French Treasury guarantees the convertibility of the CFA whose parity is fixed against the EURO. Relative to comparator countries, Senegal has a fairly low and stable inflation over time. In addition, changes in the money supply would not cause inflation and Senegal has controlled inflation to keep the same real value of money supply.

The shock of the devaluation immediately affected the economy with a sharp price increase of 32.1% in 1994 and 8.1% in 1995. Since the absorption of this shock, the inflation rate rarely exceeded 2% (in 2001 and 2002 when it was 3% and 2.3%, respectively). These rates were achieved following the impact of the switch to the single VAT rate of 18% in the West African Economic and Monetary Union (WAEMU) zone in 2001. In the past, some products were subject to the VAT rate of 10%.

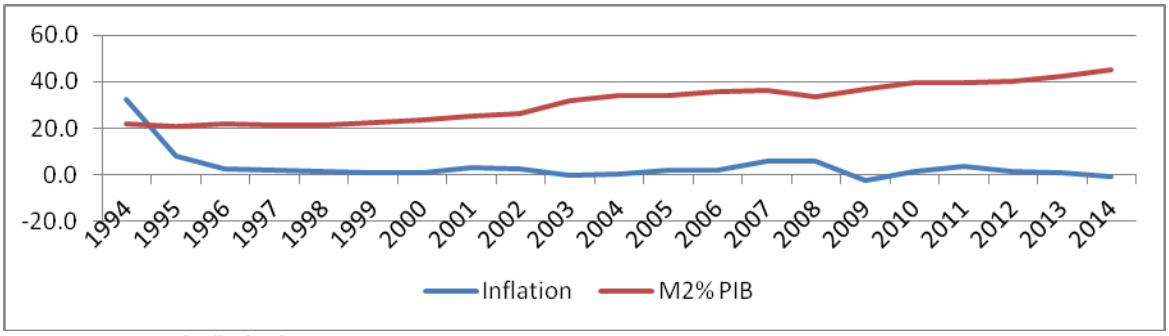
Figure 10- 8: Senegal Consumer Prices 1994-2005



Source: ANSD

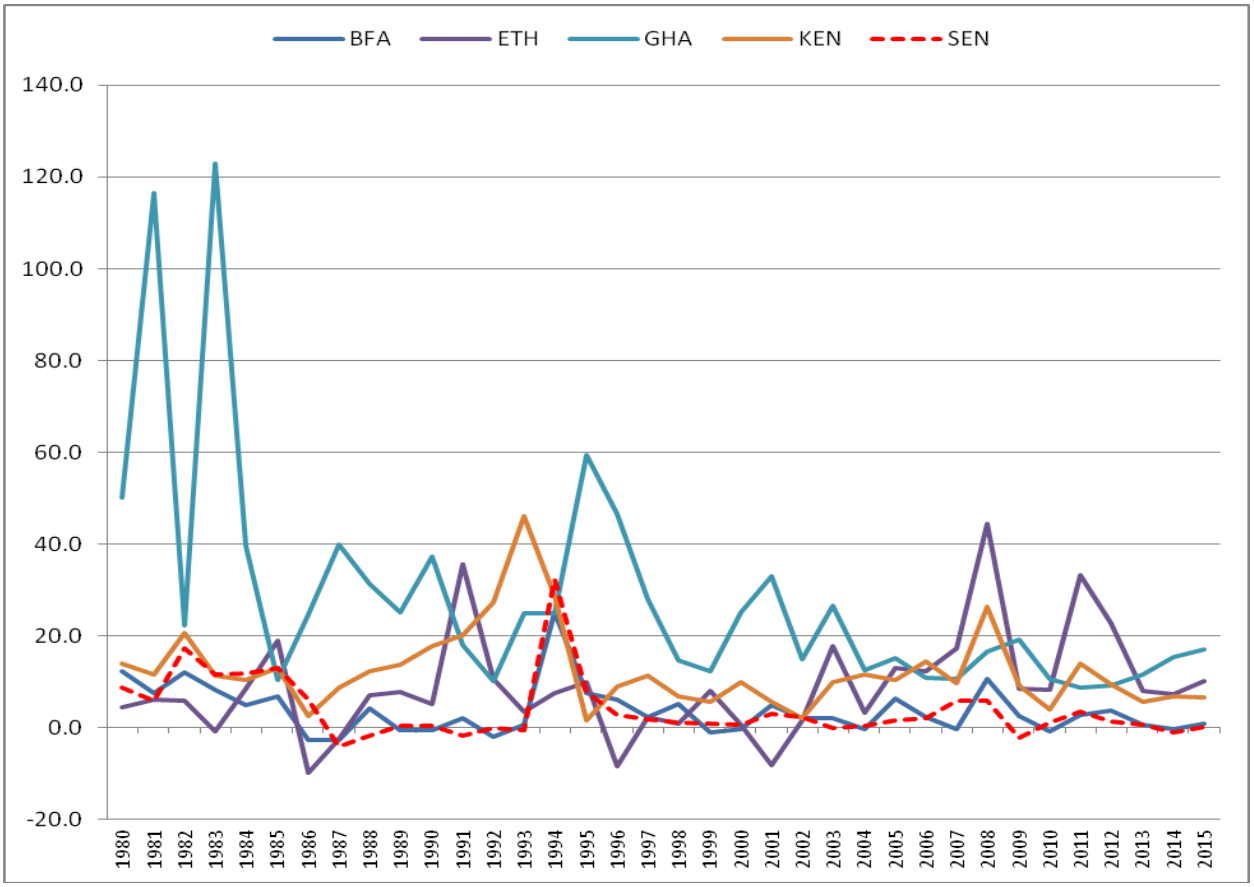
The highest levels of inflation were observed in 2008 (+ 5.9%) and 2009 (+ 5.8%) due to the food crisis leading to sharp price increases (Figure 10-9). This rise in food and energy prices revived inflation and put pressure on fiscal and external accounts. Indeed, the policy of household price subsidies was strengthened with the suspension of VAT and customs duties on certain food products in mid-2007, the gradual increase in the subsidy for butane gas and the subsidies on petroleum products. The IMF estimated the budgetary costs of these measures at 1.5% of GDP in 2007.

Figure 10- 9: Money as a percentage of GDP and Inflation



Source: ANSD (Inflation), BCEAO

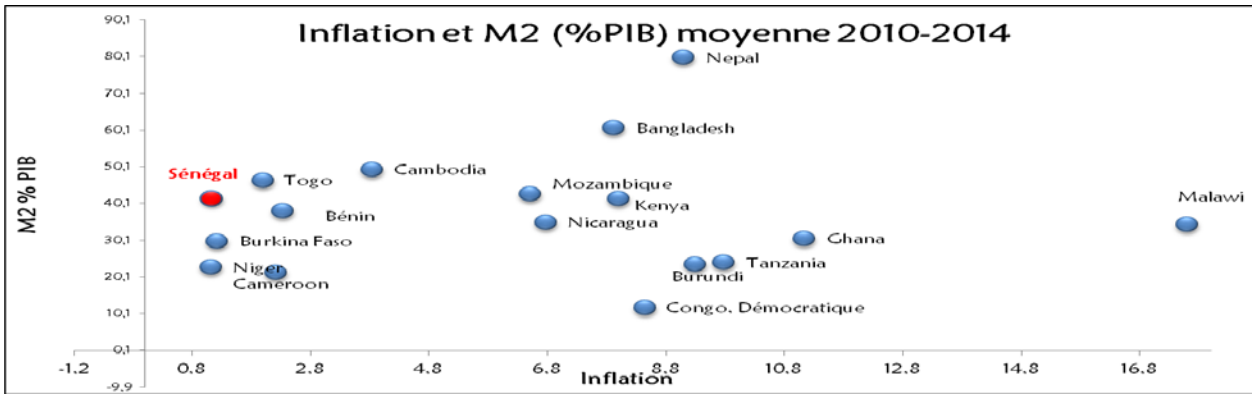
Figure 10- 10: Evolution of inflation Senegal and comparator countries



Source: WDI

Senegal had a fairly low and stable inflation rate over the period when compared to comparator countries. Moreover, the trend of money supply was not a source of inflation (Figure 10-11) because compared to comparator countries Senegal was able to keep its money supply inflation under control.

Figure 10- 11: Inflation and money supply M2 as% of GDP



Source: WDI

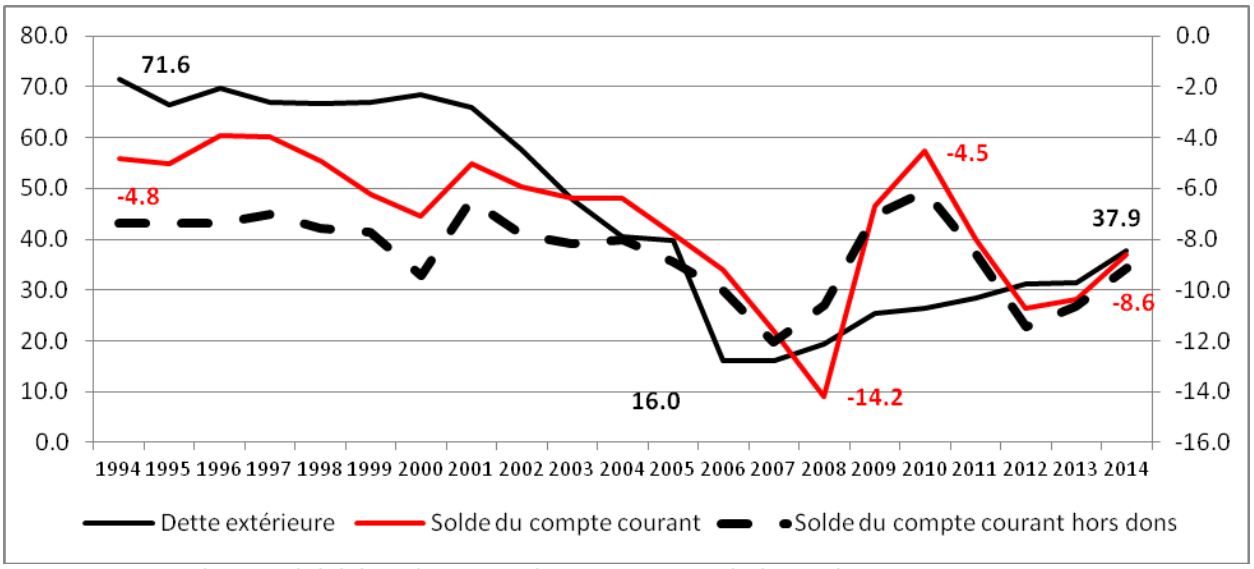
Current Account and External Debt

Senegal's external debt is essentially denominated in foreign currency, which is another source of vulnerability to external fluctuations of the real exchange rate which would boost the ratio public debt to GDP. Current account deficits are not a sign of underlying economic weakness unless they reach unsustainable levels. The current account balance is by definition equal to the excess of domestic investment over domestic savings, and up to a point tapping into foreign savings can help a country increase its rate of investment and growth. Nonetheless, current account deficits can pose a threat to macroeconomic stability if they are excessive and persistent, and are financed through borrowing or the sale of existing foreign assets rather than through foreign direct investment. In such cases, foreign lenders may conclude that a country will no longer be able or willing to service its debts, and refuse to lend more or to roll over existing debt as it matures.

Figure 10-13 illustrates the evolution of Senegal's current account and external debt with and excluding grants as a percentage of Gross Domestic Product. The balance of the current account is a deficit structure over the whole period of analysis due in particular to the trade deficit, mitigated by the current account surplus, driven by remittances from Senegalese abroad. Indeed, Senegal is very open to the outside because of the scale of its imports of food products, notably rice and petroleum products dominated by crude oil which supply the African Oil Refining Company (SAR), which inevitably depends on it for electricity production.

In this respect, after a slight improvement in 1995 and 1996, following the devaluation of the CFA in relation to the FF, the current account deficit gradually deteriorated to more than 14% of GDP in 2008, oil price was the highest in the period (Figure 10-13).

Figure 10- 12: Current Account Balance and External Debt as a Percentage of GDP

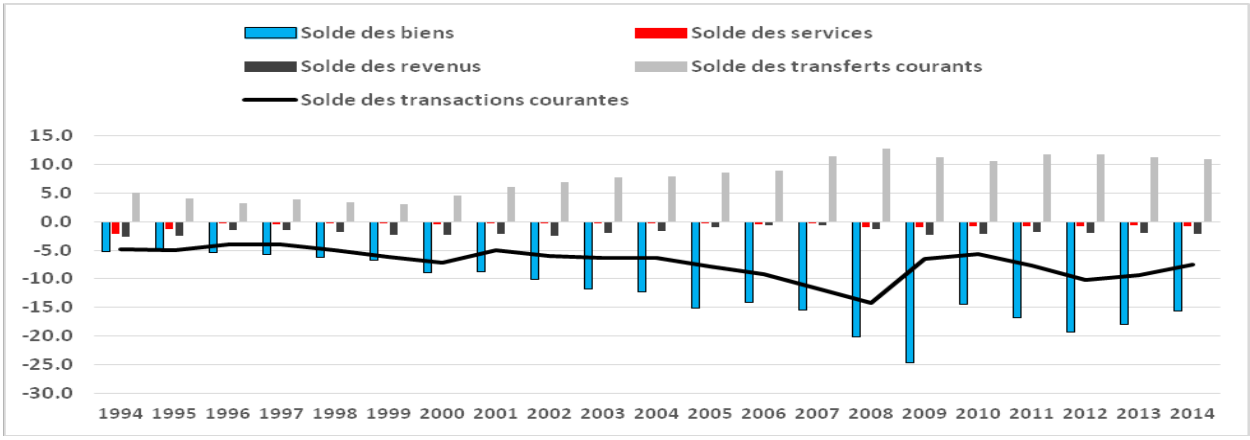


Source: DGCPT (external debt) and BCEAO (current account balances)

The sustainability of a country's current account is typically assessed by the IMF and others through a debt sustainability analysis, which seeks to identify factors that could place the ratio of external debt to GDP on an unsustainably rising path. If the current account deficit excluding interest payments on existing debt remains above a certain threshold share of GDP, the analysis concludes that external debt is on an unsustainable path which must be reversed to avoid crisis.

Between 2008 and 2010, the current account deficit improved markedly, from 14.2% in 2008 to 4.5% in 2010. This improvement is mainly due to the reduction in food import bills due to good agricultural production under the Great Agricultural Offensive for Food and Feed (GOANA) executed over this period. GOANA was the response of the Senegalese authorities following the 2007-2008 food crises. However, failure to sustain GOANA efforts from 2011, coupled with a rainfall deficit, led to a slowdown of agricultural production in 2010 and a sharp decline in 2011, leading in turn to a surge in massive imports of food products. As a result, the current account deficit deteriorated again to more than 11% of GDP in 2011 as a result of the widening trade deficit (Figure 10-13). Compared to comparator countries, Senegal's performance is fairly low in terms of exports (Figure 10-11). Figure 10-11 shows that compared to comparators, Senegal is not far from the average (Figure 10-12) despite the weakness of exports. This would due to the performance of transfers (Figure 10-13).

Figure 10- 13: Breakdown of the current account balance (in GDP point)



Source BCEAO

After a decline between 1980 and 1981, the deficit of the current account gradually improved from 20.1% to 9.8% in 1993. This improvement in the current account balance is due mainly to the fall in prices which, since 1986, covers the main import products (rice and petroleum) and import reduction in conjunction with the decrease of investment (the investment rate has declined on average by about 6%). The current account with regard to the external debt excluding grants as percentage of GDP is in deficit, particularly as a result of the trade deficit, offset by the surplus in the current transfers account and by remittances from Senegalese working abroad. In fact, the degree of Senegal's openness to international trade can be attested by the extent of its imports of food products including rice and petroleum products, notably crude oil which supplies Senegal's Oil Refinery Company (SAR) which inevitably depends on it for electricity production.

Government subsidies, in general, and to the energy sector in particular, have reduced the pace of structural investments of other sectors. Although risks remain in relation to the current widening of the deficit and the rapid increase of the public debt, the current macroeconomic policy as enshrined in the PSE, does not constitute a major constraint to growth in Senegal. However, whether or not they become binding constraints in the short- to medium-term, depends on how the government responds to the macroeconomic challenges that have emerged with (1) the recent increasing trend of the public debt following the debt relief under the HIPC initiative; (2) the financing of PSE-1 and PSE-2; and (3) the rapid rising of the fiscal deficit because of the dependence on remittances from Senegalese working abroad.

The analysis shows that macroeconomic risk is not currently a major constraint to private investment and economic growth in Senegal because the inflation is stable and the budget deficit is under control. Senegal's stabilization of its macroeconomic position is also the result of its expenditure-revenue ratio which is below the average compared to countries with the same levels of income. Senegal's debt stock is sustainable despite recent increasing trend after the 2004-2005 debt forgiveness initiatives. The trend appears sustainable so long as the GOS remains cautious and continues to pursuit sound macroeconomic management. The Current Account is sustainable. However, in terms of the debt stock, the GOS needs to remain vigilant because the Current Account remains vulnerable to the changing international environment.

CHAPTER 11: IS WATER SHORTAGE BINDING?

Recognized as a fundamental human right by the United Nations since 2010, access to water and sanitation is a major concern for low-income countries, especially those in the Sahelian zone. At this level, it should be emphasized that Senegal has already achieved the MDGs with regard to access to drinking water with 99% in urban areas and 85% in rural areas. [141]

11.1 SUMMARY OF CONSTRAINT

The government has invested significant amounts in irrigation since 2009 and the MCC in the first Compact contributed to the growing profitability and availability of irrigation schemes. Field work with horticulturalists and rice producers in the north did not reveal a constraint related to irrigation, although many noted the importance of access to land with a water source.

In terms of the four tests, this evidence suggests that water shortage does not rise to the level of major binding constraint to private investments and economic growth. First, Senegal's mortality rate due to unsafe drinking water, poor sanitation, and general lack of hygiene is relatively low compared to its comparators. This evidence can be confirmed if we compare this rate with the other neighboring Sahel countries such as Benin, Burkina Faso, Niger and Togo. Second, the evidence shows a positive correlation between access to water and sanitation and economic development, as the test shows that an increase in access to water and sanitation promotes the production of industrial and agricultural activities in Senegal.

There is no indication that water and sanitation infrastructure is a binding constraint to economic growth in Senegal. The country has a relatively favorable position relative to its comparator countries. Senegalese firms do not need to circumvent the constraint as industrial and safe water usage is not an obstacle to their business activity.

Finally, the response to fourth test on "whether water shortage hampers their investment" is negative. Agriculture is critical to economic and social development in Senegal. It plays a crucial role in improving people's diet and in the consolidation of the country's food security. The analysis of the data shows that Senegal's agriculture is mainly rainfed and seasonal (03 months of rain per year) and is highly dependent on the availability of water. Water control thus constitutes a major challenge for the development of the sector.

11.2 BACKGROUND AND BENCHMARKING

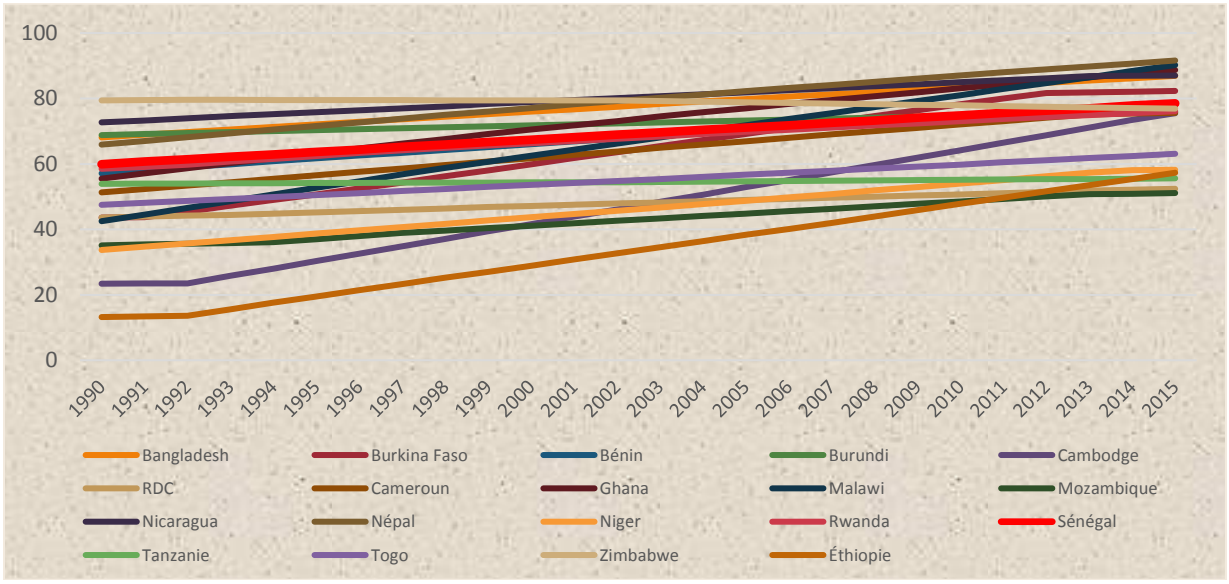
Senegal has already achieved the Millennium Development Goals (MDGs) with regard to access to clean water with 99% urban and 85% rural. In terms of water sanitation, and according to the latest Demographic Health Survey (DHS), 44% of households had access to improved toilets in 2014, against 39% in 2013 i.e. an increase of 5 percent. According to World Bank statistics, Senegalese population access to an improved water source increased slightly between 2014 and 2015 from 66.3% to 67.3%. In addition, about 93% of the population had access in 2015 to an improved water source in urban areas against 67.3% in rural areas. [142] These reported rates are among the lowest in relation to the reference countries.

[141] Règlement d'assainissement collectif (RAC), 2015

[142] Access to an improved water source is the percentage of the population that has reasonable access to sufficient water from an improved source such as a household water intake, a public ground tank, well, source or protected well or collected rainwater. Unimproved sources include vendors, tank trucks and unprotected sources and sinks.

The lack of water for productive or industrial use has not been noted in any firm survey or study in the background literature. In the Senegal River Valley after the installation of the Manantali and Diama dams in Mali and Senegal, respectively, the potential for irrigation in the Senegalese territory of the Senegal River Valley grew from a few hundred hectares (ha) to 240,000, of which 71,400 is currently irrigated.[143] Senegal Compact I permitted the development of water resources in the Delta River Valley through the construction of irrigation infrastructure for a competitive industrial agro-production. Overall, FAO estimates that Senegal has potential to irrigate 350,000 ha of land, of which 104,000 are currently under irrigation. Groundnuts and millet remain primarily rainfed crops. Imports of irrigation equipment have seen an uptick in recent years.

Figure 11- 1: Percentage of population with access to improved water source



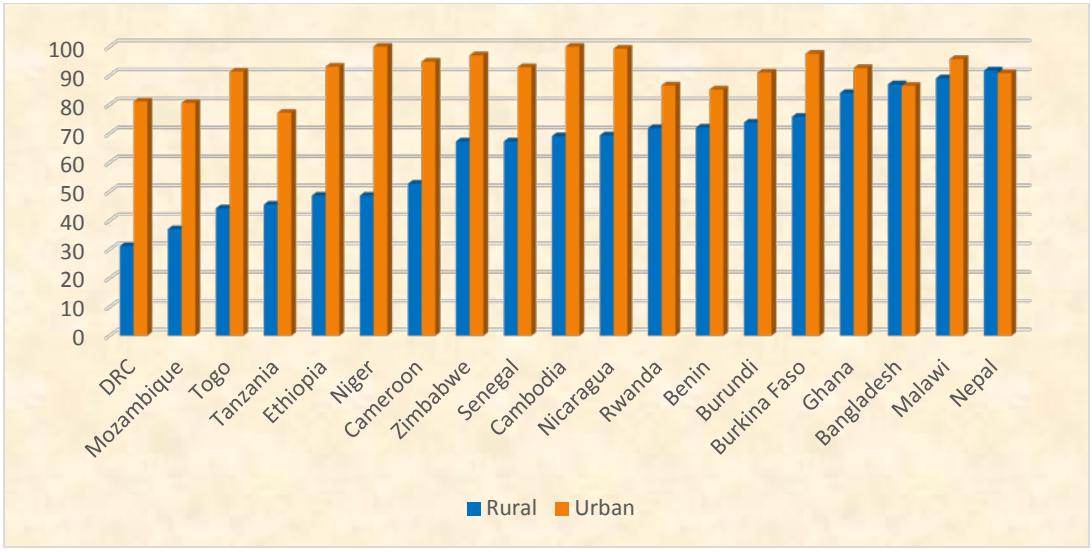
Source: WDI

Nevertheless, Senegal's water and sanitation sub-sector continues to face constraints such as costs for connections to water and sanitation in peri-urban and rural areas, the high fluorine content and chloride in the groundnut basin, the drilling maintenance deficit, sanitation funding gap in rural and urban areas, as well as the dilapidated sewerage.

Figure 11- 2: Percent of population with access to improved water in rural and urban areas in 2015

Reasonable access is defined as the daily availability of at least 20 liters per person from a source within one kilometer of the dwelling.

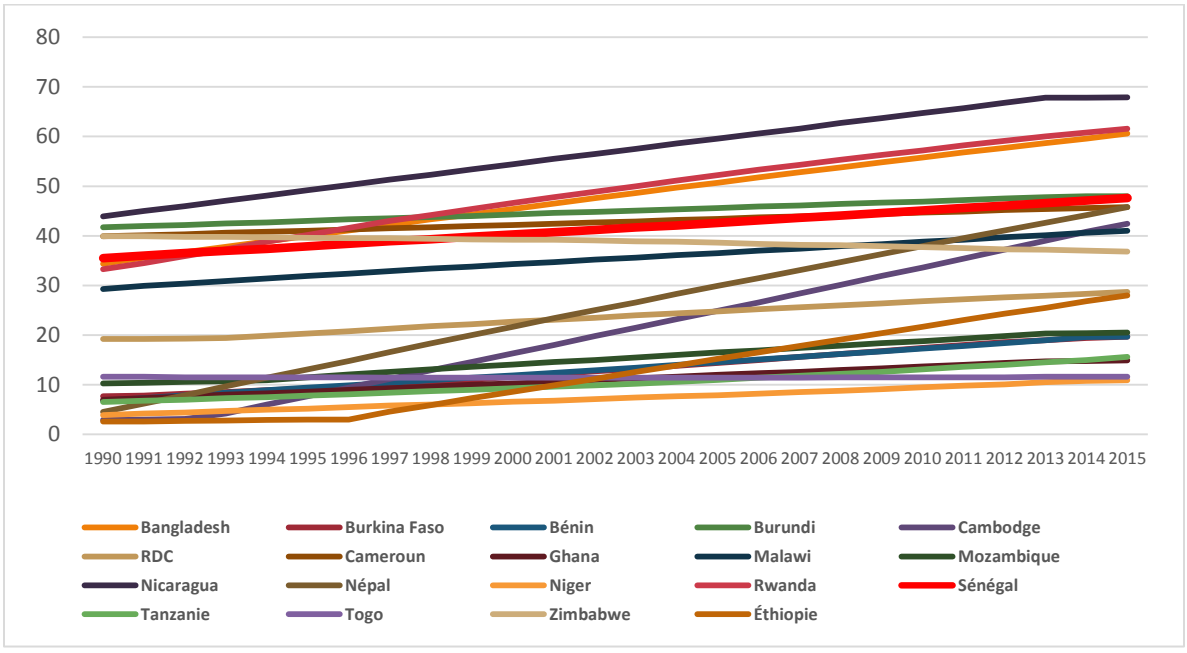
[143] FAO: Irrigation Potential in Africa: Senegal River basin, http://www.fao.org/docrep/W4347E/w4347e0h.htm



Source: WDI

The situation remains unchanged in terms of access to improved sanitation facilities for Senegal, which is 33.8% in rural areas and 65.4% in urban areas, compared to 28.48% and 46.69% on average in rural and urban areas, respectively.

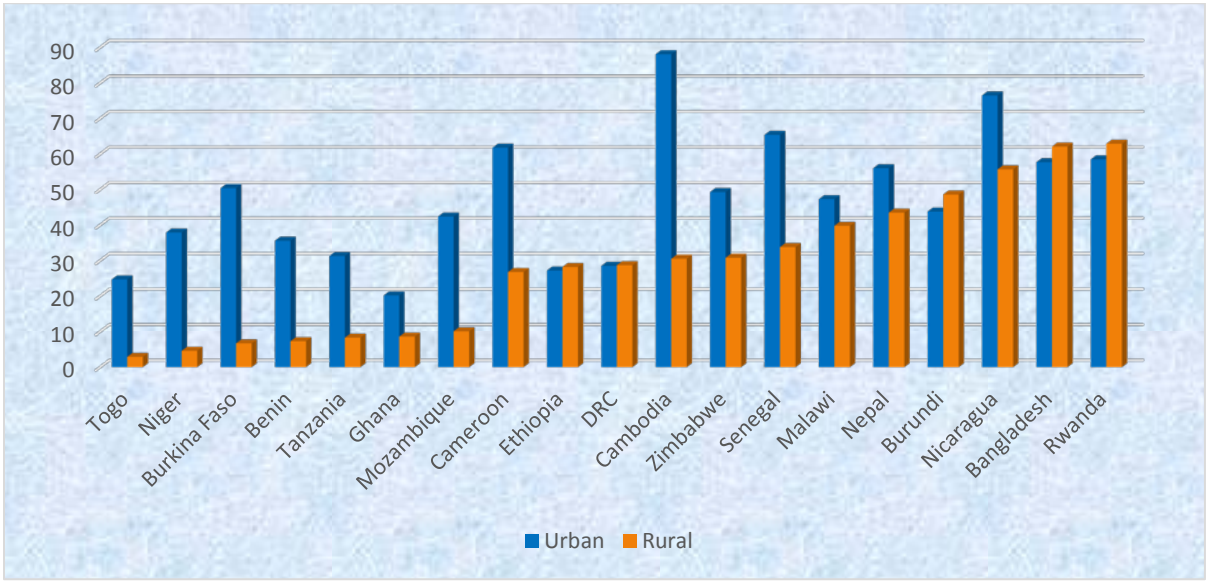
Figure 11- 3: Percentage of population with access to improved sanitation facilities



Source: WDI, 2016

The disparities in Senegal are considerable compared to Bangladesh and Rwanda where access to improved sanitation facilities in rural areas is almost identical to that of urban areas.

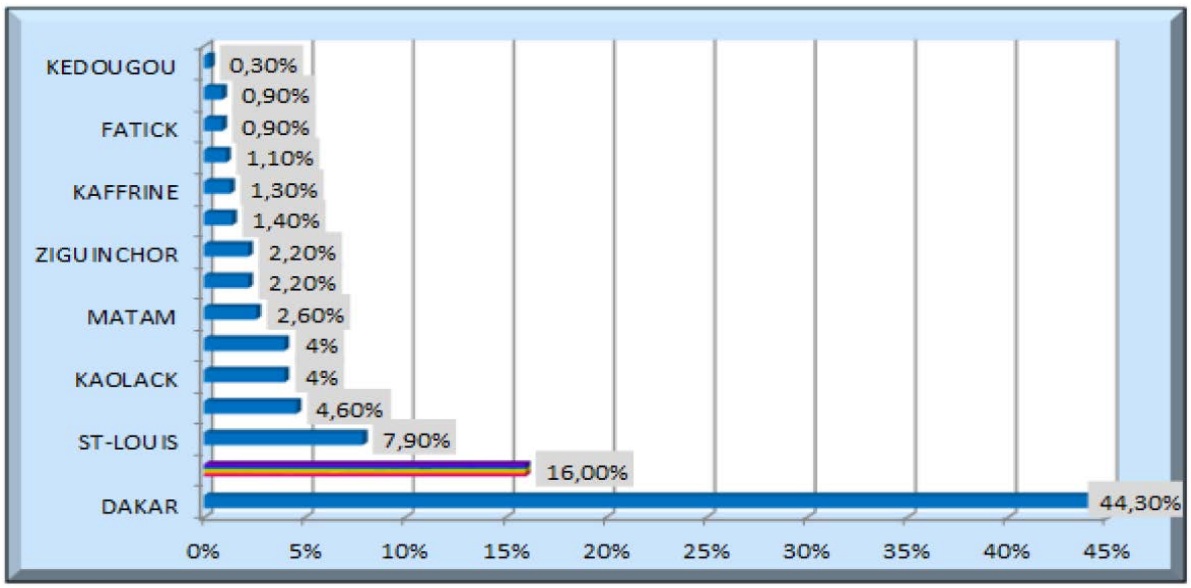
Figure 11- 4: % of population with access to improved sanitation facilities in rural/urban areas by 2015



Source: WDI

Of all the regions, Dakar is the most endowed with a rate of 44.30%, almost three times the national average. Dakar contrasts with regions such as Fatick, Sédhiou and Kédougou where the rate is less than 1% which indicates a near absence of a connection system to the sewer network.

Figure 11- 5: Sewer connection rate



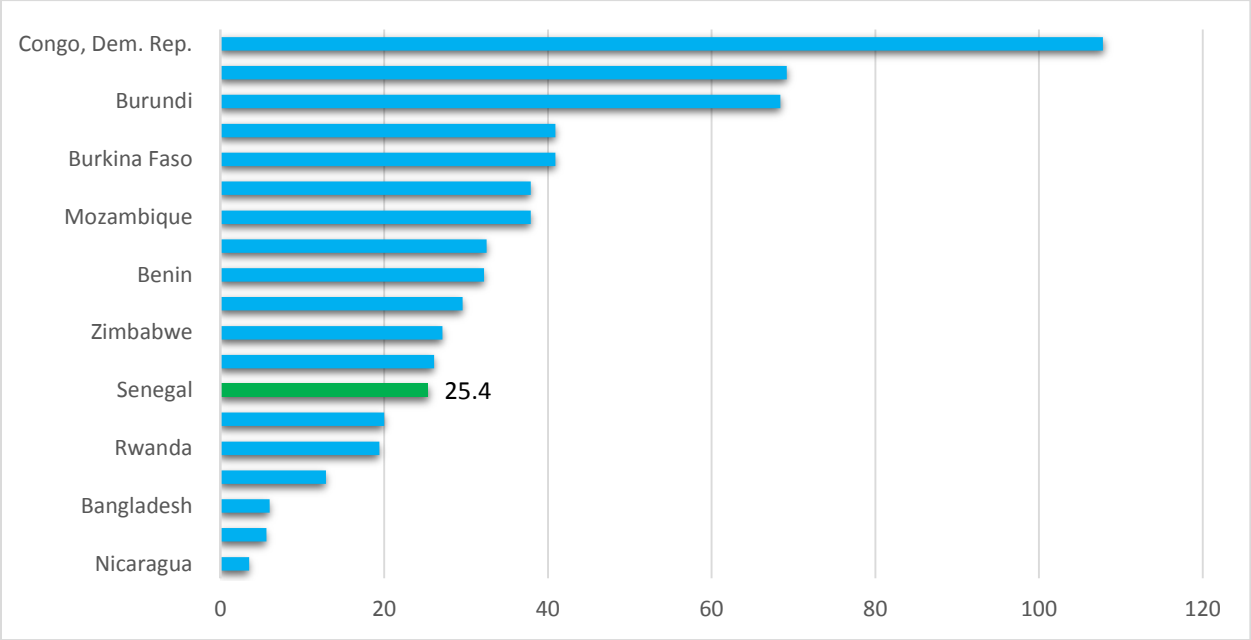
Source: ANSD, RGPHAE, 2013

The water and sanitation sub-sector continues to face constraints such as costs related to water and sanitation connections in peri-urban and rural areas, high fluorine and chloride in the

groundnut basin, the maintenance deficit for boreholes, inadequate funding for sanitation in rural and urban areas, and the dilapidation of the sewerage network.

Senegal has a relatively low mortality rate. This is confirmed even if we compare this rate with those of countries with the same geographical characteristics as Benin, Burkina Faso, Niger and Togo. The measures undertaken by Senegal in this area enhanced the situation.

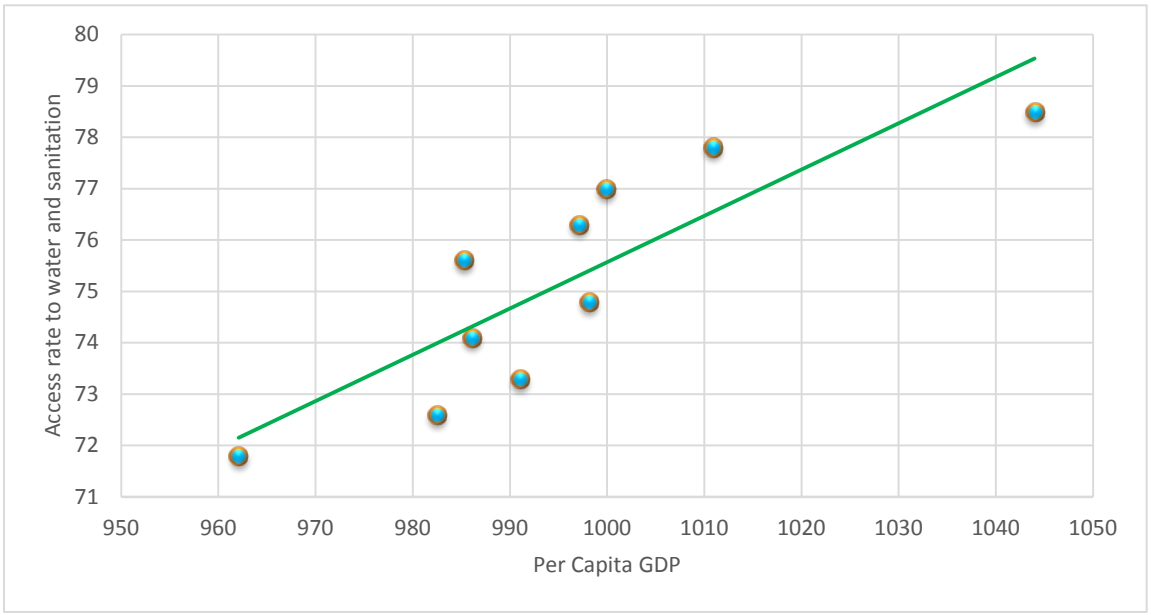
Figure 11- 6: Mortality rate due to unsafe drinking water/poor sanitation/lack of hygiene - 2012 (100,000 pop)



Source: World Health Statistics, 2016

The test below shows a positive correlation between the two variables. In Senegal, an increase in access to water and sanitation favors the production of industrial enterprises and agricultural activity.

Figure 11- 7: Correlation of access to water and sanitation and per capita GDP over the period 2006-2015

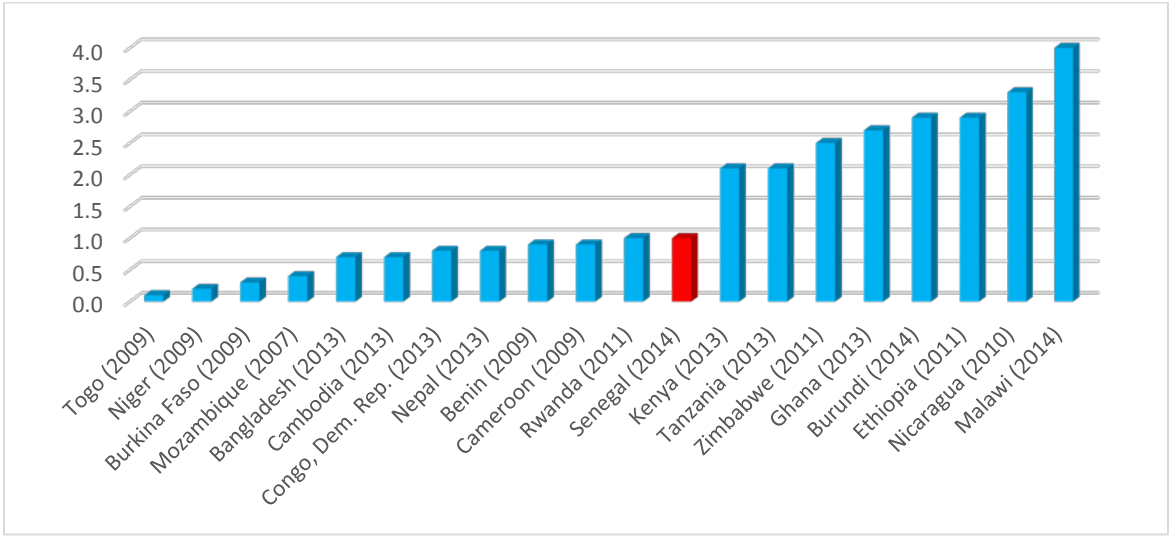


Source WDI and Authors' calculations

Improved access to an improved water source and sanitation are associated with increases with per capita GDP of the Senegalese population.

Senegal has a relatively favorable position compared to comparator countries. Thus, firms are not obliged to circumvent constraint. They do not have water shortages.

Figure 11- 8: Number of claims of water insufficiency (per month) by firms



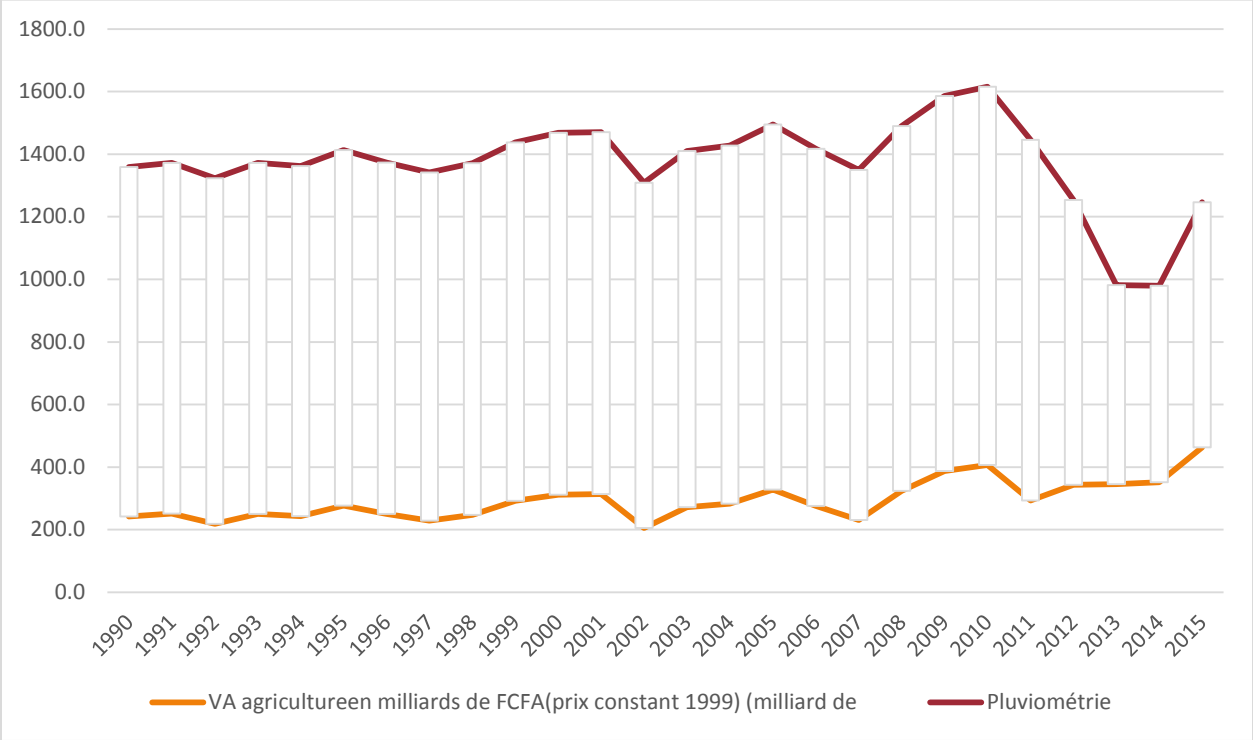
Source: Enterprise Surveys, 2015

Agriculture is critical to Senegal's economic and social development. It plays a crucial role in improving people's diet and in the consolidation of the country's food security. The analysis of

Figure 11-8 shows that Senegal's agriculture is mainly rainfed and seasonal (03 months of rain per year) and is highly dependent on the availability of water. Water management thus constitutes a major challenge for the development of the sector.

According to the 2013 ANIDA (*Agence nationale d'insertion et de développement agricole*) report, Senegal has great potential in terms of groundwater resources. However, only 15% of these are exploited and used for agriculture. Thus, inefficient water resource management seems to be the major constraint to Senegal's agricultural production. Initiatives such as the *Programme d'Urgence de Développement Communautaire (*PUDC) and the *Projet d'Appui à la Petite Irrigation Locale (PAPIL)* have been designed to improve the rural population's access to water through basic infrastructure such as drilling. However, considerable efforts are still needed to address the potential vulnerability to water as an essential factor of production particularly for agro-silvopastoral activities.

Figure 11- 9: Evolution of value-added agriculture and rainfall in Senegal from 1990 to 2015



Source: ANSD/DPEE/ANACIM

CHAPTER 12: IS HEALTH FOR HUMAN CAPITAL A BINDING CONSTRAINT?

Health is one of the key elements to capture human capital and investment in health is justifiably emphasized in the literature. Indeed, good health is not only a result of growth but also a foundation for development. Healthy people are more productive, have more income and can expect to save without risk of being exposed to the unpredictability of disease. In addition, they consume more and work longer with a longer life expectancy (Bloom, 2003) [144]. This supports growth and well-being (Diagne, 2007) [145].

12.1 SUMMARY ANALYSIS

Direct costs are incurred by workers who do not have access to health insurance either provided through their employers or by the State (Public Health Service), and are referred to as catastrophic expenditures by WHO. The evidence shows that the amount of catastrophic expenditures in Senegal is not very high compared to the comparator countries. In other words, the implicit cost of health does not seem to be very high. Apart from catastrophic expenditures, one can also use the total health expenditure (public and private) per capita as a proxy of the implicit cost of the health factor. This indicator would show the actual cost of the health care system from the perspective of society. Again, the per capita expenditures incurred in Senegal are not particularly high compared to comparator countries.

In principle, an increase in health spending induces improved access to health services, raising the technical platform and the effectiveness of health interventions. In addition, the decrease in days lost due to illnesses stimulates private investment through increased performance of private inputs (including labor). In the case of Senegal, the evidence indicates a low correlation of health expenditure per capita and private investment with a very low coefficient of determination. Thus, in terms of impulse responses, the evidence does not show that a relaxation of the health constraint is accompanied by a significant improvement in private investment.

Based on evidence, it appears that health is not a major constraint to private investment. In fact, funding costs remain average compared to comparator countries, and private investment shows little sensitivity to rising health costs. However, this result does not mean that Senegal's health system is efficient or optimal. Further efforts are still needed especially in terms of equity and regional disparities in sanitation.

12.2 BACKGROUND AND BENCHMARKING

In the context of growth diagnostics, a shortage of human capital can pose a binding constraint to growth if private investors cannot secure the skilled labor they need to effectively manage and operate their businesses at a competitive cost. Although many countries may reasonably aim for a more highly skilled workforce as part of their development plans, a lack of human capital only poses a binding constraint to growth if the demand for skills substantially exceeds supply, so that the costs of obtaining the needed skills are high. As will be demonstrated below, the empirical evidence shows that there is no shortage of skilled labor in Senegal. Rather, at present, the demand for skilled labor falls significantly short of the available supply. The most compelling evidence for this conclusion comes from the high rates of youth unemployment that affect

[144] Bloom, D., & Canning, D. (2003) - The Health and Poverty of Nations: From Theory to Practice Vol. 4, No. 1.
[145] Diagne A. (2007). Investir sur les gens : Education et Santé, *African Economic Research Consortium.*

essentially all types of university degrees. It is reinforced by the relatively high levels of emigration of tertiary-educated workers from Senegal.

Since 2000, referring to the orientations and objectives defined in its PRSP, Senegal has undertaken major reforms to accelerate economic growth, achieve the Millennium Development Goals (MDGs) and promote sustainable human development. Indeed, it is committed to fight poverty, hunger and disease, to provide education for all children and equal opportunities for both men and women, protect the environment and develop a global partnership for development

According to the 2013 RGPHAE, life expectancy at birth in Senegal is estimated at 64.8 years. It is higher among women in the order of 66.5 years compared to 63.2 for men. This indicator is characterized by a favorable spatial disparity in urban areas (67.4), while the rural areas recorded an estimate of 62.7. Surveys conducted over the past decade have shown progress with the evolution of life expectancy which rose from 44 years in 1999 to 66 in 2014. This evolution of life expectancy at birth is the result of the decline in the level of adult mortality among both men and women. Thus, mortality rates for adult men and women registered by Senegal are below the average of comparator countries.

Significant progress has been made between 1990 and 2015 with the reduction of more than half the mortality rate of children under-five years of age. The majority of death is explained by the mortality rate of infant of 0-1 year of age. At a rate of 68 per 1000 in 2000, Senegal recorded an infant mortality rate of 41.7 per 1,000 live births in 2015, one of the lowest in the region and below the average of the comparator countries. This performance is partly explained by the availability of basic services in health facilities, including child health services, as well as outpatient curative care for sick children, monitoring of infant growth, immunization services Infant, and prenatal consultations.

The results of the 2012-2013 *Enquête Continue sur la Prestation des Services de Soins de Santé (ECPSS)* showed that 94% of health facilities in the country offer infantile curative care, 86% of infantile curative care, 83% of infant immunization, 89% of prenatal consulting services, and 85% of a modern family planning method. In addition, the introduction of new vaccines extends the range to 10 antigens that will help to improve children's health as well as new targets.

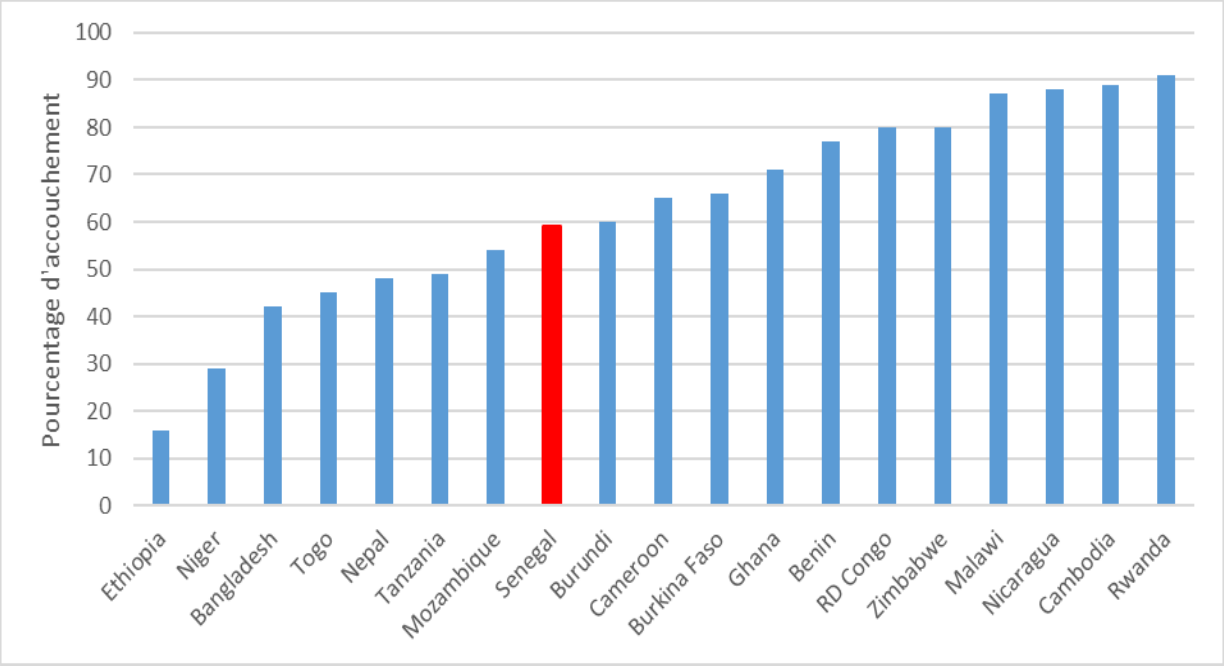
Table 12- 1: Health indicators in Senegal and comparator countries

	Senegal	Average in Comparator Countries
Maternal mortality, ratio (per 100,000 live births)	315.0	404.4
Adult mortality rate, female (per 1,000 adult women)	159.6	227.5
Adult mortality rate, male (per 1000 adult male)	227.2	276.0
Infant mortality rate (per 1,000 live births)	41.7	45.4
Infant mortality rate, female (per 1000 live births)	37.8	41.1
Infant mortality rate, male (per 1,000 live births)	46.5	49.6
Neonatal mortality rate (per 1,000 live births)	20.8	23.9
Mortality rate of -5 years, (per 1000 live births)	47.2	64.51
Mortality rate of -5 years, female (per 1,000 live births)	44.3	59.9
Mortality rate of -5 years, male (per 1,000 live births)	54	69.1
Survival at age 65, female (% of cohort)	73.4	64.9
Survival at age 65, male (% of cohort)	64.3	58.4

In addition to child health, the health of the mother is taken into account in the MDGs. The goal here is to improve maternal health, with a target of reducing maternal mortality by three quarters between 1990 and 2015. For a woman aged 15 years, the probability of dying due to maternal mortality is 1 in 37 in Africa, compared to 1 in 3400 in developed countries (WHO, 2016). By 2015, 315 cases of maternal mortality per 100,000 live births were recorded in Senegal, compared with 488 in 2000. In addition, it is lower than most of the comparator countries, with an estimated 404 maternal deaths. Furthermore, according to the ECPSS, 89% of health facilities offer prenatal counseling services, compared to 76% for normal delivery services and 4% for caesarean section.

In Senegal, during the period 2006-2014, only 60% of deliveries received the assistance of qualified medical personnel, a little more than half. This performance remains low compared to comparator countries or the average (63%) of assisted deliveries.

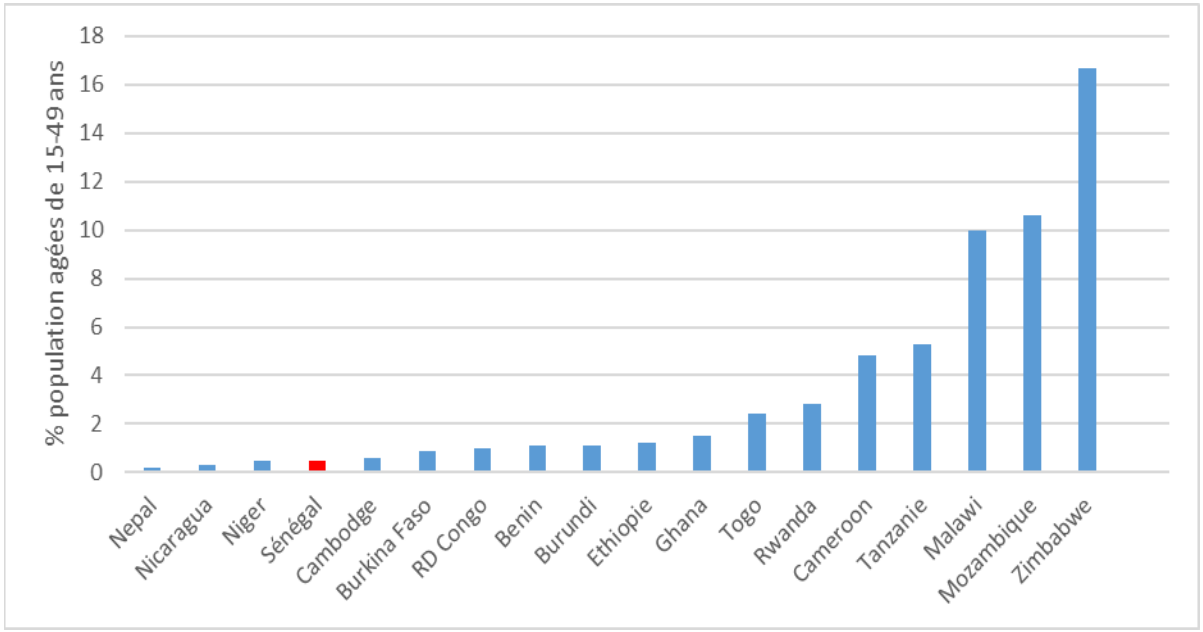
Figure 12- 1: Births attended by skilled health personnel (%), 2006-2014



Source: World Health Organization, World Health Statistics 2016

The fight against HIV AIDS and Malaria has made remarkable progress. The prevalence of HIV/AIDS has been maintained at less than 1% in the general population (0.5% in 2014). This is a good performance compared to Senegal's comparator countries. Furthermore, the risk of new infections is kept below 0.1% uninfected people (WHO, 2016).

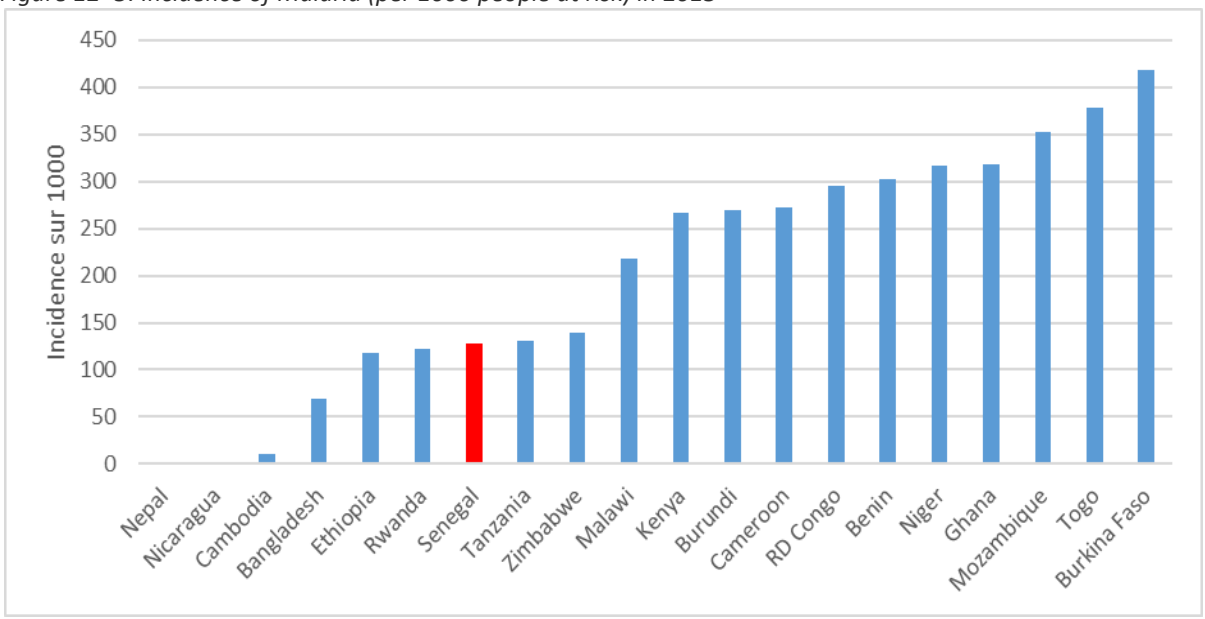
Figure 12- 2: Percent of HIV prevalence in 2014



Source: WDI

According to WHO, malaria incidence is 91 per 1000 people at risk in 2015, 214 million cases and 438 000 deaths and more than two thirds of these deaths occur among children under 5. Sub-Saharan Africa records 90% of deaths. Senegal recorded a decrease in morbidity, which fell from 33.6% in 2001 to 4.4% in 2013. It reported 265,624 confirmed cases of malaria in 2014 (Global Health Observatory, WHO) which is below most comparators. Similarly, there is a low incidence of malaria in Senegal compared to other countries.

Figure 12- 3: Incidence of Malaria (per 1000 people at risk) in 2013



Source: World Health Organization, World Health Statistics 2016

Text Box 12-1: Correlation of malaria and economic growth

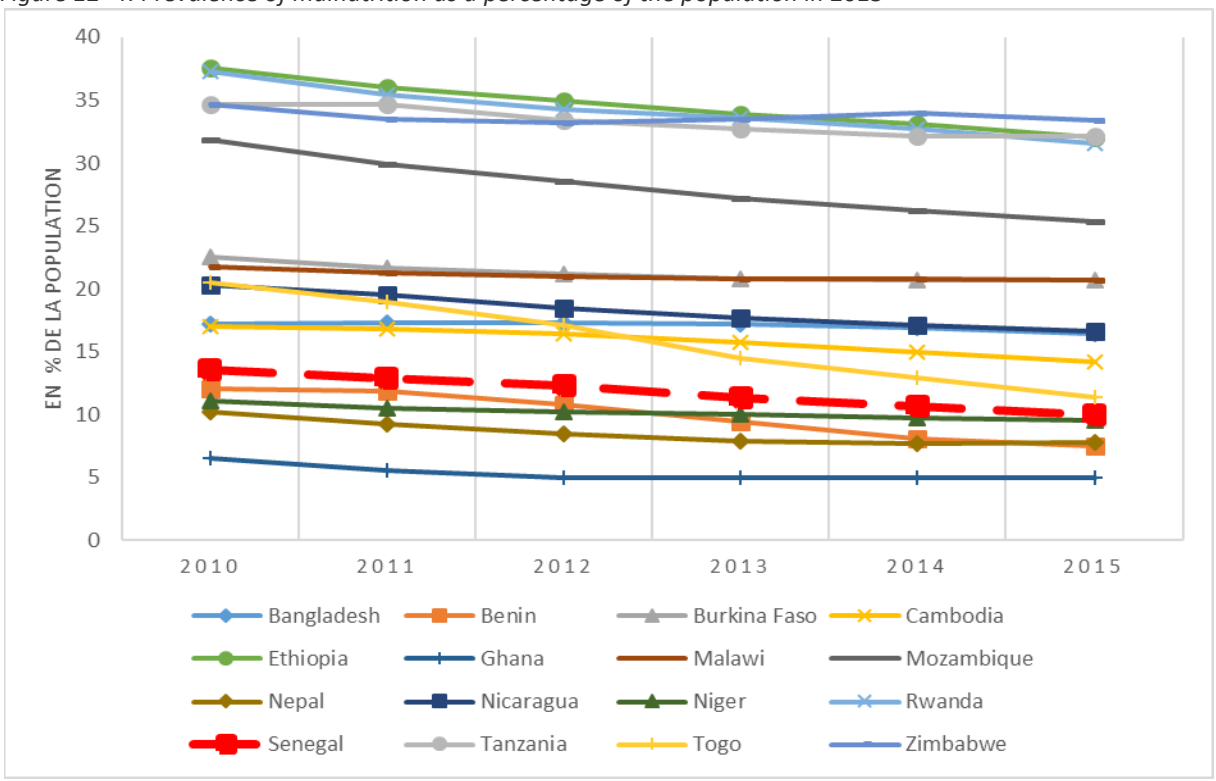
Gallup et Sachs (2001) confirmed the significant relationship between malaria and economic growth. Given other factors such as initial poverty, economic policy, tropical status and life expectancy, these authors have shown that in countries where malaria is intense, growth per person per year Increased by 1.3% less than in other countries and a 10% reduction in malaria in these countries is associated with a 0.3% higher growth rate. The Roll Back Malaria 2011 report found that 72% of companies in sub-Saharan Africa reported a negative impact of malaria and 39% seriously perceived these impacts.

In addition, according to Gallup and Sachs (2001), control of many other tropical diseases does not alter the correlation of malaria with economic growth, and these diseases are not themselves significantly negatively correlated with economic growth.

The expanded immunization program (EPI) achieved good results, particularly in the control of measles and poliomyelitis. The survival rate of women at age 65 is higher in Senegal than compared countries. This observation also holds true for men.

In terms of nutrition, overall, Senegal is doing well because it is performing better than the average for comparator countries for all indices. Thus, the prevalence of malnutrition has followed a downward trend since 2010 and remains below the rates recorded by most of these comparators.

Figure 12- 4: Prevalence of malnutrition as a percentage of the population in 2015



Source: WDI

With 1.29% of children under 5 years being overweight, Senegal performs well relative to the comparator countries. The phenomenon about children whose weight is too high in relation to size is a form of malnutrition resulting from an over-consumption of calories, thus increasing the risk of non-transmissible disease. Emaciation (referring to weight too low given size) affects 5.6% of children and remains below the average of comparator countries.

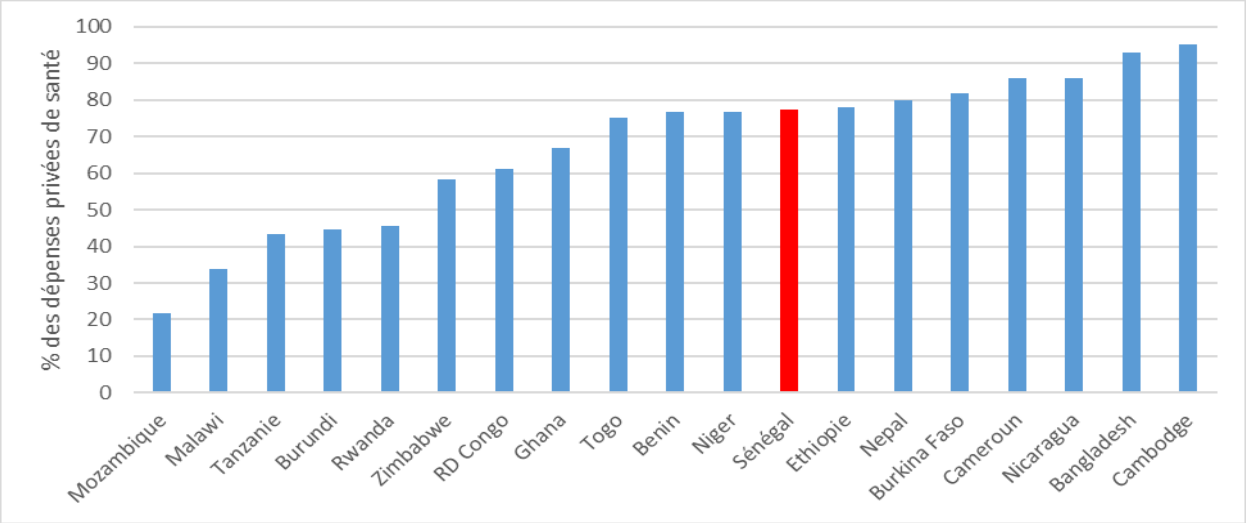
Table 12- 2: Other indicators of malnutrition

	Senegal (2014)	Average in Comparator Countries
Prevalence of stunting, size for age (% of children under 5)	19.39	36.22
Prevalence of wasting, weight for height (% of children under 5)	5. 69	7.9
Prevalence of severe wasting, weight for height (% of children under 5)	0.69	2.21
Prevalence of overweight, weight for height (% of children under 5)	1.29	3.54
Prevalence of underweight, weight-for-age (% of children under 5)	12.8	20.51

Finally, it should be noted that underweight and stunting, although below the average of comparator countries, is still very present in children under 5 years of age.

High cost can occur with catastrophic expenditure as a percentage of private expenditure on health (out of pocket expenditure). These direct costs are borne by workers who do not have access to the private insurance system or to the health service provided by the public health service. These are classified as impoverishing expenditure by the WHO.

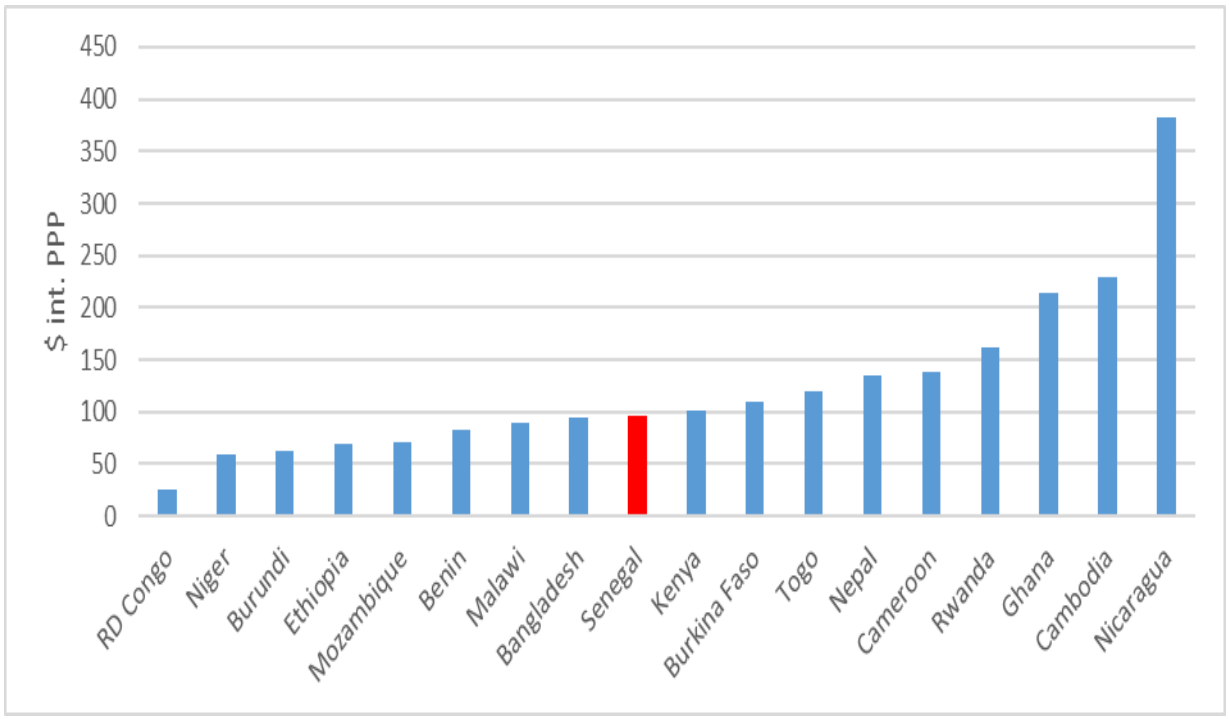
Figure 12- 5: Catastrophic health expenditure as a percentage of private health expenditure



Source: WDI

The analysis of the graph below shows that the amount of catastrophic expenditure in Senegal is not very high compared to the reference countries. In other words, the shadow cost of health does not appear to be very high and therefore Test 1 gives a negative result. In addition to catastrophic expenditure, total health expenditure (private and public) per capita can also be used as a proxy for the shadow cost of the health factor. This indicator could help determine the actual cost of the health system from society's point of view. Again, per capita spending in Senegal is not particularly high in these comparator countries. Though it should be noted that a low level of spending on health is not dispositive in terms of finding a constraint non-binding, health expenditures could be low, and health outcomes could be poor as a result. Or conversely, health expenditures could be high, which suggests a strong need to spend money to adjust to a constraint area due to high health burden. This piece of data is strongest in association with comparison of health outcomes, which are presented throughout this chapter.

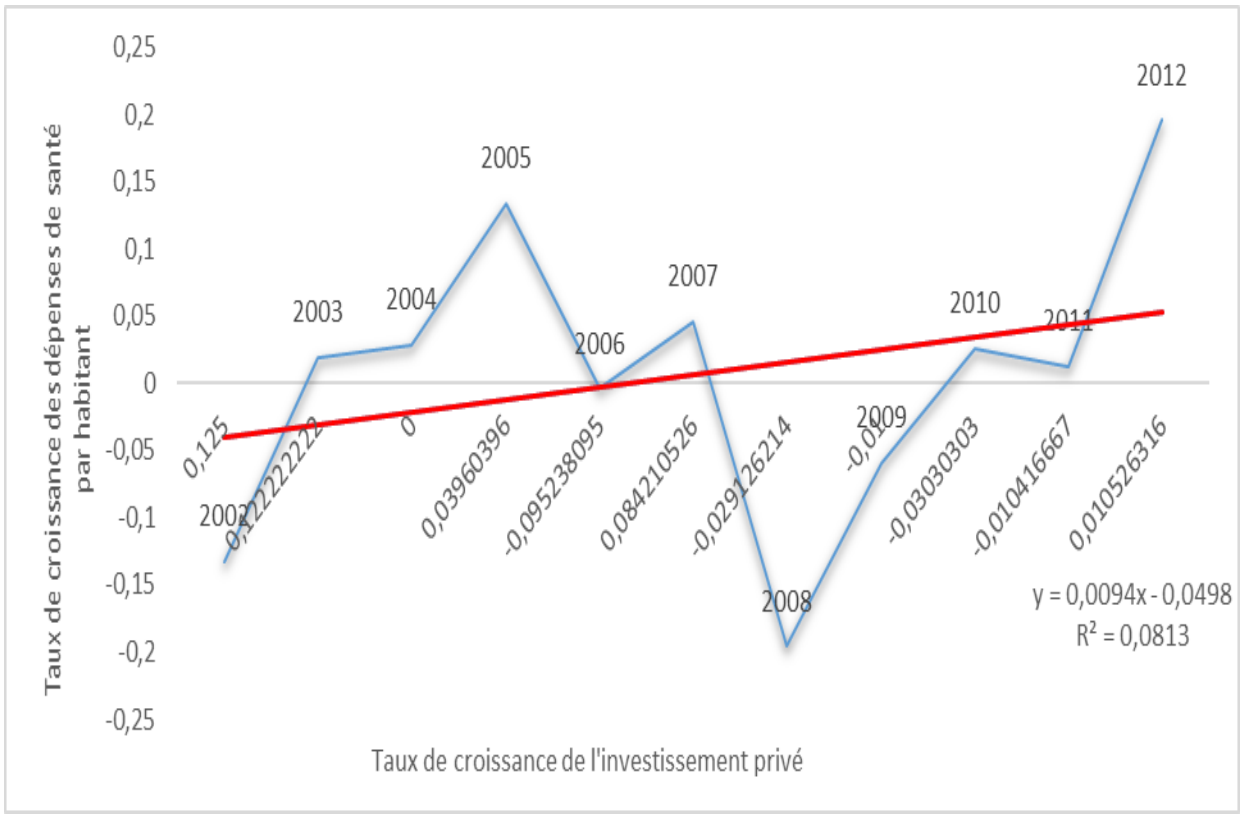
Figure 12- 6: Total health expenditure of PPP converted Per Capita GDP 2003 US$



Source: Global Health Observatory, WHO

In principle, an increase in health expenditure leads to improved access to health services and to an increase in the technical level and the effectiveness of health interventions. In addition, reducing the burden of illness in the workforce stimulates private investment by increasing the return on private inputs (especially labor). In the case of Senegal, the figure below shows a weak correlation between per capita health expenditure and private investment with a very low coefficient of determination. Thus, in terms of impulse responses, the evidence does not show that a relaxation of the health constraint is accompanied by a significant improvement in private investment.

Figure 12- 7: Correlation between health expenditure and private investment as a % of Per Capita GDP



Source: Global Health Observatory (WHO) and WDI

Considering the results of all the above tests, health in Senegal does not constitute a major constraint to private investment. Indeed, financing costs are still average in comparison with comparator countries. Private investment shows little sensitivity to the increase in healthcare spending. However, this result does not mean that Senegal's health system is performing well or optimally. More efforts are required, especially in terms of equity and regional disparity in health infrastructure

CHAPTER 13: IS INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) INFRASTRUCTURE BINDING?

13.1 SUMMARY ANALYSIS

ICT connectivity has expanded significantly in Senegal in recent years. Costs are neither the lowest nor the highest when compared to comparator countries. There are several ICT service providers operating under license and providing services to consumers and firms. Firms do not note ICT as a constraint to their ability to do business in Senegal. According to the WEF, Senegal does rank relatively high in terms of the dynamism that ICT affords to critical processes of discovery and innovation in the economy, as well as impacts for provision of services and government efficiency. However, if ICT were a binding constraint, one should observe an acceleration of growth and value-added as internet and ICT access has expanded in recent years. This has not been the case.

The application of the HRV approach test for ICT illustrates the following constraints:

- With a subscriber base of less than one in 100, Senegal ranks second among the countries chosen after Nicaragua. However, the number of subscribers is still very low even among the comparator countries. So we cannot judge a priori if this is a good performance or not for Senegal.

- The evidence shows that in Senegal the rate of Internet penetration is positively correlated with GDP per head. The number of subscribers increases with the increase in living standards of the population. This result is indicative of the strong correlation between the two variables. Internet is a significant driver leading to higher economic activity which in turn contributes to the formation of wealth. Taking advantage of the improvement in living standards provided by ICT, Senegalese economic agents increasingly engage in intense activities in ICT delivery services.

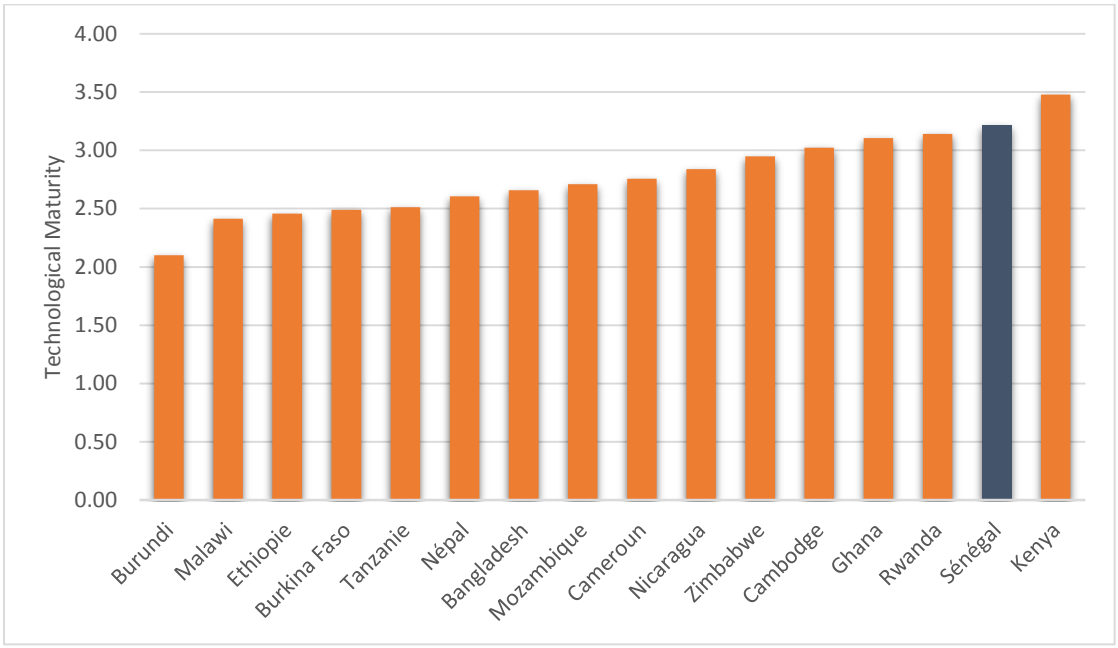
13.2 BACKGROUND AND BENCHMARKING

The digital industry still holds a significant share in the GDP in Senegal. This justifies GOS interest in this sector of the economy to help achieve the objective of the PSE by 2035. The challenges of globalization require firms to adopt and master ICT to be competitive in the markets. Technological maturity measures the ability of an economy to effectively adopt existing technology, at all levels, to enhance the productivity of the industrial fabric through the use of information technology and telecommunications.

Senegal has a good technological maturity to improve the productivity of its industries. In fact, the analysis of Figure 13-1 shows that Senegal is well above its comparator countries with a 3.21 score, just after Kenya which has the highest score (3.48). In summary, the Senegalese industrial fabric benefits from a state of ICT technology favorable to its competitiveness policy.

The drivers of the digital sector on the economy can be significant. Indeed, acceleration and diffusion of ICT can give new impetus to the Senegalese economy and industry by stimulating entrepreneurship, innovation and economic growth.

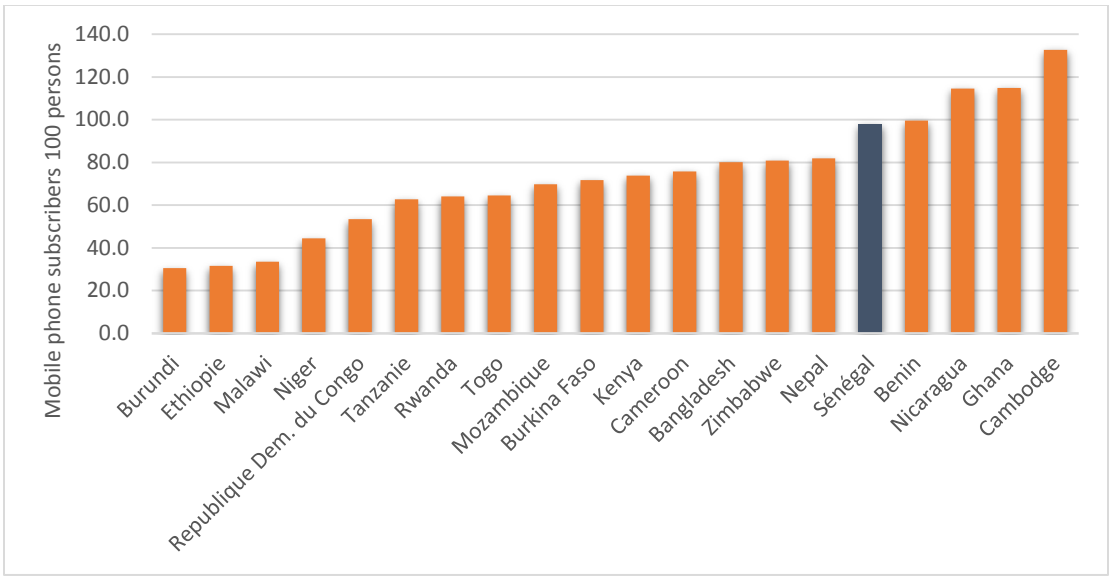
Figure 13- 1: Technological Maturity



Source: Global Competitiveness Index/World Economic Forum (WEF), 2015-2016

Senegal's mobile phone service coverage is above average. The recent opening of the market to two additional operators and the availability of technological infrastructure in the telephony sector have contributed significantly to raising Senegal's leadership in the region. Compared with the reference countries, the coverage of the territory in the use of the mobile network reaches almost 98 percent of targeted users.

Figure 13- 2: Mobile telephone subscribers in 2014

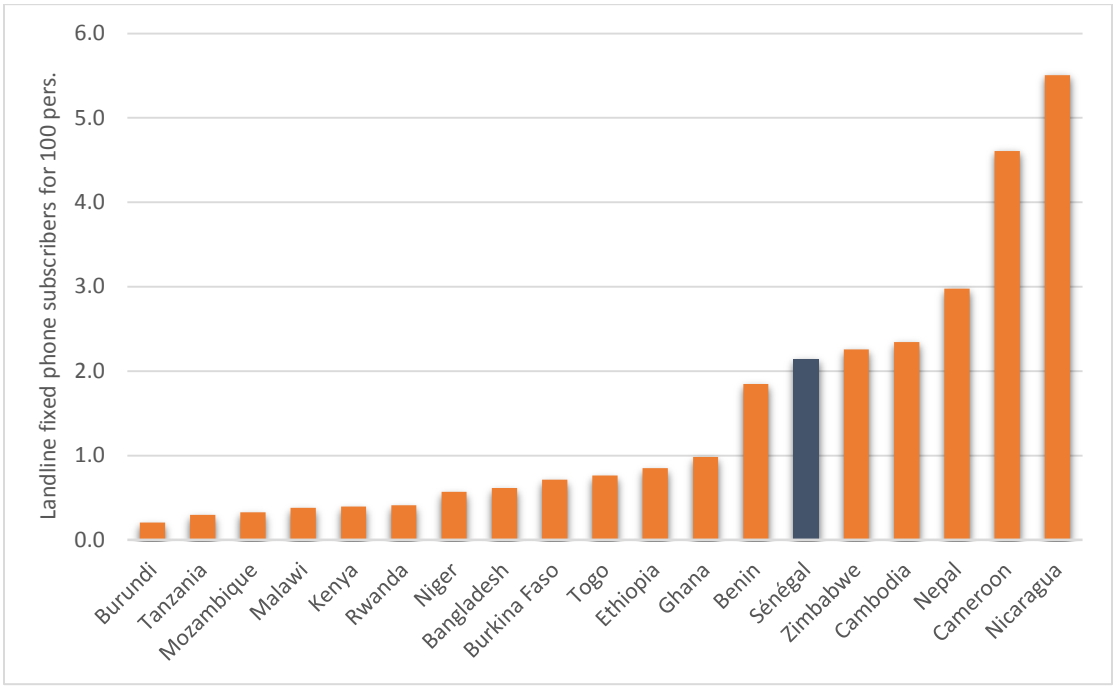


Source: Global Competitiveness Index/World Economic Forum (WEF), 2015-2016

The breakthrough in the mobile telephone service compares poorly with the low coverage of the landline network. Only about 3 out of 100 subscribers continue to be connected through the fixed landline phone services. This result places Senegal behind Cameroon and Nicaragua with respectively 4.6 and 5.5 out of 100 people. The lack of competition exacerbated by the shortfall in fixed-line investments largely explains the weakness of the fixed telephony service offer. However, the downward trend in fixed lines may be characteristic of a country in transition, with a larger increase in mobile network coverage.

The decline of supply of land lines can be a serious obstacle in the development of fixed broadband internet with fiber optics.

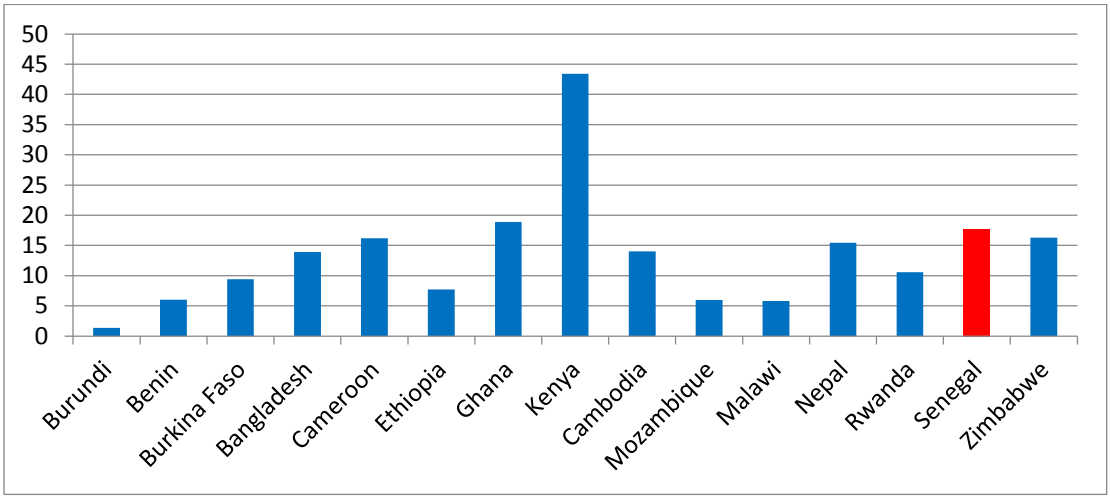
Figure 13- 3: Landline fixed phone subscribers in 2014



Source: Global Competitiveness Index/World Economic Forum (WEF), 2015-2016

Senegal, with an expanding ICT sector performs well with 20% Internet users, falling just behind Kenya which leads the comparator countries. However, the low number of subscribers to fixed telephone weighs heavily on the scale of the challenge to commit new infrastructure investments needed to meet the rate of Internet penetration.

Figure 13- 4: Percentage of Internet users in 2014



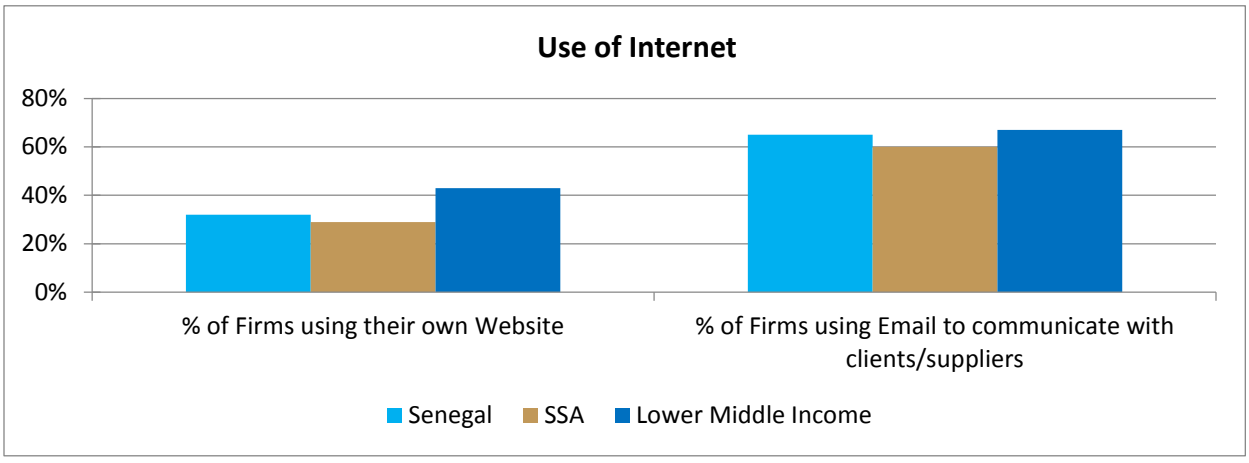
Source WDI

The increased penetration of broadband Internet can yield significant gains in economic growth. Some studies estimate that a 10% penetration increase improves the growth rate by 1.4 point.

The transition to a services-oriented economy requires both the availability of broadband with high bandwidth for a better exchange of information in real time. The subscription to broadband Internet in Senegal remains below one in 100. Such a performance can be considered low compared to Nicaragua where it is more than two (2) in 100.

Telecommunications, although very dynamic, still face constraints such as the lack of a national ICT strategy, a regulatory framework that does not favor the taking into account of technological evolution, the absence of a digital observatory capable of providing comprehensive information on the ICT sector and its contribution to the economy; and the absence of a career training plan for specific skills in ICT and telecom services.

.Figure 13- 5: Use of ICT in business transactions

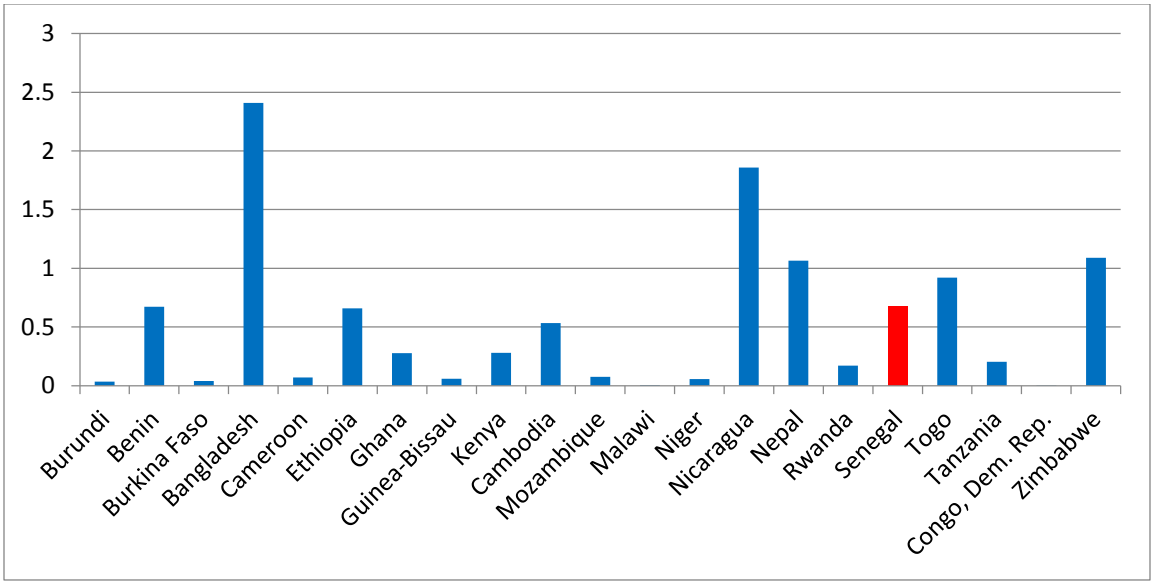


Source: http://www.enterprisesurveys.org (2014 Senegal Enterprise Survey)

Figure 13-5 above indicators show the use of information and communications technologies (ICT) in business transactions. ICT, such as the Internet, are important tools for all firms because they provide even the smallest of enterprises with the ability to reach national and international markets at low cost.

With a subscriber base of less than 1 in 100, Senegal ranks second among the comparator countries behind Nicaragua (2.17). However, the number of subscribers remains very low even within comparator countries. So we cannot determine whether it is a constraint or not for Senegal.

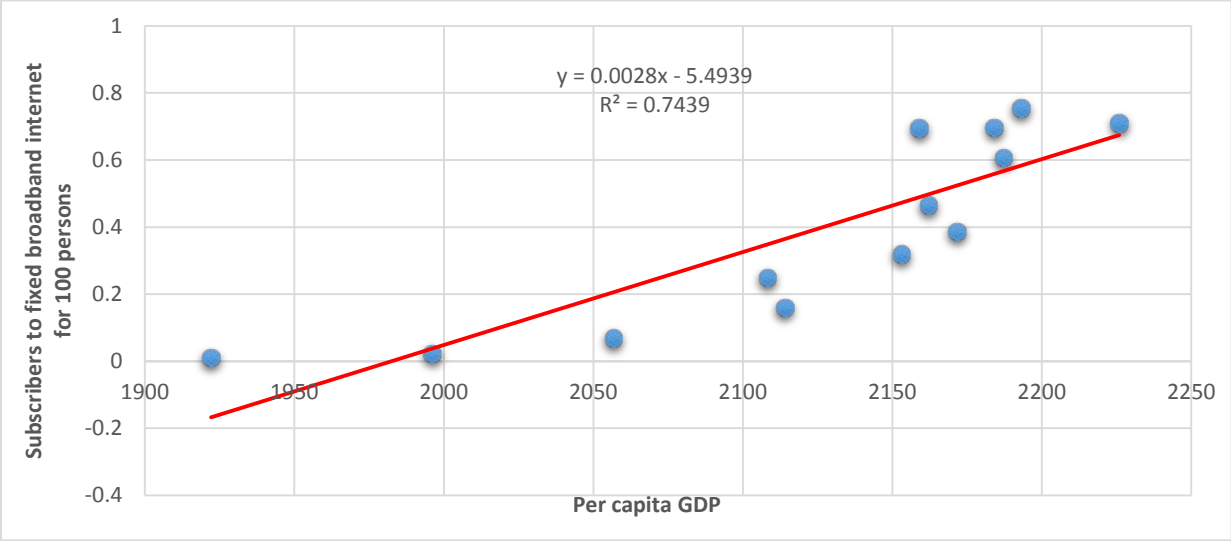
Figure 13- 6: Fixed broadband internet subscriptions (per 100 people) in Senegal and comparator countries



Source: WDI

The evidence from Figure 13-5 shows that in Senegal the internet penetration rate is positively correlated with per capita GDP. The number of subscribers grows with the increase in the standard of living of the population. This result is symptomatic of the strong correlation between the two variables. The induced effects of internet on the economy lead to higher economic activity and the formation of wealth consequently. As the standard of living increases, economic agents increasingly specialize in intensive activities in ICT services.

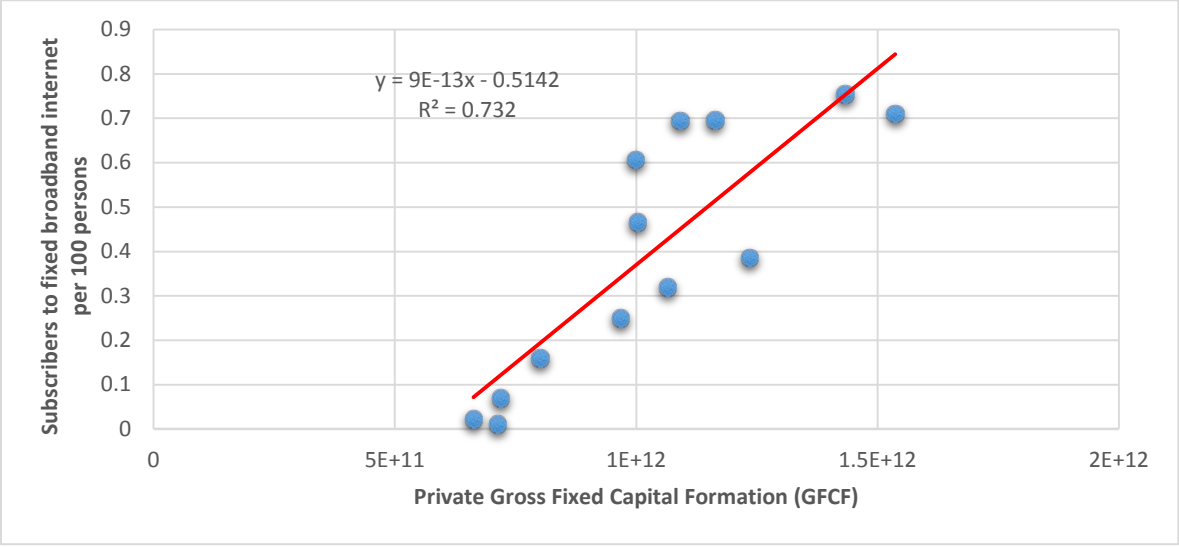
Figure 13- 7: Correlation of subscribers to fixed broadband Internet and per capita GDP per 100 people



Source: WDI

The increase in investments will result in an increase of the number of subscribers to fixed broadband internet with the improvement of accessibility factors such as the reduction of costs. Figure 13-8 below shows the link between the number of Internet subscribers and private investment. In Senegal, access to the Internet seems to be highly dependent on the volume of private investment in the economy.

Figure 13- 8: Correlation of subscribers to fixed broadband Internet and private GFCF per 100 persons



Source: WDI

In a logic of development, companies often seek to circumvent the constraint they face in order to maintain their productivity.

CHAPTER 14: ARE CRIME AND INSECURITY BINDING?

Senegal appears, in several respects, to be a stable country unlike many African countries. The country has never experienced a coup or military regime since achieving its independence 56 years ago. Since 1960, with the exception of two localized crises, Senegal's political and geopolitical situation remain stable. Crime imposes costs on firms when they are forced to divert resources from productive uses to cover security costs. Both foreign and domestic investors perceive crime as an indication of social instability, and crime drives up the cost of doing business.

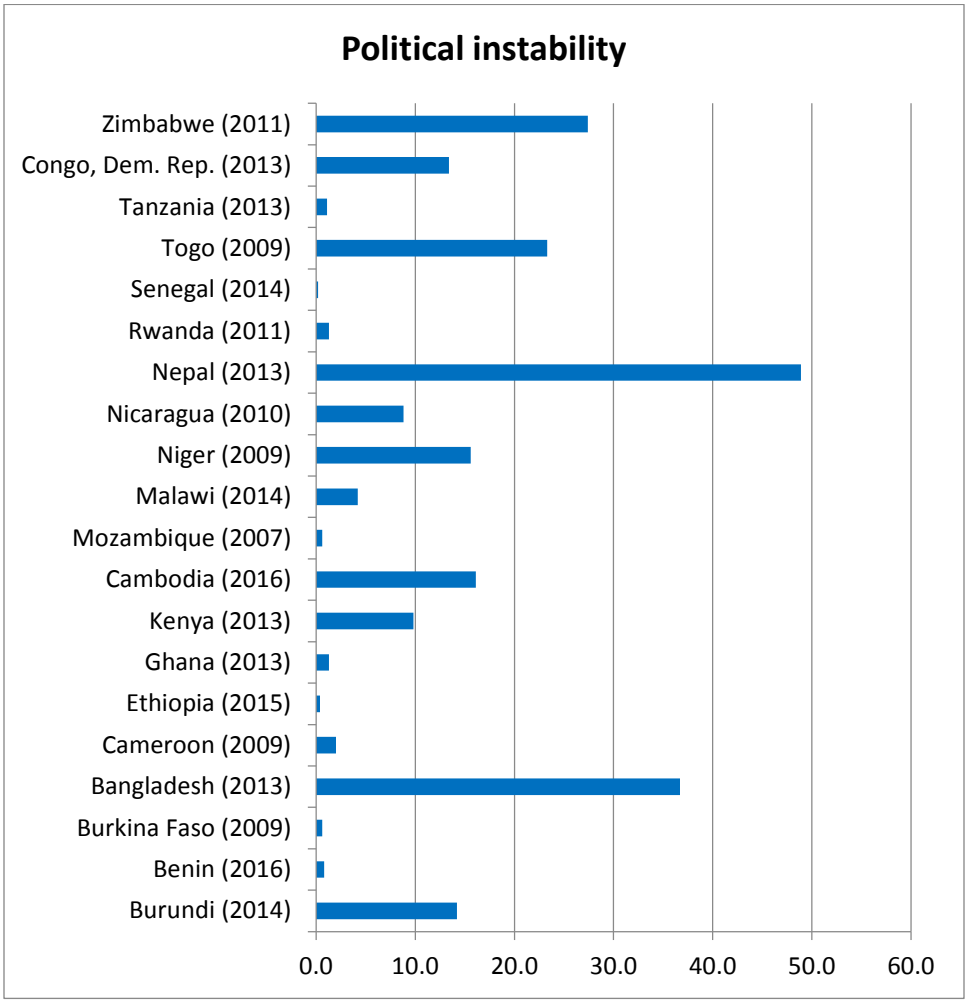
14.1 SUMMARY ANALYSIS

Crime and insecurity are not constraining in Senegal. Senegal has long been regarded as an anchor of stability in a West Africa region that is vulnerable to political unrest. It is the only mainland West African country that has never had a coup d'état since gaining independence in 1960. Senegal experiences sporadic incidents of political violence during national elections due to closely contested democratic processes. The last 2012 presidential election reinforced Senegal's reputation as the strongest democracy in West Africa. Public protests occasionally trigger isolated violent incidents when unions, opposition parties, merchants or students demand better salaries, working conditions or other benefits. These protests reflect the growing popular impatience at the slow pace of reforms, low growth, widespread poverty, and high unemployment. Sporadic incidents of violence caused by petty banditry continue in the Casamance region, which has suffered from a three-decade-old conflict ignited by a local rebel movement seeking independence for the region, but the level of violence has declined in recent years as the government and rebel groups have engaged in negotiations to resolve the conflict.

14.2 BACKGROUND AND BENCHMARKING

Senegal is characterized by its democracy, multiparty system, the solidity of its institutions, and its commitment to freedom of expression and to political and social rights. The country has a moderate level of risk according to Credit Risk International. Indeed, according to the World Bank's 2014 Enterprise Surveys, only 0.3% of Senegalese companies declare political instability their biggest obstacle. Senegal compares well with the comparator countries as only Ethiopia has a lower rate.

Figure 14- 1: Percent of firms identifying political instability as a major constraint

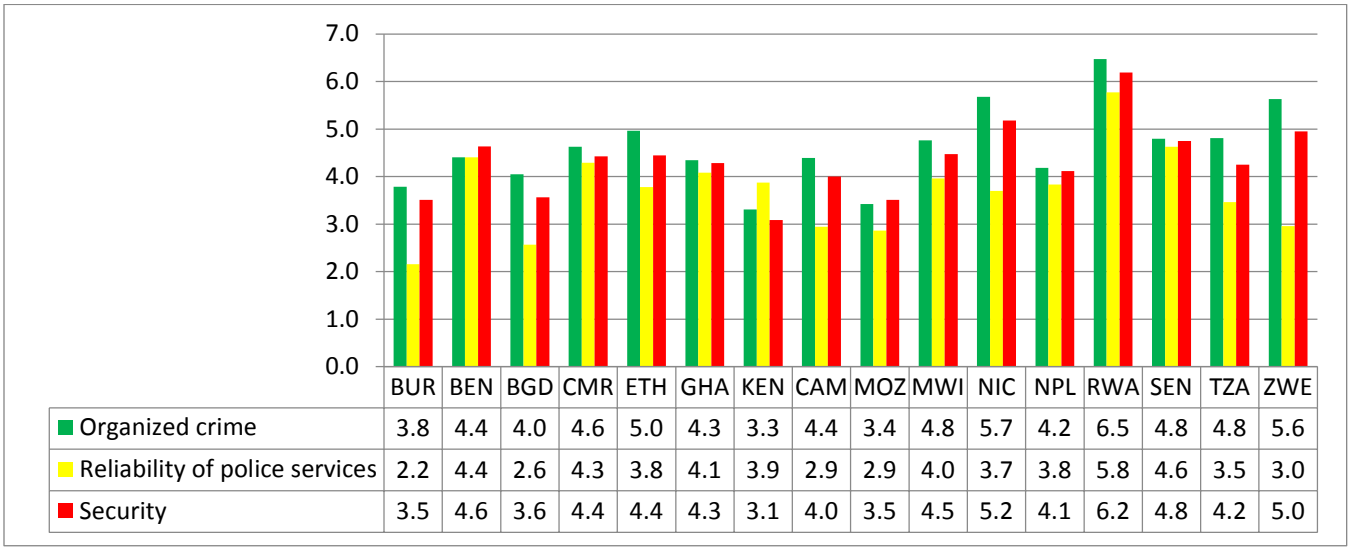


Source: Enterprise Surveys, 2015

Based on the results of the survey, instability is not a constraint. However, in the security field, Senegal is ranked 68th in the world. Thus, the country is fourth on the list of comparator countries behind Rwanda, Nicaragua and Zimbabwe which are respectively 5th, 46th and 59th.

For the reliability of security services, only Rwanda ranked 21st outperformed Senegal (46th).
In terms of organized crime, Senegal ranks 6th and comes behind Rwanda, Nicaragua, Zimbabwe, Ethiopia and Tanzania.

Figure 14- 2: Security issues in comparator countries

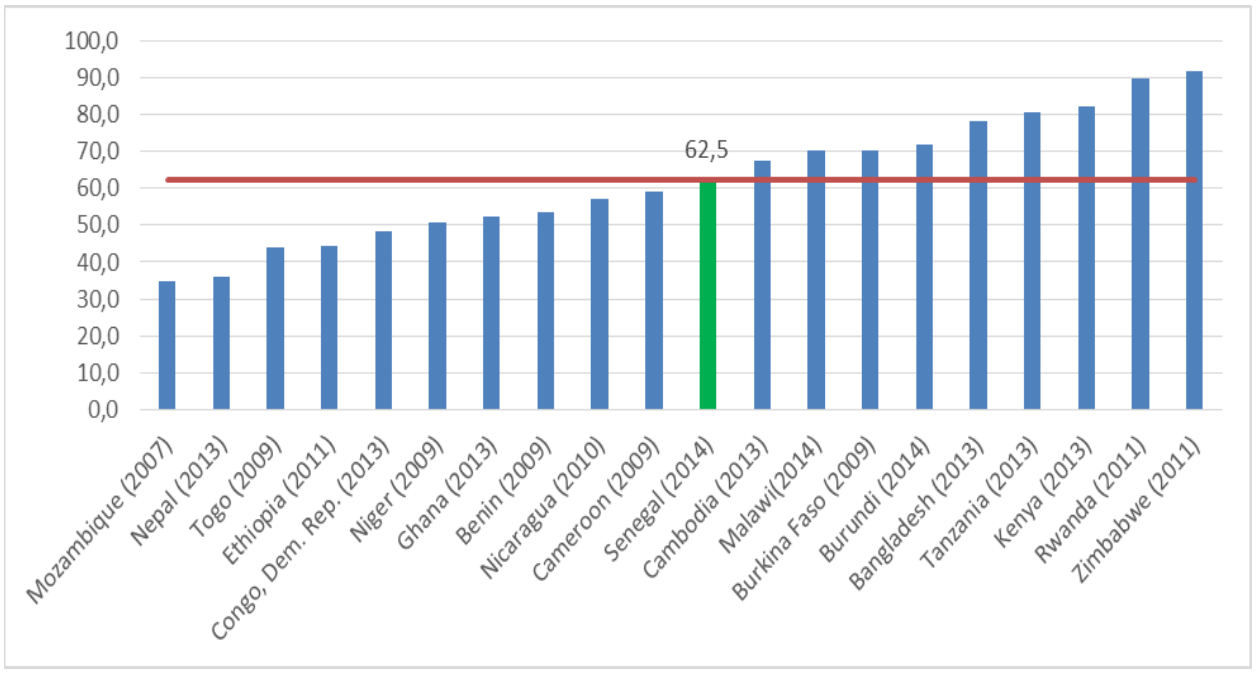


	BUR	BEN	BGD	CMR	ETH	GHA	KEN	CAM	MOZ	MWI	NIC	NPL	RWA	SEN	TZA	ZWE
Organized crime	3.8	4.4	4.0	4.6	5.0	4.3	3.3	4.4	3.4	4.8	5.7	4.2	6.5	4.8	4.8	5.6
Reliability of police services	2.2	4.4	2.6	4.3	3.8	4.1	3.9	2.9	2.9	4.0	3.7	3.8	5.8	4.6	3.5	3.0
Security	3.5	4.6	3.6	4.4	4.4	4.3	3.1	4.0	3.5	4.5	5.2	4.1	6.2	4.8	4.2	5.0

Source: WEF, 2015

This rank while more or less comfortable compared to comparator countries, indicates that in Senegal security is not a major constraint for companies. In Senegal 62.5% of the companies surveyed indicate that they cover their security costs. This cost is slightly higher than the average (62.3%) of the comparator countries.

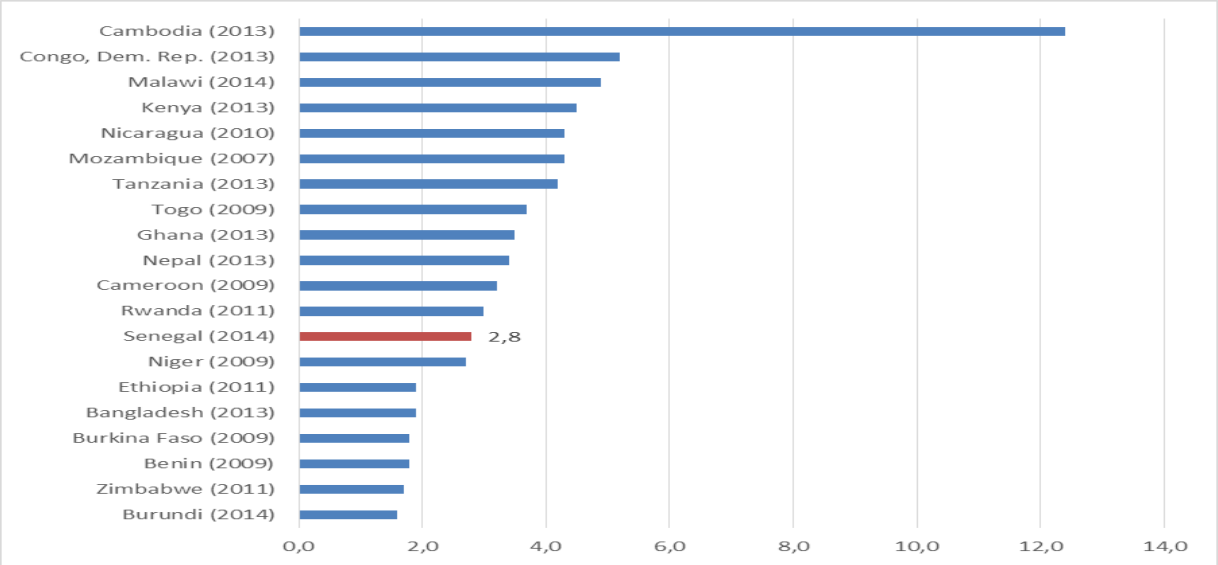
Figure 14- 3: Percentage of companies paying for security



Source Enterprise Surveys, 2015

The cost of security for companies based in Senegal is not a major constraint. Moreover, the average security cost of 2.8% of annual turnover is judged to be more or less low compared to the reference countries.

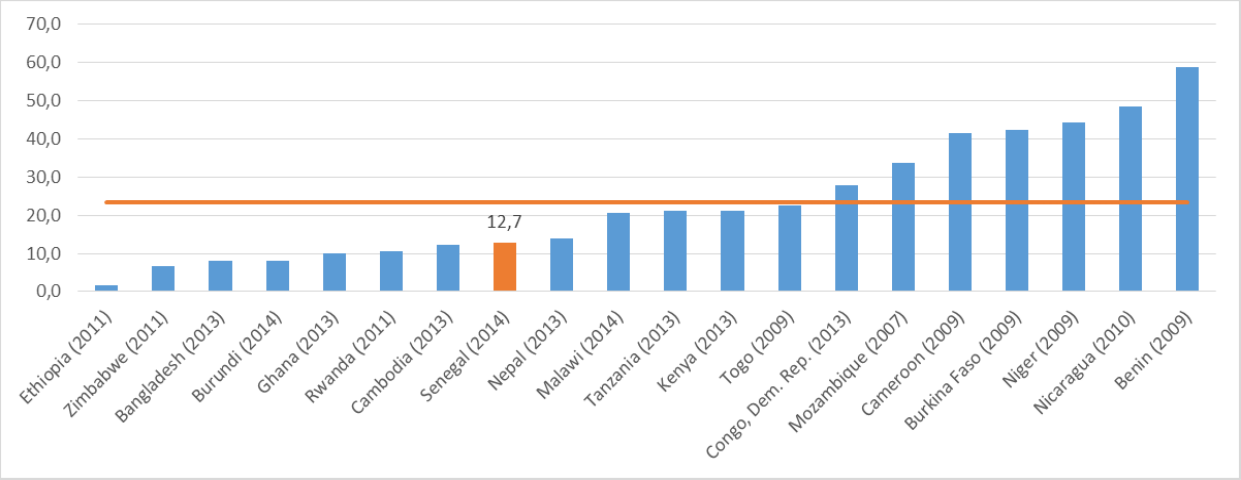
Figure 14- 4: Average security cost (% of annual turnover)



Source Enterprise Surveys, 2015

In most of the comparator countries, security is less costly and less burdensome than in Senegal. However, the World Bank's "Enterprise Surveys" indicates that in Senegal 12.7% of companies consider crime, theft and disorder as a major constraint. This rate is lower than the comparator countries average (23.3%) and is lower than that of Nepal, Malawi, Tanzania, Kenya, Togo, DRC, Mozambique, Cameroon, Burkina Faso, Niger, Nicaragua and Benin.

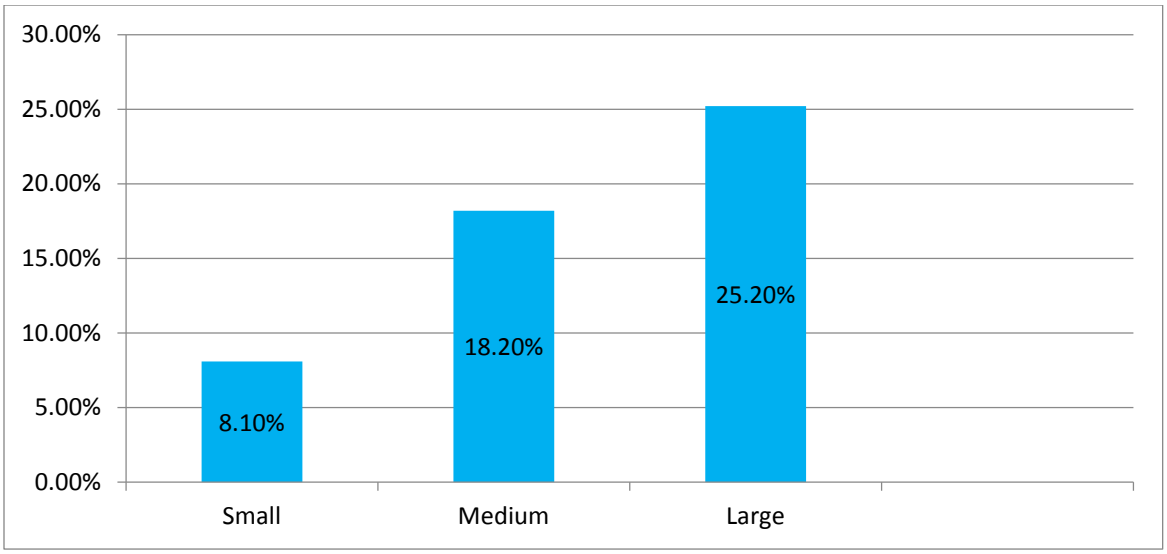
Figure 14- 5: Percent of businesses identifying crime, theft and disorder as a major constraint



Source Enterprise Surveys, 2015

In short, theft, disorder and criminality are not major constraints for Senegal. However, the identification of crime, theft and disorder as a major constraint is more pronounced in large firms (25.2%).

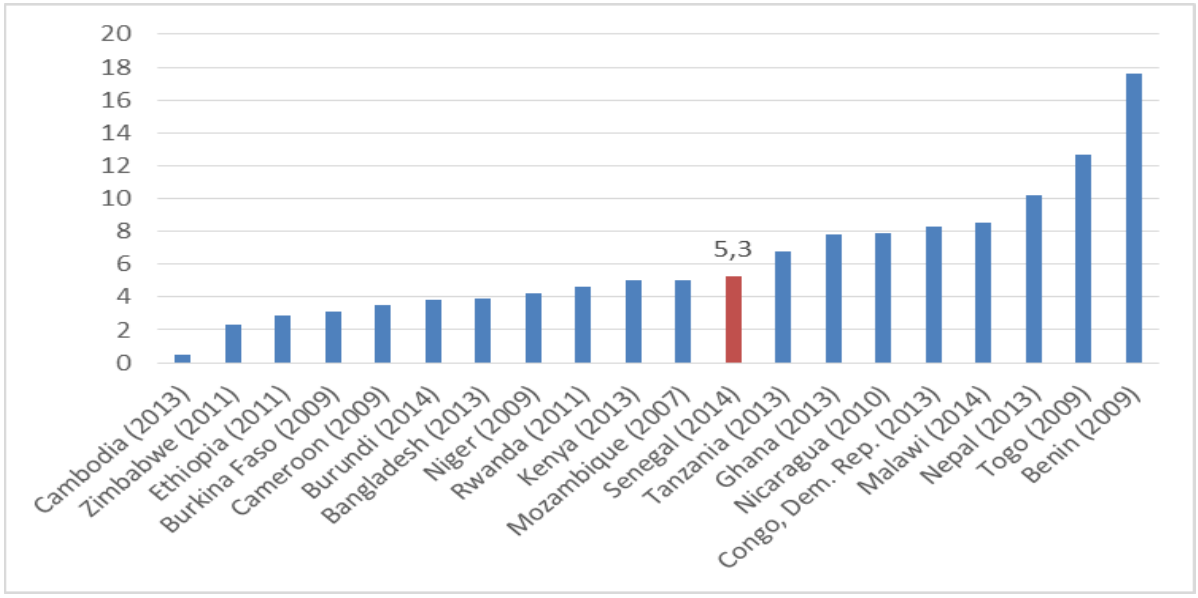
Figure 14- 6: Proportion by size of firms that identifies crime, theft and disorder as a major constraint



Source: World Bank's Enterprise Surveys

On average, 5.3% of companies identify their losses as a percentage of annual sales due to theft and vandalism. This is also more pronounced in large firms (44%).

Figure 14- 7: Average loss due to theft and vandalism (% of annual sales)



Source Enterprise Surveys, 2015

Insecurity is not a major constraint for companies based in Senegal; out of the 19 comparator countries, 9 pay more for their security than Senegal. Compared to comparator countries, it is ranked 4th in terms of security. In addition, its security services are deemed reliable.

On the other hand, given the evolution of terrorism methods and the reality of this threat, it would be appropriate to rethink the current security measures in order to better adapt them to the context, instead of complacency.

ANNEX 1: LIST OF COMPARATORS

Using the World Development Indicators, the team identified countries that met the following criteria:

- 2014 country population >= 6,000,000
- 2005-2014 average GDP growth rate >= 3.7
- GDP per capita (2011 PPP) <=$5,000
- Mineral and or oil rents (as % of GDP) <=20%

After the exclusion of some countries based on the technical team's discussion of comparability (e.g., Afghanistan was excluded because of its recent conflict and political history), the following list of comparators result:

	Country	2014 PIB/ph (2011 PPP US$)	Population
1	Bangladesh	$ 2,980	15,900,000
2	Benin	$ 1,940	10,600,000
3	Burkina Faso	$ 1,550	17,600,000
4	Burundi	$ 734	10,800,000
5	Cambodia	$ 3,110	15,300,000
6	Cameroon	$ 2,840	22,800,000
7	DRC	$ 712	74,900,000
8	Ethiopia	$ 1,430	97,000,000
9	Ghana	$ 3,890	26,800,000
10	Kenya	$ 2,820	44,900,000
11	Malawi	$ 784	16,700,000
12	Mozambique	$ 1,080	27,200,000
13	Nepal	$ 2,270	28,200,000
14	Nicaragua	$ 4,690	6,010,000
15	Niger	$ 895	19,100,000
16	Rwanda	$ 1,580	11,300,000
17	Tanzania	$ 2,420	51,800,000
18	Togo	$ 1,360	7,120,000
19	Zimbabwe	$ 1,710	15,200,000

ANNEX 2: LIST OF STAKEHOLDERS CONSULTED

Locality	Institution or individual	Number of persons consulted	Sub-total
Dakar	BGFI Bank	01	
	Chambre de Commerce, de l'Industrie et de l'Artisanat de Dakar	07	
	Conseil Sénégalais des Chargeurs (COSEC)	04	
	COFINA BANK	01	
	DP World	01	
	TANGUS	02	
	Gaindé 2000	04	
	GFM	03	
	SEDIMA	02	
	APIX	01	
	FONGIP	03	
	Ministère de Promotion des Investissements	03	
	BOA	01	
	Direction de la formation professionnelle et Technique	03	
	OGSF (Observatoire de la qualité des services financiers)	01	
	PAMECAS	02	
	CBAO	01	
	Compagnie Sucrière du Sénégal (CSS)	01	
	Direction de l'enseignement supérieur privé	01	
	BOS/PSE	03	
	FONSIS	02	
	Comité de Lutte contre les Violences faites aux Femmes (CLVF)	05	
	Observatoire Nationale de la Parité	06	
	Agence Nationale de l'Aménagement du Territoire	06	
	Fédérations des Associations Féminines du Sénégal	05	
	Association des Juristes du Sénégal	03	
	Femmes entrepreneurs	04	
	Professor Amsatou SOW Sidibé	01	
			75
Mbour	Association of Women fish traders	08	
	local transporteurs	11	
	Seamstresses' association	06	
	Balaye Ba the biggest transporter in the region.	01	
			26
Touba	Organisations de transporteurs	25	
	Organisations de Producteurs	07	
	Mairie de Touba	05	
	Groupements de femmes	25	
	Groupements de jeunes	23	
	Porte-parole du Khalife des Mourides	01	
	Marabout Industriel, Secteur de l'Eau	01	
			87
Daara Pire	Responsables du Daara	04	
Daara Fass Touré	Abdou Touré, Responsable du DAARA	01	
			05
Mekhe	Artisans de Mékhé	20	
Saint Louis et vallée	Agence Régionale pour le Développement (ARD)	02	
	Groupe SENHUILE	02	
	les Grands Domaines du Sénégal (GDS)	03	
	le Réseau des Agricultrices du Nord (REFAN),	11	

	le Projet pour le Développement Inclusif et Durable de l'Agrobusiness au Sénégal (PDIDAS),	04	
	le Groupe d'Etudes et de Recherches en Genre et Sociétés de l'Université Gaston Berger (GESTES/UGB),	04	
	le groupement des horticulteurs de Saint-Louis.	03	
	Producteurs de riz des zones de Podor, Matam, Dagana et Lac de Guiers	14	
	Groupe des transporteurs/stockeurs.	05	
	ISRA,	01	
	SAED	08	
	FONGIP Zone Nord	01	
	CNAAS (Caisse Nationale d'Assurance Agricole du Sénégal)	01	
			70
Ziguinchor	Acteurs du secteur de l'Agriculture	16	
	Acteurs du secteur du Commerce	19	
	Acteurs du secteur de la Couture	01	
	Acteurs du secteur de l'Elevage	04	
	Acteurs du secteur de la Formation	07	
	Acteurs du secteur de l'Horticulture	34	
	Acteurs du secteur de la Pêche	21	
	Acteurs du secteur de la Teinture	02	
	Acteurs du secteur du Tourisme	09	
	Acteurs du secteur de la Transformation	26	
	Acteurs du secteur du Transport	06	
	Crédit Mutuel Sénégalais	02	
			147
TOTAL		410	

ANNEX 3: SUMMARY OF FINANCE, INVESTMENT AND TRADE FINDINGS

As an input to the Constraints Analysis, Dalberg Associates were hired to look into industries in Senegal to understand how they are affected by the various factors examined within the CA methodology. The sectors or subsectors were chosen based on several criteria, such as those already identified by the GOS as a priority and included within their strategic plan, potential for economic growth and/or employment generation, current role in the economy or labor market, etc. Specifically, this analysis was useful for helping the country team understand the micro risk constraint in "Distortive Business Policy Environment" and for informing the deeper dive into the root causes of the constraint.

The figures that follow provide illustrative examples of how the potential constraints to an economy are felt by several agro-processing value chains, and company case studies were used to provide insights into how firms may be affected by microeconomic risks, such as those identified within the Distortive Business Policy Environment constraint.

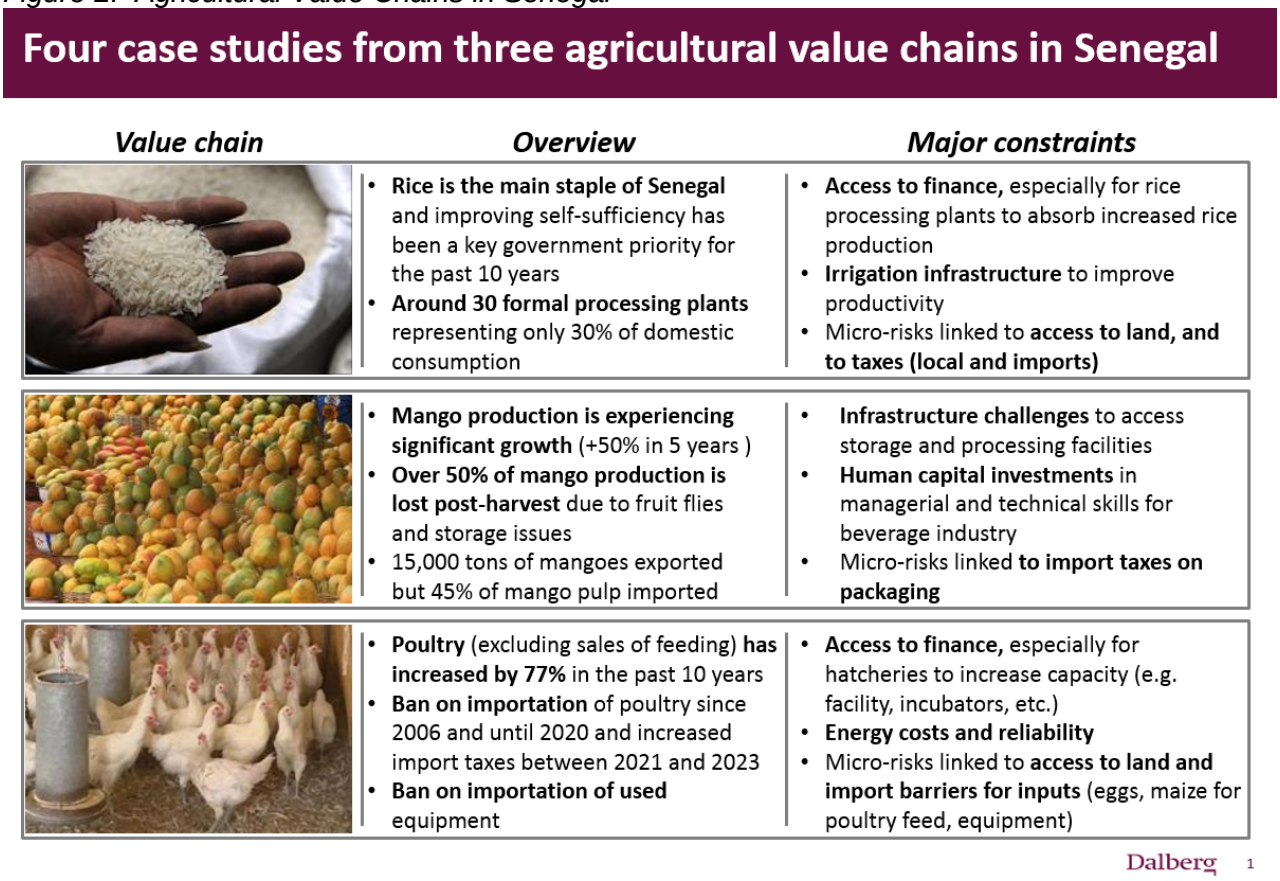
Figure 1: Constraints in agro-processing value chains

	Access to finance: Firms struggle to access finance affordably and reliably	**Infrastructure:** Firms have unreliable water, energy, and road infrastructure	**Human Capital:** The workforce lacks adequate skills to fulfill key roles	**Market linkages:** The market is insufficiently developed to allow firms to build domestic and international relationships	**Market failures:** The market is uncompetitive with barriers that prevent firms from entering	**Micro risks:** Local firms cannot compete within the Senegalese market and lack incentives to invest in productivity
Rice						
Maize						
Tomatoes						
Onions						
Green Beans						
Bissap						
Baobab						
Mango						
Groundnut						
Sesame						

Legend	Minor constraint	Moderate constraint	Major constraint

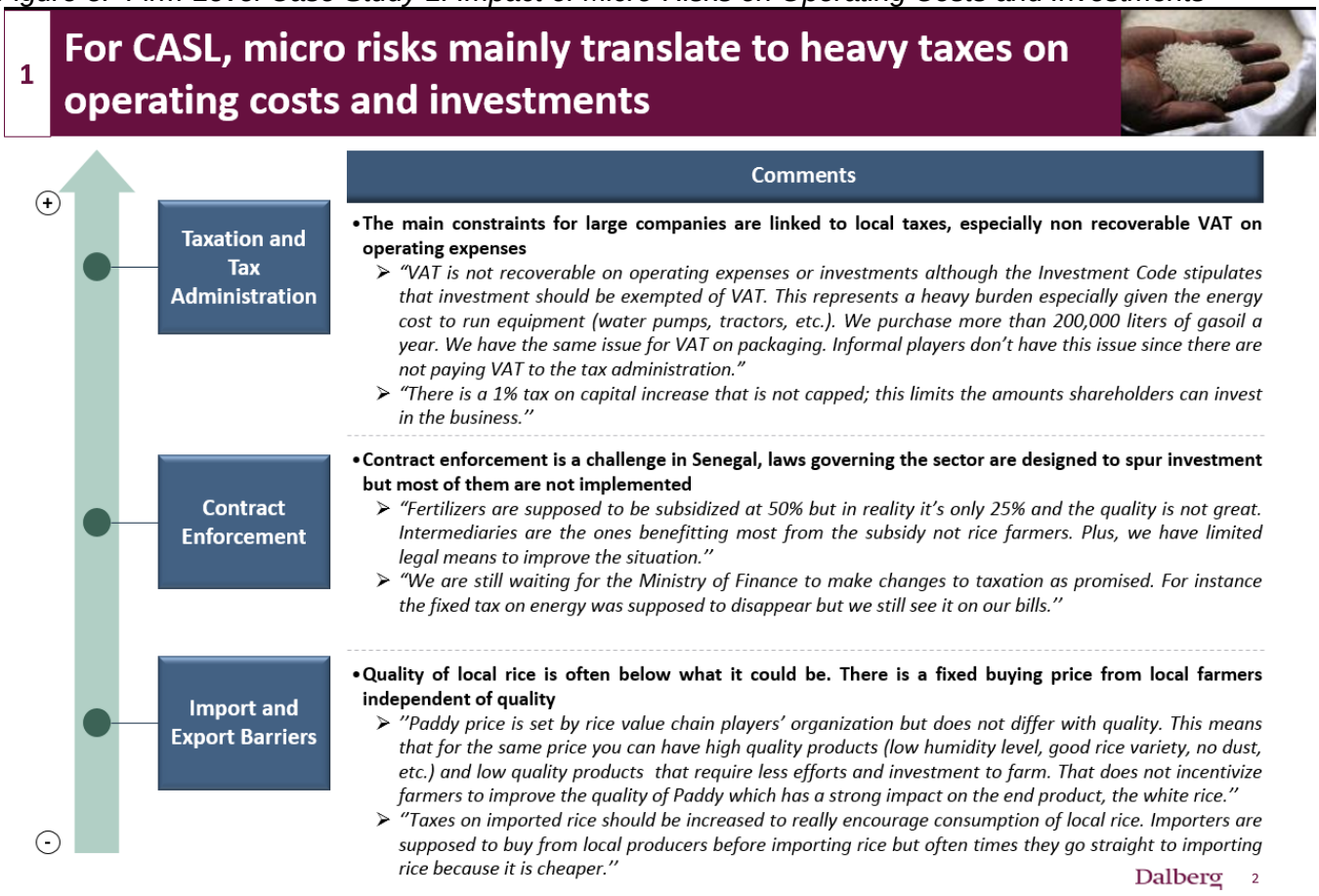
Source: Dalberg Private Sector Analysis [Unpublished)

Figure 2: Agricultural Value Chains in Senegal



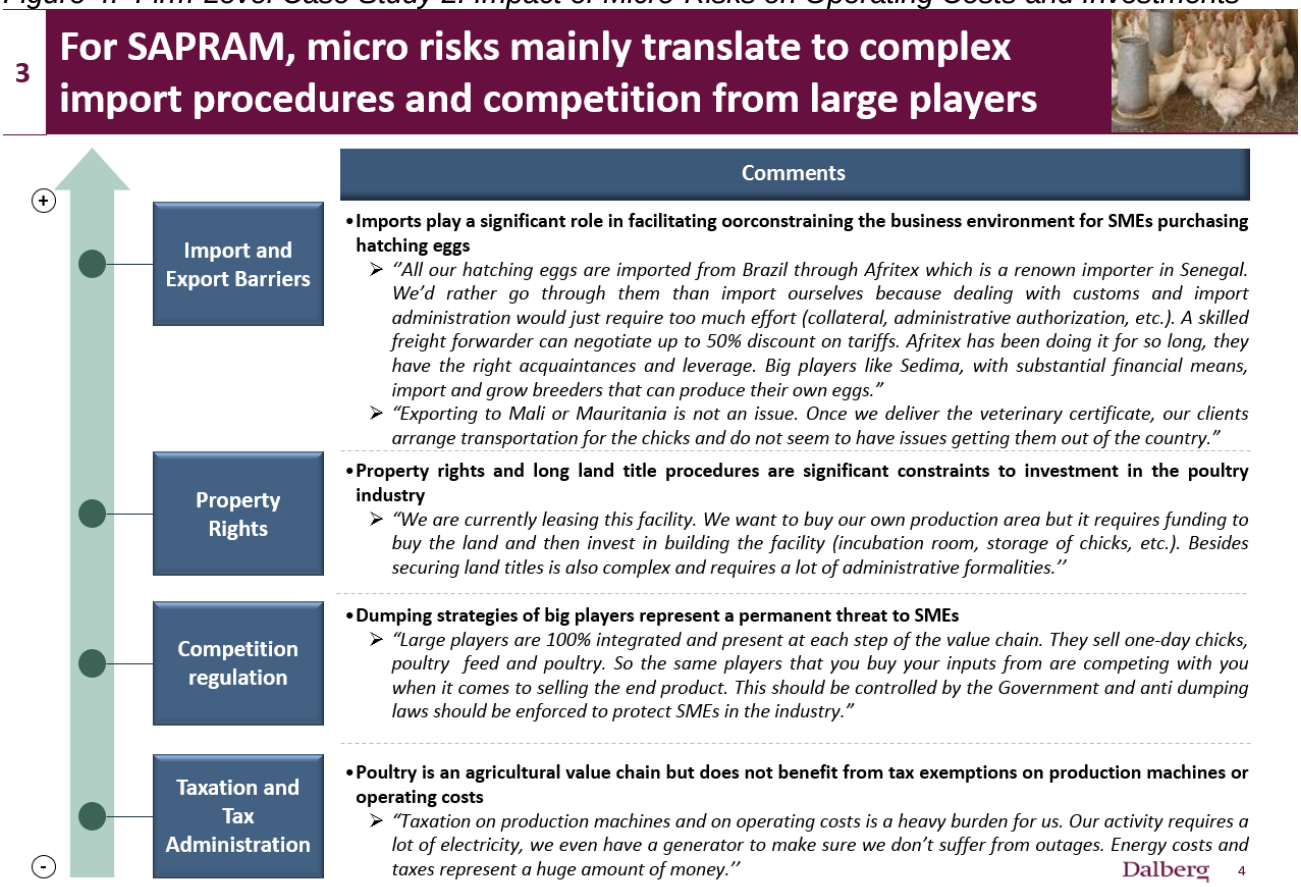
Source: Dalberg Private Sector Analysis (unpublished)

Figure 3: Firm-Level Case Study 1: Impact of Micro-Risks on Operating Costs and Investments



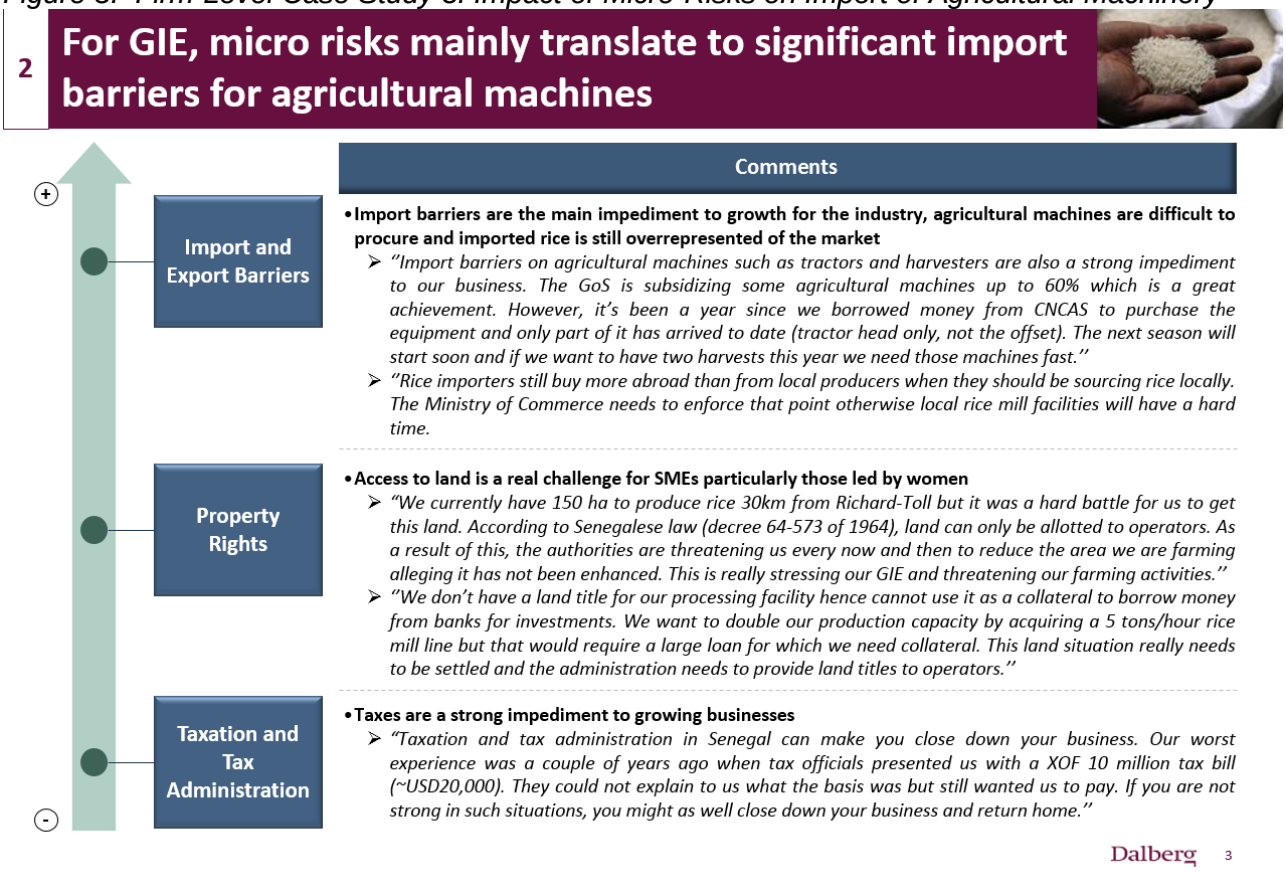
Source: Dalberg Private Sector Analysis (unpublished)

Figure 4: Firm-Level Case Study 2: Impact of Micro-Risks on Operating Costs and Investments



Source: Dalberg Private Sector Analysis (unpublished)

Figure 5: Firm-Level Case Study 3: Impact of Micro-Risks on Import of Agricultural Machinery



Source: Dalberg Private Sector Analysis (unpublished)

SUMMARY AND CONCLUSIONS

Based on the analysis, the following list of constraints has been identified which are divided here into —binding, —severe, but non-binding and —non-binding areas according to the Constraints Analysis methodology.

Categories of Constraints	Areas
Non-Binding	**Geography** is more an opportunity than a constraint for growth in the country, as Senegal's geographic location makes international trade favorable and offers immense opportunities for the country's transit potential, tourism, export of fish products, refined petroleum products, phosphoric acid, gold and cement.
	Macro Risks do not constitute a constraint for growth in Senegal, taking into consideration Senegal's good macroeconomic management and fiscal position. Senegal's debt is moderate relative to GDP, although it is growing. Inflation is relatively stable, and the GOS is building adequate reserves to maintain monetary soundness and cover its trade deficit.
	Water Infrastructure (for Irrigation). The evidence suggests that water shortage does not rise to the level of major binding constraint to private investments and economic growth. Senegal's mortality rate due to unsafe drinking water, poor sanitation, and general lack of hygiene is relatively low compared to comparator countries. However, as the analysis shows, Senegal's agriculture is mainly rainfed and seasonal (03 months of rain per year) and is highly dependent on the availability of water. Water management thus constitutes a major challenge for the development of the sector.
	Import/Export Infrastructure. Senegal relatively well placed amongst comparators in terms of trade-related infrastructure, specifically port and airport quality. Senegal's performance in innovating and diversifying its export products has been real, though disappointing in some respects. The sophistication of its products and the complexity of the economy are fundamental to effective structural transformation. Both aspects have appeared low compared to reference countries. The market failure in innovation seems to be a reality, but it is difficult to ascertain whether it is a constraint for growth in Senegal.
	Innovation (for market failures and communications) is not a constraint for growth in Senegal considering inter-alia the availability of the latest technologies in the country and the ability to innovate and increase the diversity and sophistication of economic production if given the chance (e.g., exchange rate devaluation). Senegal has a good technological maturity to improve the productivity of its industries as evidenced by Senegal's highest score above its comparator countries.
	Human Capital (for Health) is not a major constraint to private investment as health care funding costs remain below average compared to comparator countries, and private investment shows little sensitivity to rising health costs.

	Crime and Insecurity are not constraining in Senegal. Entrepreneurial climate is widely perceived favorably for security costs. This is especially evident when compared to the benchmark SSA countries. Firms in Senegal generally rate the effect of crime on firm sales, policing of crimes, and resolution of commercial disputes in courts as fair.
Severe, but Non-Binding	**Human Capital** in Senegal is a binding constraint due to the poor general skills and education indicators. However, other indicators suggest Senegal's low level is adequate for current economic production. The surveys raised several concerns about the constraints posed by the lack of adequate skilled manpower. The analysis of the data available shows that the returns to education in Senegal remain relatively low which suggests that human capital is not a binding constraint in Senegal.
	Access to Finance. The evidence suggests that, while critical, cost of finance does not rise to the level of major biding constraint to private investments and economic growth considering, inter-alia, Senegal's lowest intermediation margin and interest rates which are moderate particularly for short-term loans, and Senegal's lowest Borrowing Interest Rate of the WAEMU and its largest number of new credits extended within the Union.
	Transport. Transportation infrastructure does not appear to be a binding constraint to economic growth considering: Senegal's port traffic and significantly better quality of ports infrastructure than countries with similar level of income; Senegal's low density of roads relative to its comparators despite their good quality; Senegal's average quality of air transport infrastructure despite a below average in both the number of passengers transported and the quantity of freight carried compared to countries with similar level of income; and Senegal's failing main railroad despite its better than average ranking among comparator countries. Nonetheless, given that supply side indicators appear on par with other countries at Senegal's level of development, and businesses rate these issues low in their ranking of obstacles, there is no evidence that infrastructure is a binding constraint in Senegal.
	Land. Despite the difficulty of access to rural land and the discrimination and inequity identified in the land laws, the evidence shows that insecure land tenure is not a binding constraint to Senegal's growth. The shadow price of land tenure appears to be quite high in terms of property registration and transfer, but low in terms of poor quality of land administration. The evidence indicates that land tenure insecurity and low social status are not a constraint on investments in agriculture.
	Contract Enforcement as a single constraint does not appear to seriously affect the investment decision of firms and as such does not rise to the level of a binding constraint. In terms of the four tests, contracts enforcement and property rights meet three of the four tests possibly being met when one considers **property rights**. There is therefore a strong case to be made for contracts enforcement and property rights being an important constraint to growth of the private sector in Senegal.

Binding	**Energy Sector.** The high cost of energy, coupled with unreliable supply (especially for electricity), is a key constraint to private sector growth and also contributes to undermining the fiscal framework. Availability of electricity in Senegal is a binding constraint to investment and growth in the economy considering, inter alia, the frequent power outages, the high cost of electricity, the low access to electricity in the countryside, and to a lesser extent, the reliability of power supply which reduces firms' cost-effectiveness by increasing costs and uncertainty of production.
	Microeconomic Risks: Distortionary Business Policies (DBP). Micro risks pertaining to Labor Market Regulations, Import Barriers, and Taxation and Tax Administration are binding constraints to growth in Senegal. These micro distortionary business policies and policy environment contribute to a large informal sector, excessively high taxation, weak contract enforcement, unpredictable and inefficient regulatory environment, policy and institutional ineffectiveness, and ineffective measures to facilitate imports for both domestic consumption and for value-added re-export.

Indicator	Shadow Price Test 1	Growth Test 2	'Circumvention' Test 3	'Non-reliance' Test 4	Other evidence	Binding, Possibly binding, or Not binding?
Finance						
International Finance	Lowest borrowing interest rate and lowest intermediation margin of the WAEMU countries, but high collateral	Credit to private sector has been increasing, with no resulting growth. Investment does not follow reductions in interest rates	Percentage of firms that auto-finance their own activity is below the average of comparators, but percentage of firms that rely on supplier credits is well above the average but they represent only 12%	Large and foreign firms thrive because they can access foreign capital	Relatively high levels of FDI and remittances	**Not binding**
Local Finance	Interest rates are moderate, but primarily on short-term loans	Credit bureau coverage does not relate to credit to private sector	Banks require high rates of collateral. Firms more likely to finance investment out of retained earnings	Knowledge-intensive industries are growing relative to un-intensive	Smaller borrowers are the most negatively affected by the banking system inefficiencies	**Not binding**
Natural Capital	The geography makes international trade favorable. The top foreign exchange earners are tourism, followed by exports of fish products, petroleum oils, phosphoric acid, gold and cement.	Test not applied	Test not applied	Test not applied	Senegal made trading across borders less costly by opening the market for transport, thereby increasing competition.	**Not binding**
Human Capital						
Education	Private market returns to education are below global and comparator average	No data available to apply test	Senegalese managers have more experience than SSA or globally Out-migration of university graduates	Knowledge-intensive industries are growing relative to non-intensive industries	Moderate level of emigration by university graduates. Poor general indicators suggest a potential constraint,	**Not binding**

			labor is moderate to high		however, other indicators suggest Senegal's low level is adequate for current economic production	
Health	Health cost is not high compared to reference countries. Cost neither significantly affects productivity and business performance, nor is particularly high for companies	The direct impact of diseases on businesses is not unusually high. Low correlation of health expenditure per capita and private investment	Use of traditional healers to treat illnesses to circumvent the constraint with regard to health costs; health insurance coverage and on-site infirmaries within some firms.	No available data to apply test	The 2011 Roll Back Malaria Report revealed that 72% of SSA firms reported a negative impact of malaria and 39% of them seriously perceive this disease is having an impact on productivity.	**Not binding**
Infrastructure						
Transport (Roads)	Relatively little product lost in transit due to breakage or spoilage, although significant increase since 2007	Relatively large expansion of road network in last 7-8 years without associated growth. Low correlation between road network and GDP growth	Test not applied	Test not applied	Roads quality is good, but density is low with regional disparities	**Not binding**
Transport (Port)	Prices of local shipments are high Prices of long distance shipment are low but overloading of truck remain a structural problem	Container port traffic in Senegal is below the average of countries with similar income level.	The quality of port index shows that Senegal has significantly better quality of ports infrastructure than countries with	Test not applied	Field work revealed problems with the uncompetitive nature of port services, rather than the infrastructure	**Not binding**

			similar level of income.			
Power	Price/kwh of $0.24 is globally high	FDI has an overall strong association with energy consumption, although that relationship has weakened somewhat in recent years.	62.4% of firms own generators. Energy used relatively intensively and high productivity of energy is consistent with constraint	Large international manufacturing firms (hippos) have lagged in investments (because Free Zones do not offer substantially better access to utilities)	Social costs even higher because of subsidies to the sector. Both price to consumers and social costs are high, particularly when oil cost is high	**Binding**
Water and Sanitation	Growing profitability and availability of irrigation schemes (Thanks to Compact I investments)	Test not applied	Test not applied	Test not applied	Field work with horticulturalists and rice producers in the north did not identify irrigation as a constraint.	**Not binding**
ICT	Costs are not among the lowest among comparators, but also not among the highest	Most direct effect of investments in ICT impacts of provision services and government efficiency	Several ICT service providers operating under license and providing services to consumers and firms	Dynamism of ICT affords critical processes of discovery and innovation in the economy	ICT connectivity has expanded significantly and the sector continues to grow	**Not binding**
Micro Risks						
Land Tenure/Property Rights	Land tenure insecurity and low social status on investments in agriculture		Large horticulture exporters prefer to contract with male farmers because they have more secure tenure rights	Agriculture and horticulture which require large tracts of land limited to areas where investors can negotiate a large-scale expropriation	Women face major legal and social barriers to accessing and controlling land.	**Not binding**

Import Barriers	Average tariff 10.8%; not reflective of foregone production using imports or social loss to elevated domestic prices.	Cost to import containers strongly associated with GDP growth.	Strong evidence of smuggling across borders Facilitation payments and informal 'import agents' near-ubiquitous Firms rely strongly on domestic inputs relative to foreign inputs.	Locally produced exports dominate production All firms less likely to export than global average		**Binding**
Contract Enforcement and Property Rights	Studies note contract enforcement and property rights as major deterrents to investment, both in general and for Senegal	Introduction of formal mediation center cleared 17000 cases with 92% user satisfaction.	Short turnaround times on credit consistent with contract enforcement weaknesses.	Informal sector highly dynamic.		**Binding**
Taxes	High number of tax payments and hours spent to prepare and pay tax per annum	Simplification of tax code for smaller businesses in 2013 corresponds to increase in new business registration	Many firms during consultations noted informality was a coping mechanism to avoid taxation (and regulation). Bribes to tax officials. Common Tax evasion.	Informal firms dominate and thrive	Taxes are high and the tax regime is complex and opaque.	**Binding**
Corruption	Perception of corruption is high. 53 percent of respondents who encountered the judiciary during the	Test not applied	Some firms prefer to remain under the radar and informal to avoid courts or use corruption to get	Large firms can afford to pay to influence government officials	Assessments of the judiciary in Senegal note the lack of independence, and the petty corruption	**Possibly binding**

	survey period reported having paid a bribe to the judiciary		court's rulings in their favor.		that occurs in the courts	
Regulatory Environment	Court cases are expensive and rarely resolved expeditiously. Decisions can be inconsistent, arbitrary, and non-transparent	Test not applicable	Large informal sector	Test not applied	Foreign firms in Senegal often cite burdensome labor law and arbitrary rulings by courts on labor cases as their number one frustration in doing business in Senegal	**Possibly Binding**
Labor Market Regulations	Firing a worker costs as much as 38 weeks of wages. Minimum wage to productivity ratio > 1	Reduction in labor taxes corresponds to 0.25% reduction in unemployment rate. Firms have added employees since LMR changes in 2007	Firms tend to be smaller than SSA or global counterparts. Surveyed firms said LMR were too hard to adhere to when they tried to formalize. Relative use of formal work contracts is declining (WBES 2007 v. 2014)	Informal firms do not abide by LMRs. At least one Chinese investor declined to invest because of the LMR requirements.		**Binding**
Policy and institutional effectiveness	Prompts entrepreneurs to save on the time and cost of regulatory compliance—and these time and cost savings translate directly into greater profitability for private businesses and	Regulatory and administrative environment encourage domestic firms to remain in the informal sector	Majority of the working population engaged in informal, small-scale, low-productivity work. Larger, more formalized firms tend to have internationally	The informal sector contributes 55% to GDP	Contributes to other constraints	**Possibly Binding**

	greater fiscal productivity for governments		competitive levels of factor productivity			
Macro risks	Inflation is low, GDP is growing, budget deficit under control, expenditure-revenue ratio below average compared to countries with same levels of income	Current budget deficit sustainable, but remains vulnerable to the changing international environment	Exchange rates below the trend line; Senegal benefits from the WAEMU Less than (74% of Senegal's borrowing is in foreign currency)	Rising level of debt and low levels of GDP growth highly vulnerable to macro risks		**Not binding**
Failures in Innovation	Senegal's product sophistication and the complexity of exports match its level of income. Evidence of market failures in terms of innovation.	2016 Export as a % of GDP is low (26%)	The PSE favors export-led growth and diversification in manufacturing and services	2016 Import as a % of GDP is 54.5% suggesting high import diversification	High levels of collusion between the GOS and large or powerful firms to limit market entry and create rents through a system of protectionism	**Not binding**

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