



WP/13/215

IMF Working Paper

Inclusive Growth and Inequality in Senegal

Alexei Kireyev

IMF Working Paper

AFR

Inclusive Growth and Inequality in Senegal

Prepared by Alexei Kireyev¹

Authorized for distribution by Hervé Joly

October 2013

This Working Paper should not be reported as representing the views of the IMF.

The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

Abstract

The paper examines Senegal's growth performance from the perspective of its poverty-reducing and distributional characteristics, and discusses policies that might help make growth more inclusive. The main findings are that poverty has fallen in the last two decades, but poverty reduction has slowed in recent years. Although available indicators sometimes give conflicting signals on distributional shifts, people in the middle of the income distribution have received the most benefit, mainly in urban areas. Further progress in poverty reduction and inclusiveness would require sustained high growth and exploration of growth opportunities in the sectors with high earning potential for the poor. Better-targeted social policies and more attention to the regional distribution of spending would also help reduce poverty and improve inclusiveness.

JEL Classification Numbers: D90, E25, I32.

Keywords: growth, inclusiveness, low-income countries, poverty reduction.

Author's E-Mail Address: akireyev@imf.org.

¹ The author is grateful to H. Joly, C. Kolerus, D. Ross, and R. Garcia-Verdu for careful reading and helpful comments. The author thanks World Bank colleagues (Y. Batana, P. English, S. Radyakin, R. Swinkels, D. Ndoeye) for providing the databases and useful discussions. Research assistance from D. Shapiro is gratefully acknowledged. Any remaining errors are the author's. The findings of this paper were presented in Dakar to the Senegalese authorities in September 2012 during the 2012 Article IV Consultations and were issued as an appendix to IMF Country Report No. 12/337.

Contents

	Page
I. Growth and Poverty Reduction in Senegal.....	3
A. Senegal’s Growth and Poverty from Historical and Regional Perspectives	3
B. The Impact of Growth on Poverty Reduction	5
II. Growth Inclusiveness in Senegal	7
A. Measures of Equality and Data Issues	7
B. Inequality Indicators in Senegal.....	9
C. Growth Incidence Curves.....	11
III. Are Senegal’s Public Policies Supportive of Inclusive Growth?.....	15
IV. Policies to Increase Inclusiveness of Growth	18
V. References.....	20
Annex I. Assessing Inclusiveness of Growth: Some Theoretical Considerations	22
Tables	
Table 1. Senegal: Poverty Indicators, 1994-2011	6
Table 2. Senegal: Inequality Indicators	9
Figures	
Figure 1. Senegal: Evolution of Real GDP Per Capita	3
Figure 2. Poverty Headcount Rate at International Poverty Line	4
Figure 3. Change in Poverty Rate	6
Figure 4. Factors Contributing to Pro-Poor Growth	7
Figure 5. Distributional Dimensions of Poverty	10
Figure 6. Consumption Growth by Welfare Groups (Percent).....	10
Figure 7. Growth Incidence Curve for Total Population, 2001, 2005, 2011	12
Figure 8. Growth Incidence Curves for Urban Areas, 2001, 2005, 2011	13
Figure 9. Growth Incidence Curves for Rural Areas, 2001, 2005, 2011	14
Figure 10. Healthcare and Education Expenditure in Regional Perspective	15
Figure 11. Regions Benefitting from Public Expenditure	16
Figure 12. Stylized Indicators of Inclusive Growth.....	23

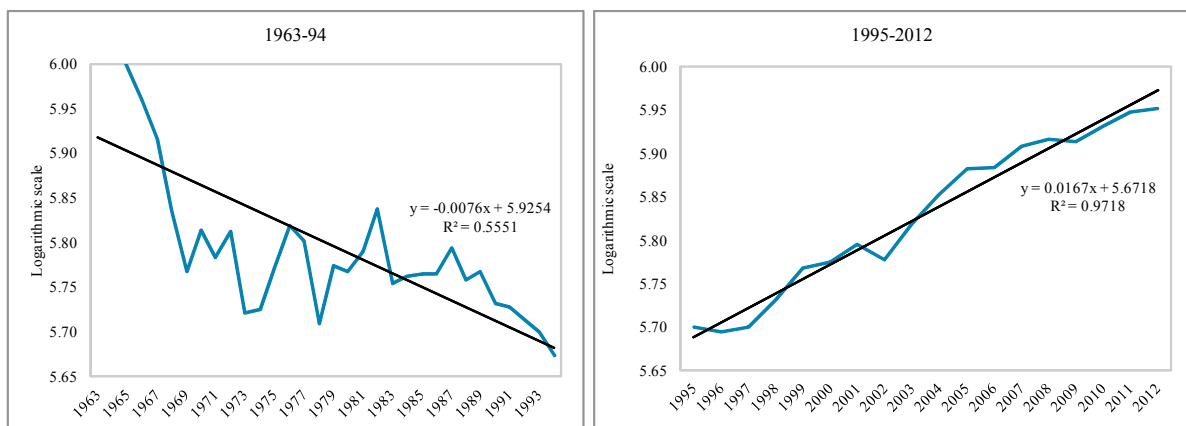
I. GROWTH AND POVERTY REDUCTION IN SENEGAL

The high-growth episode in sub-Saharan Africa that started in the early 1990s has been fairly inclusive. The October 2011 *Regional Economic Outlook: Sub-Saharan Africa* found that although the pickup in growth has been accompanied by a fairly modest reduction in poverty, some progress has been achieved in terms of improving equality and social and health outcomes (IMF, 2011). Meanwhile, the global financial crisis and social turmoil in different parts of the world have heightened global awareness of the potential impact of rising inequality on economic and social stability and on the sustainability of growth (Berg and Ostry, 2011). The social and political dimensions make it important to look at inclusiveness of growth in individual African countries.

A. Senegal's Growth and Poverty from Historical and Regional Perspectives

Since independence, Senegal's growth has been uneven. Two clear phases since independence can be identified: before the 1994 devaluation, Senegal's real GDP per capita declined on average by about 0.8 percent a year and recorded large gyrations. The pre-devaluation phase was highly unstable, with drastic drops in per capita income associated with periodic droughts, financial crises, oil shocks, and world recession. These were partly offset by temporary growth related to the increase in international demand for key export commodities such as groundnuts and phosphates. After the 1994 devaluation, growth in per capita GDP became less volatile and was on average almost 2 percent a year. The devaluation increased the competitiveness of Senegalese exports by cutting domestic costs and marked a turnaround in per capita GDP to a sustained upward trend for much of the past two decades. Even with the onset of the international financial crisis in 2008, Senegal's growth remained positive in absolute terms; although its GDP per capita growth has been below trend (Figure 1). This more recent period will be the focus of the rest of this paper.

Figure 1. Senegal: Evolution of Real GDP Per Capita

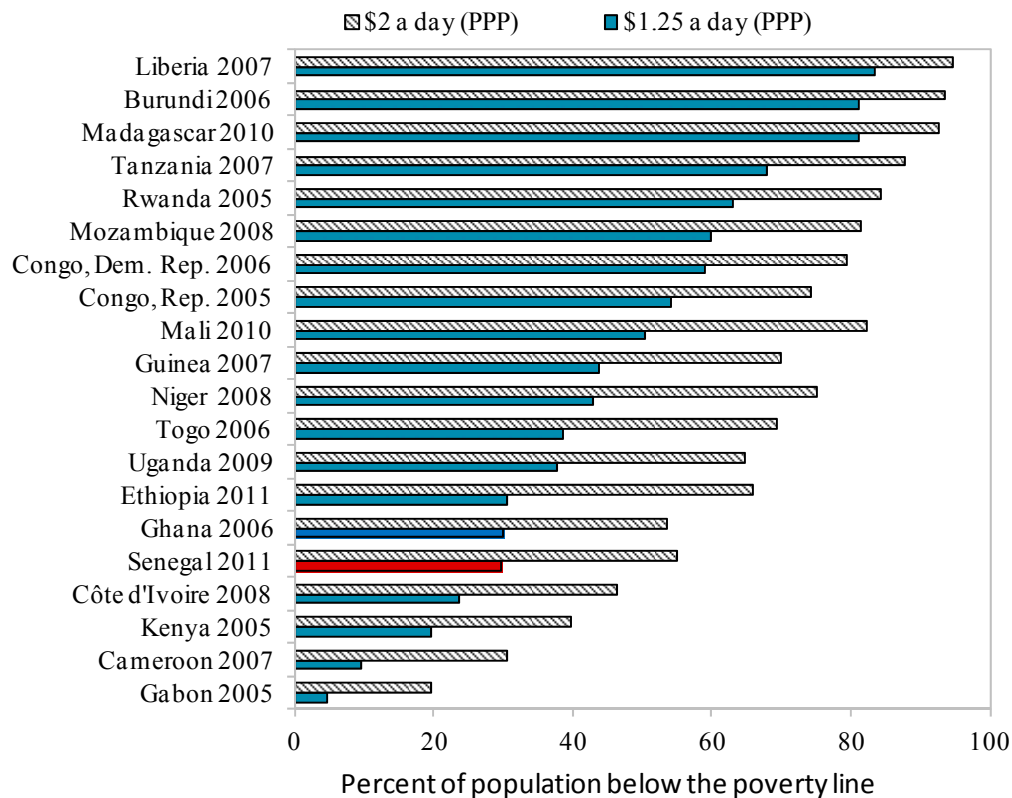


Source: IMF World Economic Outlook database.

The overall poverty level is relatively lower in Senegal than in most other sub-Saharan African

(SSA) countries. At the revised international poverty line, which usually differs somewhat from the national poverty line, Senegal is in the top quarter of SSA countries for which data are available (Figure 2). At the \$1.25 a day poverty line (in 2005 prices), Senegal in 2011 was comparable to Ethiopia and Ghana but was behind other countries in the region, such as Gabon, Cameroon, and Côte d'Ivoire.¹

Figure 2. Poverty Headcount Rate at International Poverty Line



Source: World Development Indicators, World Bank.

The 2011 household survey in Senegal indicated that poverty remains high, although it declined in the most recent two decades. More than six million people were living on a household income below the national poverty line. In 1994–2001, GDP growth in Senegal was about 5 percent a year; the poverty rate fell significantly, from 68 percent in 1994/95 to 55 percent in 2001/02. In 2002–05, GDP growth reached 4.7 percent, allowing the poverty rate to decline further to about 48.5 percent. However, since 2005–06, repeated shocks have contributed to reducing per capita income growth to little more than the rate of population growth. The 2011 household survey suggests that in the past five years poverty incidence has declined by only 1.8 percentage points to 46.7 percent.

This paper uses both national and international estimates of poverty and inequality in Senegal. The distributional and poverty-related data are drawn from nationally representative household

¹ Most comparisons in this paper are based on the data from household surveys. The most recent survey for Senegal was conducted in 2011, whereas for most SSA countries the latest surveys were published in 2005–10.

surveys published by the National Statistical and Demographic Agency of Senegal (www.ansd.sn). However, for international comparisons, the paper uses the data published by the World Bank, including in PovCalNet (<http://iresearch.worldbank.org/PovcalNet>), an interactive computational tool that allows calculating poverty measures comparable among countries. In PovCalNet, all poverty rates are based on the international poverty line of \$1.25 day in 2005 purchasing power parity (PPP) at 2005 prices, which is different from the poverty line in Senegal. Therefore, the poverty rate calculated based on this poverty line is not directly comparable with the national poverty rate. Moreover, because PovCalNet uses grouped data for each income group, there might be differences from the national data in the Gini index, poverty headcount ratios, consumption by decile of population, and other poverty indicators.²

B. The Impact of Growth on Poverty Reduction

Growth is usually defined as pro-poor if it reduces poverty. Several metrics are used to measure the change in poverty: the change in the share of population living below the poverty line, monthly per capita consumption, income, or expenditure; and the change in the poverty gap. The *poverty line* is the minimum level of income deemed adequate for meeting basic consumption needs in a given country, and it differs from country to country. For international comparison, two poverty lines are usually used: daily income of US\$1.25 and US\$2 at 2005 purchasing power parity (PPP). The *poverty gap* is the mean distance from the poverty line (counting the non-poor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty and its incidence.

The recent prolonged episode of growth has led to a significant reduction in poverty. Based on several household surveys,³ poverty in Senegal—defined as the share of people below the national poverty line—declined from 55.2 percent in 2001 to 46.7 percent in 2011 (Table 1). The poverty gap declined from 17.2 to 14.5; other metrics also point to a continued trend in the reduction in poverty, although the pace of improvement declined during the second half of the decade and may not be statistically significant between 2006 and 2011.

² Methodological differences between national and internationally comparable poverty-related estimates are documented and discussed in detail on the World Bank PovCalNet site (<http://iresearch.worldbank.org/PovcalNet>).

³ Based on data from income, expenditure, household, and budgetary surveys conducted by the Senegalese authorities in 1991–2011 and processed by the World Bank through PovCalNet, an online poverty calculation tool (<http://iresearch.worldbank.org/PovCalNet>).

Table 1. Senegal: Poverty Indicators, 1994–2011

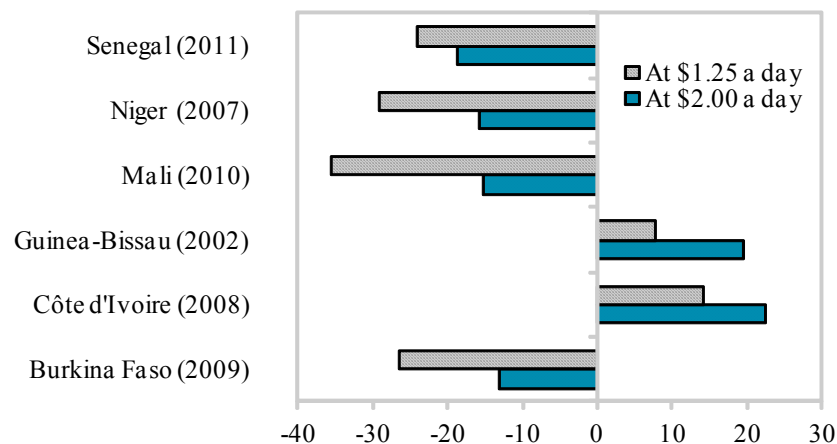
	2001	2005	2011
Poverty incidence	55.2	48.3	46.7
Confidence interval (95%)	52.9–57.5	46.1–50.6	44.1–49.3
Poverty gap	17.3	15.5	14.5

Source: ANSD, 2012, www.ansd.sn.

Progress achieved in poverty reduction has been more pronounced in Senegal than in some regional peers. In 1994–2005, the share of population living on less than US\$1.25 a day declined by about 20 percentage points, and for people living on less than US\$2 a day by about 19 percentage points (Figure 3). By the latter metric, which may be more appropriate for Senegal given its per capita income, Senegal’s poverty dropped faster than in other West African Economic and Monetary Union (WAEMU) countries (15 percentage points) in approximately the same period. The dynamics of poverty reduction in the region have been significantly affected by an increase in poverty in Guinea-Bissau and Côte d’Ivoire during political crises in these countries.

The level of poverty also differs significantly among different regions of Senegal. In 2011, for example, the poverty incidence in the poorest regions (Kolda, Fatick, Ziguinchor) was 67–73 percent, whereas it was only 26 percent in Dakar.

Figure 3. Change in Poverty Rate



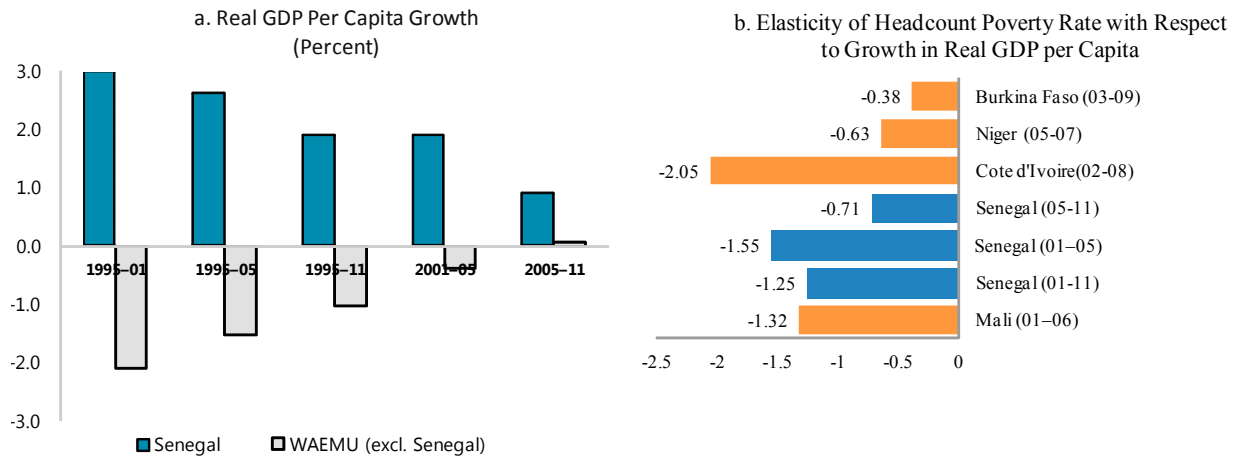
1/ At 2005 PPP prices. In parentheses, the latest available year and corresponding headcount ratio at \$1.25 a day and \$2 a day, respectively. Change to 1994 for Burkina Faso, 1985 for Côte d'Ivoire, 1991 for Guinea-Bissau, 1994 for Mali, 1992 for Niger, and 1994 for Senegal.

Source: PovCalNet, World Bank, 2013, <http://iresearch.worldbank.org/PovCalNet>.

This outcome reflects higher growth and a higher sensitivity to growth of poverty reduction in Senegal. Unlike a number of countries in the WAEMU, particularly those affected by internal conflicts or crises (e.g., Guinea-Bissau and Côte d’Ivoire in the 2000s), real per capita GDP growth in Senegal was always positive in 1995–2011 and in some years quite significant

(Figure 4a). In addition, the elasticity of poverty reduction to per capita income growth has been significant in Senegal in regional comparisons. In 2001–2011, this elasticity was about -1.3 in Senegal, above that of some other fast-growing WAEMU countries (e.g., Burkina Faso) (Figure 4b).

Figure 4. Factors Contributing to Pro-Poor Growth



Source: WDI, WEO, ANSD, and IMF staff estimates.

Although growth seems to have been a major factor behind the reduction of poverty, this conclusion should be treated with caution. First, an increase in real GDP per capita does not necessarily imply a reduction of poverty and requires supplementary information on the distribution of this additional income among different groups of the population. If the initial distribution of income is highly unequal, the impact of growth on poverty may not be significant. In an extreme case, if all benefits of higher growth were captured by the wealthiest part of the population, the impact of growth on poverty reduction may be negative. Second, the elasticity of poverty reduction to growth in per capita income depends on the shape of income or consumption distribution and on the position of the poverty line with respect to this distribution. Normally, the closer the poverty line is to the median of the distribution, the higher will be the elasticity of the poverty rate to real per capita growth. Finally, more regular household surveys based on a similar methodology are needed to assess the evolution of growth inclusiveness through time. This impact assessment would be better served by the use of more advanced econometric techniques, which is difficult in the absence of high-frequency poverty datasets.

II. GROWTH INCLUSIVENESS IN SENEGAL

A. Measures of Equality and Data Issues

Growth is usually considered inclusive if its benefits are widely shared across the population. Although there is no commonly accepted definition, inclusive growth usually refers to the goal of fostering high growth while providing productive employment and equal opportunities, so that all segments of society can share in the growth and employment, while redressing

inequalities in outcomes, particularly those experienced by the poor (see IMF, 2013, for an overview). For analytical purposes, growth is usually considered inclusive if it is high, sustained over time, and broad based across sectors; creates productive employment opportunities; and includes a large part of a country's labor force. Additional dimensions of inclusive growth include gender, regional diversification, and empowerment of the poor, including through inclusive institutions. This paper focuses only on the distributional characteristics of growth. Therefore, in this paper growth is considered inclusive if it helps improve equality.

Several statistical metrics allow evaluation of different aspects of inclusiveness in this narrow definition. The squared poverty gap⁴ assesses inequality as it captures differences in the severity of poverty among the poor. The Watts index⁵ is a distribution-sensitive poverty measure because it reflects the fact that an increase in income of a poor household reduces poverty more than a comparable increase in income of a rich household. The Gini coefficient shows a deviation of income per decile from the perfect equality line. The mean log deviation (MLD) index⁶ is more sensitive to changes at the lower end of the income distribution. The decile ratio is the ratio of the average consumption of income of the richest 10 percent of the population divided by the average income of the poorest 10 percent. Finally, in dynamic terms the increase of income of the bottom deciles can be compared to the average income increase or the income increase in the highest deciles of the population. If the income of the bottom decile in the distribution tends to rise proportionately or faster than the average income, growth would be considered inclusive. Although the squared poverty gap and the Watts index take into account the distributional characteristics of growth indirectly, all other methods measure equality directly.

The quality of the analysis of growth inclusiveness depends on data availability and quality. Such analysis requires at least two household surveys based on a comparable methodology, as well as data on income and consumption by households, which is difficult to collect in Senegal because most of the population is employed in the informal sector (Foster and others, 2013). The data may include outliers at both tails of the distribution. Although the outliers have been routinely corrected in Senegal's household surveys, they may lead to negative growth rates of the incidence curve for both tails of the distribution in some years (see below). Also, some parameters, such as the size of households and other sociodemographic variables (household head, education level, marital status, employment sector, place of residence, regional distribution, etc.) can vary from survey to survey, affecting poverty measures. Finally, the timing and the definitions of key variables, including the coverage of rural and urban areas, should be the same in different surveys to achieve consistent poverty estimates.

⁴ The squared poverty gap index averages the squares of the poverty gaps relative to the poverty line. It takes into account not only the distance separating the poor from the poverty line (the poverty gap), but also the inequality among the poor because it places a higher weight on households further away from the poverty line.

⁵ The Watts index is defined as a logarithm of the quotient of the poverty line and a geometric mean of an income standard applied to the censored distribution.

⁶ An index of inequality is given by the mean across the population of the log of the overall mean divided by individual income.

B. Inequality Indicators in Senegal

Different statistical measures suggest that, although poverty declined, overall inequality remains broadly unchanged. In 1994–2011, the squared poverty gap shrank by more than half, suggesting that poverty among the poorest people became less severe (Table 2). The Watts index also dropped substantially, suggesting a relatively faster improvement in the situation of people with the lowest incomes. At the same time, both the Gini coefficient and the MLD index declined a bit in 1994–2005 and increased again in 2005–11, suggesting no major changes in the overall level of inequality.

Table 2. Senegal: Inequality Indicators, 1994–2011⁷

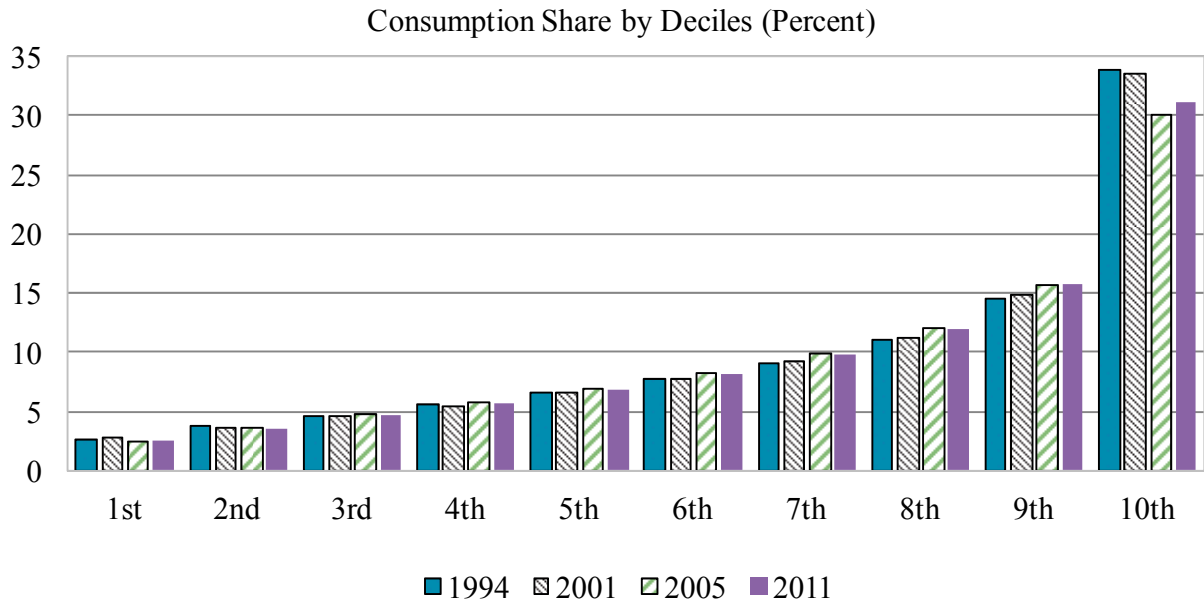
	Square Poverty Gap	Watts Index	Gini Coefficient	MLD Index
1994	9.09	0.27	41.44	0.30
2001	6.18	0.19	41.25	0.29
2005	4.67	0.15	39.19	0.26
2011	3.77	0.12	40.30	0.27

Source: PovCalNet, World Bank, 2013.

A simple decile ratio also suggests that the level of inequality remained broadly unchanged. The ratio of consumption in the top decile relative to the bottom decile of the population did not change much between 1994 and 2011. It stood at 12.9 in 1994, declined to about 11.8 in both 2001 and 2005 but increased again to 12.5 in 2011, suggesting the richest consume on average 12–13 times more than the poorest. The richest two deciles of the population consume about half the goods and services in the country, roughly the same amount as the seven bottom deciles of the population (Figure 5), suggesting a substantial level of income disparity and inequality, although lower than the average for sub-Saharan Africa.

⁷ PPP-based calculations. The Gini index and income shares may differ from the aggregates used for the national poverty lines. The Gini index based on ESAM 2001–2002, ESPS 2005–2006 and ESPS 2011 household surveys was 39.2 in 2001, 38.1 in 2005, and 37.8 in 2011. All income/consumption shares by decile are based on estimated Lorenz curves. Households are ranked by income or consumption per person. Distributions are population (household-size and sampling expansion factor) weighted.

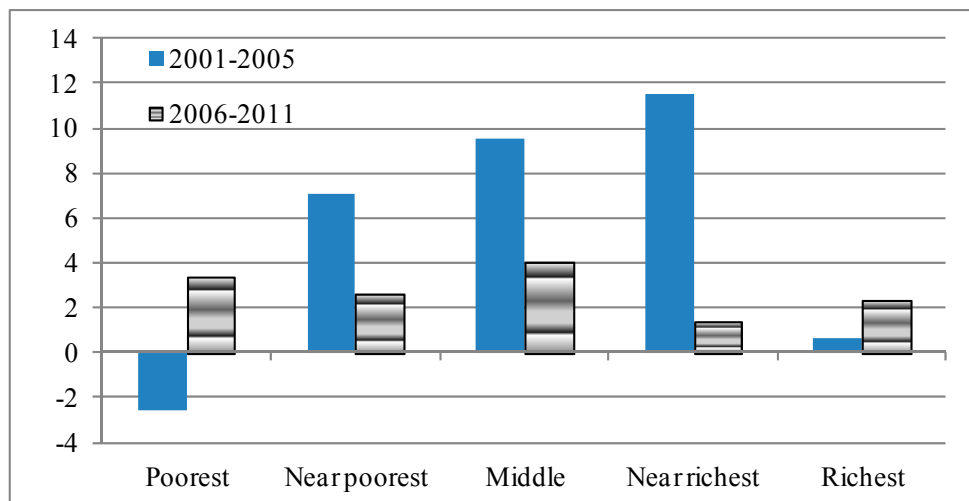
Figure 5. Distributional Dimensions of Poverty



Source: PovCalNet, World Bank, 2013.

Growth in the level of consumption in 2006–11 was positive but low and almost equal among different deciles of the population (Figure 6). No significant changes occurred in inequality during this period, because growth in consumption of the bottom deciles was only slightly higher than that of the top deciles. In contrast, in 2001–05 the poorest fifth of the population experienced a decline in consumption, while all middle deciles registered significant growth in consumption, although the increase of the consumption level of the richest groups was insignificant.

Figure 6. Consumption Growth by Welfare Groups (Percent)



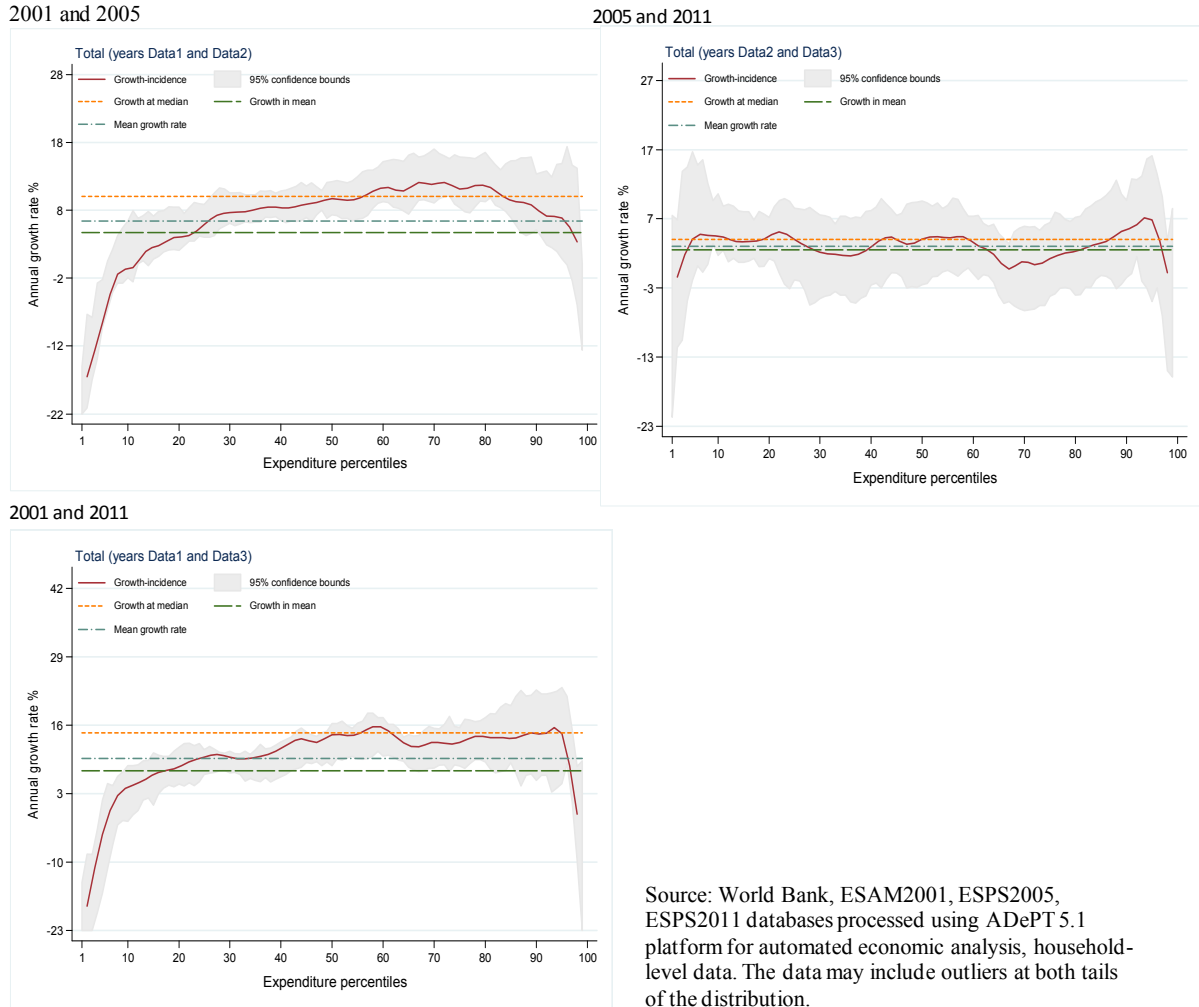
Source: ESAM 2001-2002, ESPS 2005-2006, ESPS 2011.

C. Growth Incidence Curves

A dynamic measure of inclusiveness of growth can be derived from the growth incidence curve. The estimation of growth incidence curves is a methodology that helps identify the extent to which each decile of households benefits from growth (Ravallion and Chen, 2003). In plotting growth incidence curves, the vertical axis reports the growth rate of consumption expenditure, and the horizontal axis reports consumption expenditure percentiles (Foster and others, 2013). The growth incidence curve assesses how consumption at each percentile changes over time. The part of the curve above zero points at the deciles that benefit from growth, and the part below zero points at the deciles that lost because of growth. The part of the curve that is above its own mean points at the deciles of the population that benefit from growth relatively more than an average household. The part of the curve below the mean, but still above zero, points at the deciles that also benefit from growth but less than an average household. A negatively sloping growth incidence curve suggests that income or spending of the poorer deciles of the population grows faster than income or spending of the richer deciles. Because in this case the poorer groups of the population are catching up with the richer, a negatively sloping growth incidence curve can be viewed as one of the indications of inclusiveness of growth. Improvements in the degree of inclusiveness of growth would be signaled by the growth incidence curve changing the slope from positive to negative, and progress in poverty reduction would lead to the mean of the growth incidence curve and the curve itself moving up (see Annex I for a suggested formal treatment).

Although the growth incidence curves give somewhat conflicting signals on distributional shifts in Senegal, they seem to confirm that growth benefitted most people in the middle of the income distribution. Between 2001 and 2005 (Figure 7), consumption increased on average, because the mean of the growth incidence curve is above zero, driven by the middle of the distribution (from the 3rd to the 8th deciles). The growth incidence curve is positively sloped, suggesting some increase in inequality during this period. Between 2005 and 2011, the mean of the growth incidence curve is above zero; but the curve is broadly flat, suggesting no clear trend in changes in inequality. On average for 2001–2011, a clear increase in mean consumption confirms the decline in poverty, as the middle class improved their relative position. However, for 2001–11 as a whole, the growth incidence curve has a slightly positive slope, which may point to some worsening of inclusiveness. This trend may not be statistically significant, indicating no substantial distributional changes during this period other than the improvement in the relative position of the middle class. This overall result, however, masks significant differences in growth inclusiveness between urban and rural areas.

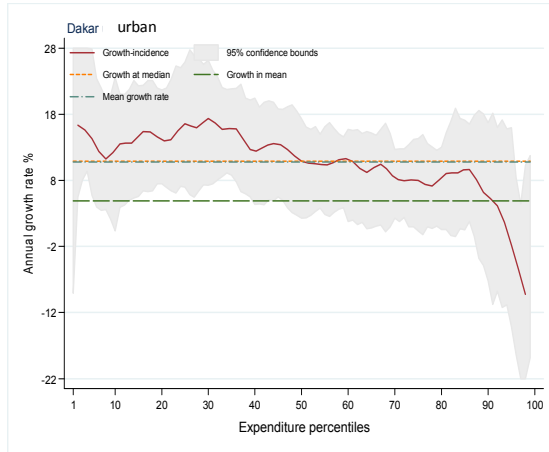
Figure 7. Growth Incidence Curve for Total Population, 2001, 2005, 2011



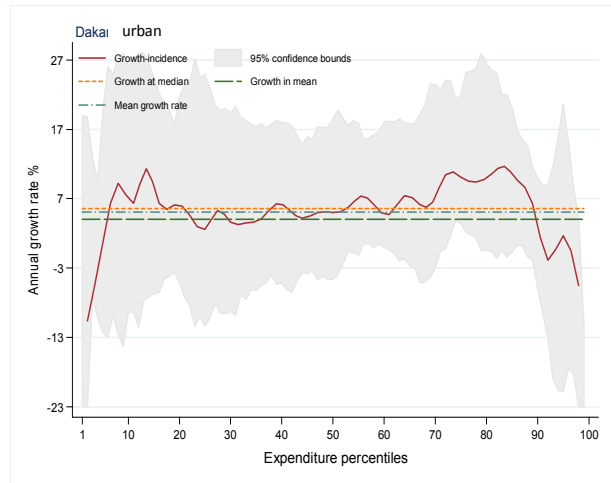
In urban areas people in the middle of the distribution seem to have benefitted the most from growth. Between 2001 and 2005, the growth incidence curve for urban areas is substantially above the mean for the whole distribution other than the top decile; but it slopes down a little, suggesting somewhat reduced disparity between the rich and the poor (Figure 8). For 2005–2011, however, the incidence curve hovers around zero and is upward sloping, pointing to some worsening of inclusiveness. For 2001–2011 overall, again there is no clear trend, although growth of consumption of the middle decile was very strong. Although the incidence curve is above zero it looks broadly flat, pointing to unchanged inclusiveness.

Figure 8. Growth Incidence Curves for Urban Areas, 2001, 2005, 2011

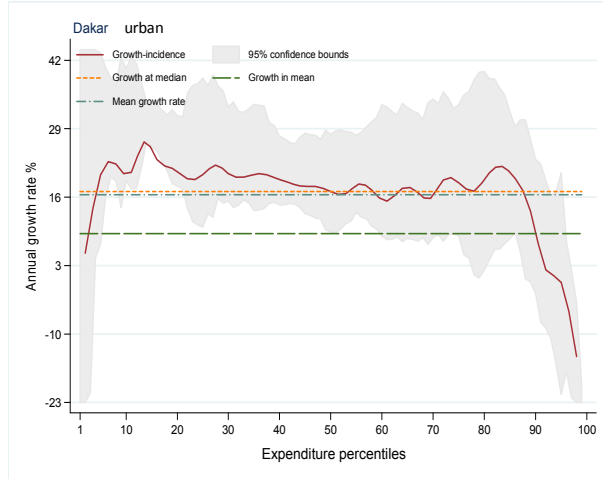
2001 and 2005



2005 and 2011



2001 and 2011

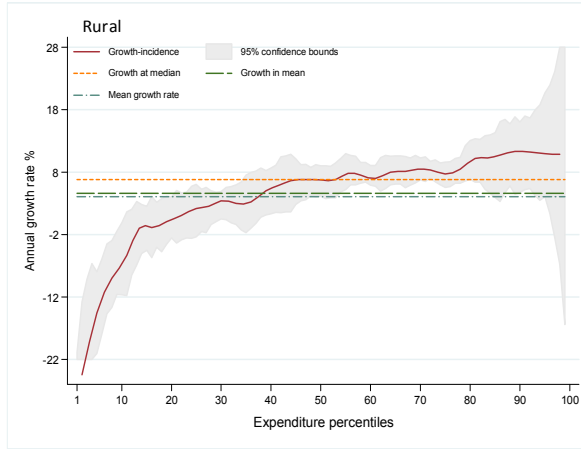


Source: World Bank, ESAM2001, ESPS2005, and ESPS2011 databases processed using ADePT 5.1 platform for automated economic analysis, household-level data.

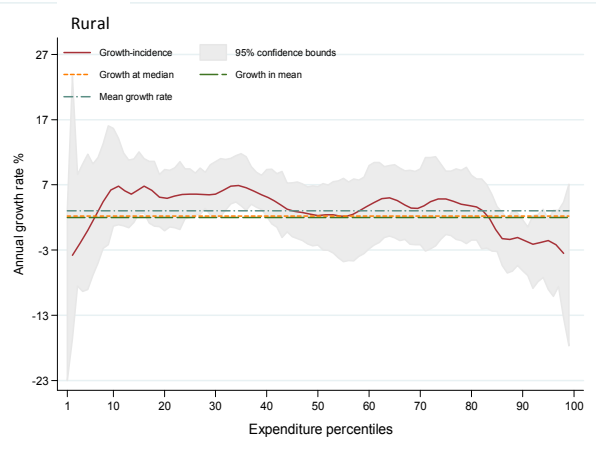
In rural areas, inclusiveness of growth may have worsened, and the improvement of the middle class was not very pronounced. Between 2001 and 2005, a clear trend of growing inequality is seen in rural areas because the incidence curve is positively sloped and actually below zero for the first two deciles of the population (Figure 9). Again, there is no clear trend in 2005–2011, neither in terms of inclusiveness (the incidence curve is broadly flat) nor in terms of poverty reduction (the mean is about zero). Overall, in 2001–2011, the incidence curve is positively sloped at low deciles but is broadly flat in the middle, with the growth rate in the lower deciles substantially lower than growth in the median and highest deciles. This may point to an increasing gap between the poor and the rich in some rural areas.

Figure 9. Growth Incidence Curves for Rural Areas, 2001, 2005, 2011

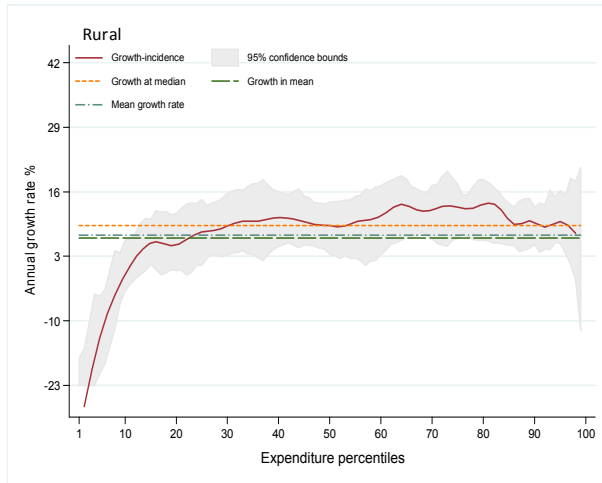
2001 and 2005



2005 and 2011



2001 and 2011



Source: World Bank, ESAM2001, ESPS2005, and ESPS2011 databases processed using ADePT 5.1 platform for automated economic analysis, household-level data.

The degree of inclusiveness of growth in rural areas has an important impact on the degree of inclusiveness of growth in Senegal as a whole. The difference between the median growth rates of spending by households in rural areas is closer to the mean growth rate than in urban areas. This may suggest that the overall change in the distribution of households' consumption is heavily influenced by the changes in the distribution in rural areas and that it is skewed to the right, because most households are relatively poorer than the mean household in the country. On the contrary, in urban areas the impact of changes in growth rates of consumption of relatively rich households on the overall inclusiveness of growth is less significant, because the distribution in urban areas is skewed to the left—most households are relatively richer than the mean household in the country.

Although available indicators sometimes give conflicting signals on distributional shifts, the statistical analysis of the distributional characteristics of growth suggests the following: (i) poverty in Senegal has fallen in the last two decades, although poverty reduction has slowed in recent years; (ii) although available indicators sometimes give conflicting signals on distributional shifts, growth seems to have benefitted most people in the middle of the income

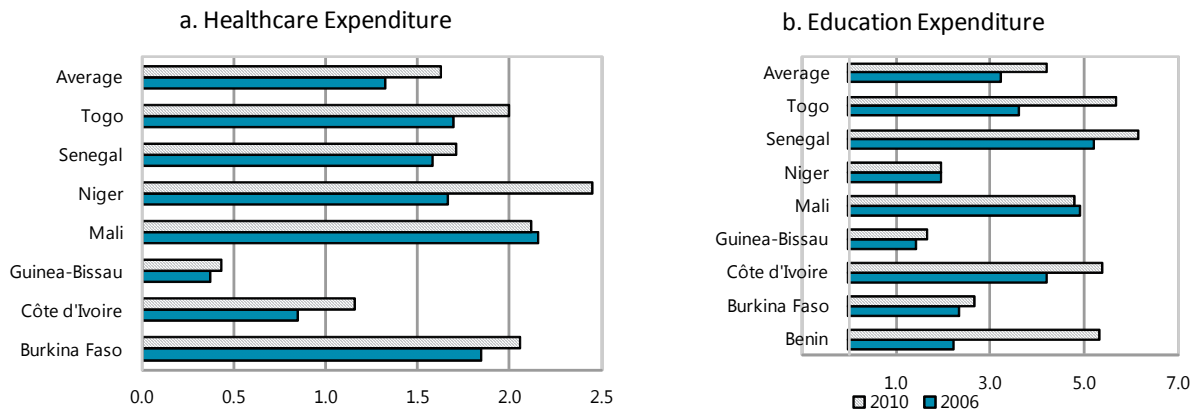
distribution; (iii) the middle class has benefitted from growth, mainly in urban areas, while both the poorest and the richest have lost ground; (iv) growth in rural areas has been less inclusive than in urban areas.

III. ARE SENEGAL’S PUBLIC POLICIES SUPPORTIVE OF INCLUSIVE GROWTH?

Public policies may be considered supportive of inclusive growth if they help promote growth and reduce poverty and inequality. Possible indicators include (i) the overall level of social spending, because cross-country experience suggests that countries with relatively higher spending on human capital, health care, pensions, and other aspects of the social safety net tend to have more inclusive growth; (ii) measures specifically targeted at raising incomes of people in the bottom deciles of the income distribution relative to the average income; (iii) development of social safety nets for the population in general and programs aimed at its poorest segments (social protection floor); and (iv) the design of the tax system.

The aggregate level of health and education spending in Senegal is comparable to that of WAEMU countries, but the composition is different. Spending on education and health care was higher in Senegal than the WAEMU average (Figure 10). Spending on education and health care should contribute to inclusiveness of growth, especially in urban areas where the concentration of schools is high.

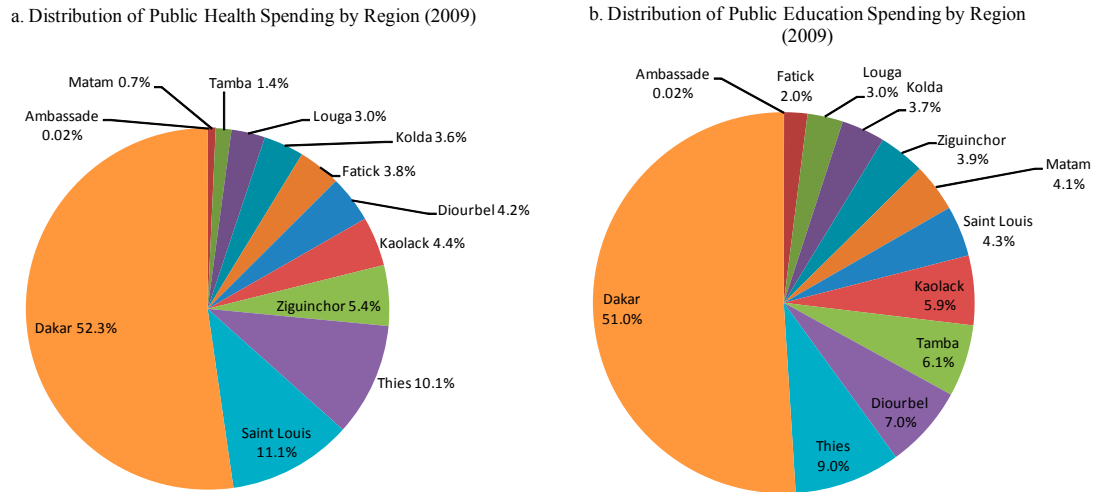
Figure 10. Health Care and Education Expenditure in Regional Perspective
(Percent of GDP)



Source: World Economic Outlook database and IMF staff estimates.

Public expenditure, including in the social sectors, is concentrated in Dakar. The World Bank estimated that the capital area, where only about a quarter of the population of Senegal lives, absorbs more than half of public resources. Other regions have less access to public resources, including in such critical areas as health care and education, which may also contribute to inequality (Figures 11 *a* and *b*, based on World Bank analysis).

Figure 11. Regions Benefitting from Public Expenditure
(Percent)



Source: Public Expenditure Review, World Bank, 2012.

Senegal has used ad hoc and untargeted measures to address the impact of shocks in the recent past. During the 2007–2008 food and fuel crisis, the authorities took several measures to limit price increases on food and oil. They temporarily reduced the VAT and introduced excise tax exemptions and subsidies for butane for all consumers. The fiscal cost of these measures amounted to about 4½ percent of GDP during the two-year period, with about a third stemming from losses in revenue. The 2008 poverty and social impact analysis (PSIA) revealed that ad hoc measures were in general poorly targeted, because almost 55 percent of the benefits accrued to households in the top 40 percent of the welfare distribution. In February 2011, the government froze retail prices for six key food items to help the poor and temporarily limited price increases for petroleum products at the pump by reducing the VAT base. Some of these measures were reversed later in the year. In early 2012 and early 2013, the authorities temporarily introduced implicit subsidies for petroleum products through a mechanism of price stabilization, but later phased them out.

The scope and coverage of the existing social safety nets in Senegal is limited, and most interventions are small and temporary. Based on the World Bank social safety net assessment (World Bank, 2013), formal social security coverage reaches 13 percent of the population. This includes 6 percent covered by formal pension, 3 percent receiving social security benefits, and 3 percent having health insurance. Annual transfers under the safety net programs averaged about CFAF 17 billion a year in 2010–12, about 0.27 percent of GDP. Safety net funding remains largely dependent on donor financing with the budget providing not more than one-fourth. Safety net programs have three main benefits—support to daily existence, nutritional support, and improving access to basic services. These programs are carried out through monetary transfers (cash grants and loans), food aid, and fee waivers for health services. The programs are spread across several entities and each consists of several projects (Box1).

Box 1. Social Programs in Senegal

- Food Security Commissariat (*Commissariat de la Sécurité Alimentaire—CSA*) provides food aid assistance to vulnerable populations either in response to catastrophes or through rice distribution;
- National Solidarity Fund (*Fonds de Solidarité Nationale—FSN*) is responsible for providing immediate responses to emergency situations, including financial, medical, and material support;
- Community-based Re-adaptation Program (*Programme de réadaptation à base communautaire—PRBC*) provides social, economic, and cultural integration for disabled persons through financial support and income generating activities;
- Old Age Support Program (*Projet d'appui à la promotion des aînés—PAPA*) addresses the vulnerable elderly (over 60 years) by capacity strengthening, grants, and subsidized loans for elderly;
- National School Lunch Program (*Programme d'alimentation scolaire*) provides school lunches funded by the national budget;
- WFP School Lunch Program (*WFP Cantines Scolaires*) supports the national school lunch program by providing primary school lunches in vulnerable rural areas;
- Educational Support for Vulnerable Children (*Bourses d'étude pour les orphelins et autres enfants vulnérables—OEV*) provides schooling or professional training to vulnerable children through a program of the National HIV-AIDS Council;
- Sesame Plan (*Plan Sesame*) waives health service fees for all persons over 60 years;
- Poverty Reduction Program (*Programme d'appui à la mise en œuvre de la Stratégie de Réduction de la Pauvreté—PRP*) supports grants for income generating activities for vulnerable groups, primarily women, the disabled, and HIV affected people;
- A pilot Cash Transfers for Child Nutrition Program (*Nutrition ciblée sur l'enfant et transferts sociaux—NETS*) entails cash grants to mothers of vulnerable children under 5 years old to mitigate the negative impacts of food price increases; and
- WFP Vouchers for Food Pilot Program (*WFP Bons d'Achat—WFP CV*) addresses food insecurity among vulnerable households driven by high food prices.

Source: World Bank, 2013.

Recently two new projects have been announced. The government plans to implement a pilot project *Bourses de Sécurité Familiale* (BSF) to provide annual financial assistance to the poorest families. Also, the government intends to introduce universal medical coverage (*Couverture Maladie Universelle*, CMU) that would provide basic medical care, particularly the most vulnerable.

Obviously, a more comprehensive social safety net funded by broadening the tax base and increasing some taxes, along with reallocating existing spending, is needed. Experience of other countries in the region suggests a minimum social safety net can be provided at low cost. For example, in Burkina Faso the World Bank estimates a basic social safety net could be set up at a cost of around 1.5 percent of GDP. This would include a minimum medical insurance coverage and government support for the poorest families. For Senegal, this level of spending is within reach, and well-targeted social safety nets can help reduce inequality and poverty.

IV. POLICIES TO INCREASE INCLUSIVENESS OF GROWTH

Sustained overall economic growth is a precondition for further poverty reduction. A number of studies confirm that sustained growth is a key factor in enhancing inclusiveness. Kraay (2004) showed that in developing countries growth of average income explains 70 percent of the variation in poverty reduction in the short run. Berg and Ostry (2011) argue that longer growth spells are robustly associated with more equality in the income distribution. Lopez and Servén (2006) suggest that for a given inequality level, the poorer the country the more important is the growth component in explaining poverty reduction. Affandi and Peiris (2012) showed that growth is in general pro-poor, with growth leading to significant declines in poverty across economies and time periods. Specifically, a 1 percent increase in real per capita income leads to about a 2 percent decline in the poverty headcount ratio. Therefore, any successful pro-poor growth strategy should have at its core measures to achieve sustained and rapid economic growth. Senegal's experience is consistent with this cross-country evidence.

Special attention should be given to the distributional dimension of growth. An increase in inequality may offset and even exceed the beneficial impact on poverty reduction of the same increase in income (Affandi and Peiris, 2012). According to recent estimates, about two-thirds of poverty reduction within a country comes from growth, and greater equality contributes the other third. A 1 percent increase in incomes in the most unequal countries produces a mere 0.6 percent reduction in poverty, while in the most equal countries, it yields a 4.3 percent cut (Ravallion, 2013). Because inclusiveness of growth is associated with a number of macroeconomic outcomes and policies, it is important to analyze growth and inclusiveness simultaneously. Increased inequality may dampen growth, but at the same time poorly designed measures to increase inclusiveness could undermine growth. For instance, increasing farm productivity and broadening rural job opportunities is important in addressing rural poverty. In the long run, attention to inclusiveness can bring significant benefits for growth.

Well-designed public policies are also important for promoting inclusiveness. The recommendations of the 2008 Poverty and Social Impact Analysis (PSIA) for Senegal remain broadly valid. Poorer households could be protected against food and fuel price increases in the short term at a lower budgetary cost and more effectively by redirecting resources to better-targeted measures: poor groups can be targeted through measures such as school lunches and public works programs and better-targeted tariffs for small quantities of electricity to protect some of the urban poor. In the medium term, a well-targeted and conditional cash transfer system is the best option for assistance for the poorest.

Strong growth in agriculture is probably the single most important factor in improving inclusiveness of growth. The strong performance of agriculture in 2008–10 helps explain the improvement in consumption levels of the poor during this period in spite of low overall GDP growth.

Structural policies promoting employment and productivity increases, in particular in agriculture, could also help increase inclusiveness. According to the World Bank (2010), several policies have been successful in increasing the agricultural earnings of the poor in other low-

income countries (LICs). These policies could be applicable in Senegal. They include improving market access and lowering transaction costs; strengthening property rights for land; creating an incentive framework that benefits all farmers; expanding the technology available to smallholder producers; and helping poorer and smaller producers handle risk. To expand non-agricultural and urban employment opportunities for poor households, other SSA countries took steps to improve the investment climate; expand access to secondary and girls' education; design labor market regulations to create attractive employment opportunities; and increase access to infrastructure, especially roads and electricity.

Inclusive institutions have also been found important for growth inclusiveness. Acemoglu and Robinson (2012) argue that rich countries are rich by virtue of having inclusive institutions, that is, economic and political institutions that include the large majority of the population in the political and economic community. An initial set of inclusive economic institutions would include secure property rights, rule of law, public services, and freedom to contract. The role of the state would be to impose law and order, enforce contracts, and prevent theft and fraud. When the state fails to provide such a set of institutions, growth becomes extractive.

Coherent labor market policies are also needed for increasing inclusiveness. The challenges of growth, job creation, and inclusion are closely linked, because creating productive employment opportunities throughout the economy is an important way to generate inclusive growth (IMF, 2013). In Senegal, creation of employment opportunities and increasing productivity in rural areas, in particular in agriculture, would prompt higher consumption growth among poorer households. For example, the stronger per capita consumption growth observed in Cameroon and Uganda at the poorest levels seems to relate to high agricultural employment growth (IMF, 2011). By contrast, rural agricultural employment fell in Mozambique and Zambia where the poorest experienced weaker or negative per capita consumption growth.

Deepening the financial sector through policies that give better access to the poor for financial services would increase inclusiveness. A number of studies found that financial development generally increases incomes of the poorest households (Claessens, 2005), whereas unequal access to financial markets can reduce incomes by impeding investments in human and physical capital. These barriers are widespread in Senegal, where most people lack access to the formal financial system. At the same time, microfinance and other rural finance and expanding credit information sharing could significantly expand credit availability. Some promising initiatives in this area are underway in Senegal.

V. REFERENCES

Acemoglu, D. and J. Robinson, 2012, *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*, (NY: Crown Business).

Affandi, Y., and S. Peiris, 2012, “Building Inclusive Growth in the Philippines,” *IMF Country Report* No. 12/50 (Washington: International Monetary Fund).

Africa at Work: Job Creation and Inclusive Growth, 2012 (NY, London: McKinsey Global Institute report)

Arze del Granado, J., and I. Adenauer, 2011, “Burkina Faso—Policies to Protect the Poor from the Impact of Food and Energy Price Increases,” *IMF Working Paper* No. 11/202 (Washington: International Monetary Fund).

ANSD, 2011, *Situation Economique et Sociale du Sénégal*, Décembre 2011.

Azam, J., M. Dia, C. Tsimpo, and Q. Wodon, 2007, “Has Growth in Senegal After the 1994 Devaluation Been Pro-Poor?” in *Growth and Poverty Reduction: Case Studies from West Africa*, World Bank Working Paper No. 79, January, pp. 45–67 (Washington: World Bank).

Berg, A., and J. Ostry, 2011, “Inequality and Unsustainable Growth: Two Sides of the Same Coin?” IMF Staff Discussion Note, April 8, SDN/11/08 (Washington: International Monetary Fund).

Chandy L., N. Ledlie, and V. Penciakova, 2013, “The Final Countdown: Prospects for Ending Extreme Poverty by 2030,” *Brookings Institution Policy Paper* 2013–04.

Claessens, S., 2005, “Access to Financial Services: a Review of the Issues and Public Policy Objectives,” Policy Research Working Paper Series 3589 (Washington: World Bank).

David, A., and M. Petri, 2013, “Inclusive Growth and the Incidence of Fiscal Policy in Mauritius—Much Progress, but More Could Be Done,” *IMF Working Paper* No. 13/116 (Washington: International Monetary Fund).

Enquête Suivi de la Pauvreté au Sénégal (ESPS-II 2010–2011), 2012, Dakar, ANSD.

Foster, J., S. Seth, M. Lokshin, Z. Sajaia, 2013, *A Unified Approach to Measuring Poverty and Inequality: Theory and Practice* (Washington: World Bank).

Garcia, M., and C. Moore, 2012, *The Cash Dividend: The Rise of Cash Transfer Programs in Sub-Saharan Africa* (Washington: World Bank).

Gastwirth, J., 1971, “A General Definition of the Lorenz Curve,” *Econometrica*, Vol. 39, No. 6, November, pp. 1037–1039.

Ianchovichina, E., and S. Gable, 2012, “What is Inclusive Growth?” in Arezki and others (eds.) *Commodity Price Volatility and Inclusive Growth in Low Income Countries*. International Labor Organization, 2012, *Understanding Deficits of Productive Employment and Setting Targets: A Methodological Guide*, (Geneva: ILO).

International Monetary Fund, 2008, *Senegal: Selected Issues*, “Policies to Protect the Poor from Rising Energy and Prices in Senegal,” *IMF Country Report* No. 2008/221 (Washington: International Monetary Fund).

International Monetary Fund, 2011, “How Inclusive Has Africa’s Recent High-Growth Episode Been?” *Regional Economic Outlook: Sub-Saharan Africa*, October (Washington).

International Monetary Fund, 2013, “Jobs and Growth: Analytical and Operational Considerations for the Fund,” (Washington: International Monetary Fund) available at www.imf.org.

Kraay, A., 2004, “When Is Growth Pro-Poor? Cross-Country Evidence,” *IMF Working Paper* No. 2004/12 (Washington: International Monetary Fund).

Lopez, H., and L. Servén, 2006, “A Normal Relationship? Poverty, Growth, and Inequality,” *Policy Research Working Paper Series* 3814 (Washington: World Bank).

Ravallion, M., 2013, “How Long Will It Take to Lift One Billion People Out of Poverty?” World Bank Policy Research Working Paper 6325 (Washington: World Bank).

Ravallion, M., 2012, “Pro-Poor Growth: A Primer.” Available via the Internet: www-wds.worldbank.org.

Ravallion, M., and S. Chen, 2003, “Measuring Pro-Poor Growth,” *Economics Letters*, Vol. 78, pp. 93–99.

“Towards the End of Poverty,” 2013, *The Economist*, June 1–7.

World Bank, 2013, *Senegal: Social Safety Net Assessment*, July 10, 2013 (Washington: World Bank).

World Bank, 2010, *Pro-Poor Growth in the 1990s: Lessons and Insights from 14 Countries* (Washington: World Bank).

World Bank, 2007, “Senegal: Looking for Work: The Road to Prosperity,” *Country Economic Memorandum* (Washington: World Bank).

ANNEX I. ASSESSING INCLUSIVENESS OF GROWTH: SOME THEORETICAL CONSIDERATIONS

Inclusive growth should simultaneously reduce poverty and inequality. Growth reduces poverty if the mean income of the poor rises. Growth reduces inequality if it helps straighten the Lorenz curve, which plots the percentage of total income earned by various portions of the population when the population is ordered by the size of their incomes. More formally, starting from Ravallion and Chen (2003), the growth incidence curve, which traces out variability of consumption or expenditure growth by the percentile of the population, can be defined as

$$g_t(p) = \frac{L'_t(p)}{L'_{t-1}(p)} (\gamma_t + 1) - 1$$

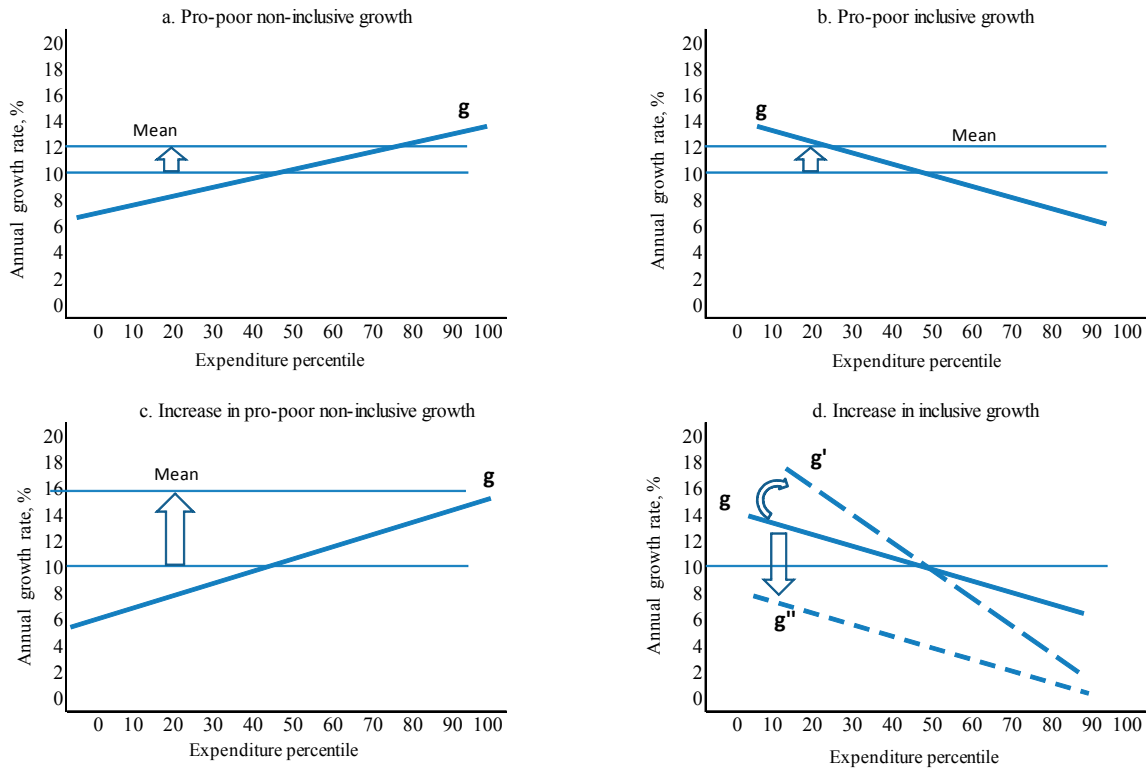
where $L'_t(p)$ is the rate of change of the Lorenz curve,⁸ p is the deciles of the population, and γ_t is the growth rate of its mean. From the equation it follows that

- $g_t(p) = \gamma_t$, if $L'_t(p) = L'_{t-1}(p)$: growth at each decile of incidence curve will be equal to the average growth of the distribution at each decile of population, if the slope of the Lorenz curve does not change over time.
- $g_t(p) > \gamma_t$, if $L'_t(p) > L'_{t-1}(p)$: growth at each decile of the incidence curve will be higher than the average growth of the distribution at each decile of population, if the slope of the Lorenz curve increases.
- $g_t(p) < \gamma_t$, if $L'_t(p) < L'_{t-1}(p)$: growth at each decile of the incidence curve will be lower than the average growth of the distribution at each decile of population, if the slope of the Lorenz curve decreases.
- The slope of the incidence curve is positive if $g'_t(p) = \frac{L''_t(p)L'_{t-1}(p)}{L'_{t-1}(p)L'_t(p)} > 1$.
- The slope of the incidence curve is negative if $g'_t(p) = \frac{L''_t(p)L'_{t-1}(p)}{L'_{t-1}(p)L'_t(p)} < 1$.

Therefore, based on the incidence curve, pro-poor and inclusive growth can be derived as follows. Assuming for simplicity of illustration that the incidence curve is linear (Figure 12), (i) pro-poor growth shifts the mean expenditure (or consumption) of the poor up; the slope of the incidence curve is irrelevant and may be positive, suggesting that growth is not inclusive; (ii) pro-poor inclusive growth shifts the mean expenditure up while the incidence curve is negatively sloped; (iii) accelerations of pro-poor growth just shift the median income further up, while the slope of the incidence curve may remain positive, suggesting the growth remains noninclusive; (iv) an increase in the inclusiveness of growth suggests that the incidence curve becomes negatively sloped (g), the slope increases (g') and/or the whole curve shifts to g'' as inequality declines and $L''_t(p) < L'_{t-1}''(p)$.

⁸ $L'_t(p)$ is the fraction at time t of total income that the holders of the lowest p th fraction of incomes possess. This varies from zero to one, $0 \leq p \leq 1$, presented as the inverse of the cumulative distribution function.

Figure 12. Stylized Indicators of Inclusive Growth



Source: Author's presentation.

From an operational perspective, to assess inclusiveness of growth a country should take a number of actions: (i) establish the slope of the incidence curve based on the information of at least two sequential household surveys; (ii) if the slope is positive, suggesting that growth has not been inclusive, identify measures that could increase income and spending of the lowest deciles, while increasing the mean growth rate, that is, not at the expense of higher deciles; (iii) if the slope of the incidence curve is negative, suggesting growth has been inclusive, identify measures to increase the slope by making growth of consumption of lower deciles even faster, without hampering any other deciles; (iv) alternatively or in addition, find a measure to reduce inequality in the Lorenz curve coefficient in the next period that would shift the entire incidence curve up.