

*Full Length Research Paper*

# Impact of fiscal policies aimed at increasing aggregate investments on employment and household incomes in Senegal

Latif Dramani<sup>1</sup> and Ralitza Dimova<sup>2</sup>

<sup>1</sup>UFR SES –CREFAT Université de Thiès BP: 947 Thiès Sénégal.

<sup>2</sup>University of Manchester, United Kingdom.

Accepted 21 April, 2019

This study explores the impact of budgetary policies, aimed at an increase in aggregate investments in Senegal on employment and household incomes. The analysis is based on a computable general equilibrium framework, which allows us to capture the multi-faceted microeconomic implications of the chosen macroeconomic policies and uses very interesting recent macro and micro-level data sources. Our results indicate that policy makers in Senegal face serious dilemmas. Reliance on foreign sources of finance tends to improve the welfare of households in the short-to-medium run, but at the expense of further decreasing the international competitiveness of the economy. Drastic reduction of the role of public administration in the economy is a viable alternative that addresses these issues, but only at the expense of deterioration of the incomes of households, especially those involved in the informal sector.

**Key words:** Investments, computable general equilibrium (CGE) model, employment.

## INTRODUCTION

Since the outset of structural reforms of the 1980s and the spelling out of the Millennium Development Goals of poverty alleviation until 2015, closing the poverty gap between rich and poor within and across countries has achieved a priority status in academic and policy making circles. In Senegal, a series of public interventions under the auspices of the plan of economic and financial recovery of the 1980s, the program of medium and long term adjustment of the early 1990s and the strategy of accelerated growth of the 2000s have all aimed to stabilize the public finances and “create richness” in the economy<sup>1</sup>. Among these initiatives, the most widely analysed and applauded in terms of its growth enhancing potential, has been the devaluation of the CFA in 1994, which contributed to a sustained GDP growth of around 5% per annum. Up until the mid-2000s, the enhanced rate of GDP growth has been accompanied by a

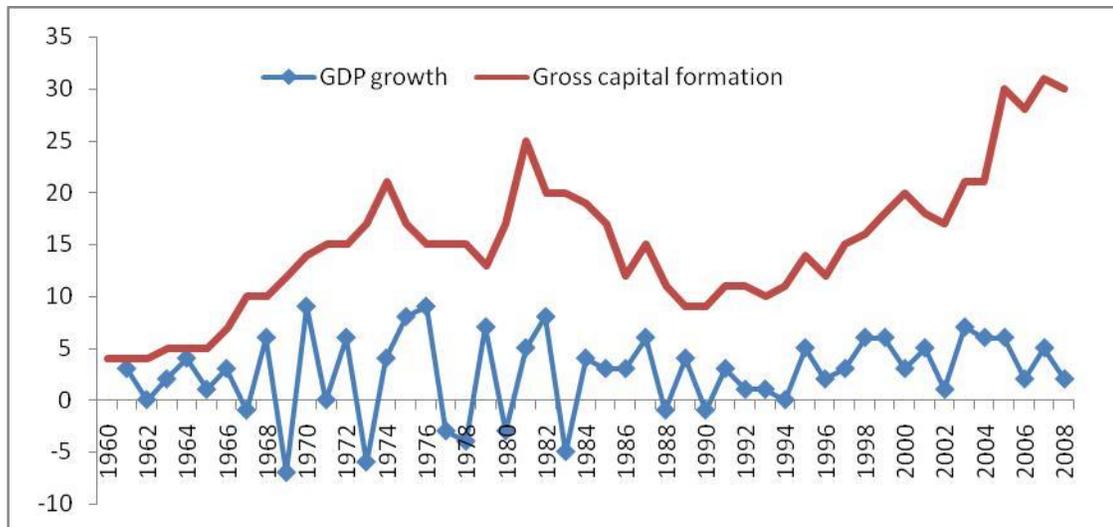
containment of the budget deficit (from 5.3% in 1994 to 4.4% in 2005) and an increase in the gross investment rate from 6% to around 18 to 24% between 1999 and 2006 (ANSD-Dakar, various issues).

These positive developments have failed to dissipate concerns about the prospects of pro-poor growth and a simple look at some current labour market statistics makes the rationale behind such concerns apparent. Specifically, the official unemployment rate in the country is approximately 13%, more than 30% of those employed consider themselves underemployed, and the median salary in the informal sector, which employs the majority of the labour force does not exceed 68 dollars a month (World Bank, 2007). As a consequence, approximately half of the Senegalese continue to reside below the poverty line.

The purpose of this paper is to explore the impact of the increase in aggregate investments in the framework of the new strategy of accelerated growth on employment and household welfare in Senegal. We draw our conclusions from the simulations based on a computable general equilibrium model (CGE), which has at least two main advantages compared alternative, for example, econometric approaches. First, despite its relative

\*Corresponding author. E-mail: [dramaniarmel@yahoo.fr](mailto:dramaniarmel@yahoo.fr).

<sup>1</sup> For summary of the economic history of Senegal in the post 1980s see Azam (2004) and Carbal (2009).



**Figure 1.** Trends in GDP growth and gross capital formation. Source: World development indicators, 2010.

simplicity, the approach is especially helpful in addressing the microeconomic implications of various macroeconomic policies, while allowing us to take into account the interdependence of responses and redistributions across sectors and socio-economic strata in the economy, as opposed to focusing on a more limited side of the problem in a partial equilibrium framework. Secondly, the relatively recent nature of the policy and hence the absence of as recent data series makes it yet impossible to explore the complex consequences of the policy in a “before” and “after” fashion.

To the best of our knowledge, the only earlier study that has explored the economic implications of the strategy of accelerated growth is that of Cabral (2009). This paper, based on a 2004 social accounting matrix and household data from 2001, simulates the impact of an increase in aggregate investments on poverty and inequality and concludes that despite its growth enhancing potential, the policy of accelerated growth is not “pro-poor”. The results of this paper thus raise the important questions of why accelerated public investment and growth have failed to translate in enhanced household welfare (at least among the poorer strata of the population) and what the key economic linkages that have led to this failure are.

We address this question by looking at the impact of enhanced investments on the incomes of different types of households through key channels such as the labour market. An additional value added of our research is the fact that we explore the different implications of alternative budgetary policies aimed at financing investments. This is a crucial issue given the importance of the right choice of sources of finance in view of the rising government debt and difficulties that Senegal may face in meeting obligations, such as the WAEMU convergence criteria (AfDB/OECD, 2008). A further

advantage of our study is that we base our simulations on rich macro and microeconomic data from 2005, the year when the policy of accelerated growth was initiated.

Studies on the devaluation and structural reform in Senegal (for example Azam, 2004a, 2007) concluded that shifts in the distribution of incomes as a consequence of the CFA franc devaluation led to an increase in the poverty incidence in the urban informal sector. This phenomenon was a consequence of the peculiar links between the formal and informal urban sectors, whereby the savings of the high wage formal sector workers lead to investments in the informal sector and hence the creation of informal sector jobs. We keep these structural characteristics in mind when we distinguish between different investment enhancing policies that reshuffle resources across the different sectors of the economy.

### Structure of the Senegalese economy

As indicated at the outset of this paper, since the 1970s the Senegalese government launched a number of policies, whose primary goal was the stabilization of the national finances and economic recovery. While the effectiveness of these policies was variable and frequently subject to criticism, their combined positive influence on the long-term trend in key economic indicators such as gross capital formation, has been apparent. For instance, as highlighted in Figure 1, although GDP growth remained relatively low and subject to business cycle fluctuations, especially during the macroeconomic disequilibria of the 1970s, gross capital formation experienced a generally positive trend, which has peaked in the aftermath of the early 1990s, and especially after the initiation of the strategy of accelerated growth of 2005.

Much of the peak in aggregate investments that contributed to gross capital formation has been on account of foreign sources of finance. Indeed, while the foreign contribution to aggregate investments went down from 75% in 1996 to 52% in 2003, it remained the most important source of public finance (IMF, 2005).

However, the evolution of Senegal's current account balance, the source of foreign savings and hence foreign contribution to aggregate investments, has been a source of concern. Structural problems in key export sectors-phosphates, fisheries and groundnuts- combined with the rising cost of energy imports, contributed to widening of the trade deficit since the late 1990s. The current deficit has been financed by the contribution of public development aid, while the contribution of FDI remained minuscule at around 1.5% of GDP (AfDB/OECD, 2007; 2008). On the domestic side of public sources of finance, between 2005 and 2006, the revenues increased on account of rising direct and indirect taxes and good fiscal yield of the informal sector. This did not lead to a dramatic decrease in the budget deficit. In fact, the deficit increased from 3.2% in 2005 to 6.1% in 2006 and 5.5% in 2007. However, on average, the increase in capital expenditures exceeded the increase in current expenditures (AfDB/OECD, 2007, 2008).

Policy makers in Senegal have noted that both the choice of healthy and transparent budgetary policies and the appropriate utilization of the labour market as a transmission mechanism between public investments and poverty reduction, as well as the effective redistribution of resources across the more and less privileged strata of the population, are crucial pre-requisites for the success of the pro-poor growth policy (DRSP, 2006). On the budgetary management side, the 2006 to 2010 document of the strategy of growth and poverty reduction (DSRP) envisages an increase in public investments of more than 12.5%, improvement of the revenue collection by approximately 100 billion CFA a year, and decrease of the current account deficit from 8.1% of GDP in 2006 to approximately 4.1% in 2010 (DSRP, 2006).

Along with a public budget strategy aimed at improvement in the accumulation and utilization of resources, the government has initiated a politics of promotion of decent employment, especially among young people. It involves both the financing of projects that create profitable enterprises and activities, as well as the provision of appropriate training and information in the job market. Finally, the government has accelerated the promotion of access to basic social services as part of the strategy of pro-poor growth. The multi-faceted pro-poor growth strategy is expected to decrease by 15% the proportion of poor people between 2005 to 2010. Yet, the first preliminary analysis on the achievement of the pro-poor growth objectives of the strategy of accelerated growth undertaken by Cabral (2009) points to less encouraging results than expected and we provide some simple follow up reflection on the potential consequences between these choices and household incomes through the labour

market channel.

## METHODOLOGY

### Data and descriptive statistics

We base our analysis on a 2005 social accounting matrix, which is constructed as follows. The table of national accounts provides information on final consumption, production, savings, investments, imports and exports. Balance of payments information is used to position the country with respect to the rest of the world. Finally, the government budget provides all the information we need on government expenditures and taxes. All these data sources are available at the national agency of demographics and statistics (ANSD). We complement this macro-level information with micro-level information, based on the third survey on follow-up of poverty in Senegal (ESPE, 2005), a rich household level survey that includes information on household incomes, consumption, demographic and labour market characteristics. Note that for the purposes of this study we identify poverty/destitution with lack of productive employment and low incomes. Given the current trend in poverty assessment innovations, characterised by an ever increasing reliance on measures that capture multidimensional and even cultural aspects and perceptions of poverty, one could argue that this a limited definition.

However, a look at the statistics on poverty incorporated in our survey, statistics which are consistent with previous surveys on poverty in Senegal, indicate that all these perceptions are strongly correlated with employment opportunities and entitlements that can be achieved with higher incomes<sup>2</sup>. According to the respondents, the main signs of poverty are: difficulty in obtaining food, lack of work, lack of health care and lack of decent housing, in that order. Furthermore, based on households' perceptions, the government priorities should be: (a) youth employment (20.1%), (b) lowering the prices of basic commodities (18.9%), (c) access to basic health care (17.7%), (d) education for children (11.3%). These perceptions are consistent with both the measures of welfare (employment and incomes) that we incorporate in our model and with the achievement of the millenium goals, incorporated in the Strategy for Accelerated Growth, which is at the center of our analysis. To the best of our knowledge, no other study has yet been based on as recent synthesis of household level and aggregate level data on Senegal.

Our 19-account matrix distinguishes between the following 4 production sectors: agriculture, industry, tradable services and government services. The production factors include capital and labour. In addition to the state and the rest of the world, the institutions

<sup>2</sup> See, for instance, the Poverty Reduction Strategy Paper of the Republic of Senegal, 2007.

**Table 1.** Contribution of sectors to value added.

Sectors	Value added (value)	Value added (share)
Agriculture	748	0.19
Industry	996	0.26
Tradable services	1739	0.45
Non-tradable services	369	0.10

Source: Computations based on the social accounting matrix; Value added is measured in millions of CFA francs.

**Table 2.** Sources of household income.

	Formal households	Informal households
<b>Share of total factor incomes</b>		
Labour	0.11	0.31
Capital	0.05	0.10
<b>Transfers (%)</b>		
Formal households	0.41	0.23
Informal households	0.24	0.25
Enterprises	0.07	0.08
Government	0.04	0.03
Rest of the world	0.08	0.00

Source: Computations based on the social accounting matrix.

include formal households, informal households and enterprises as major socio-economic actors in the economy. The distinction between formal and informal households is based on the ANSD nomenclature and highlights the dual structure of the economy (Dimova et al., 2010). To the extent that the formal sector is a disproportionate urban sector employer of the skilled part of the population, our disaggregation highlights the distinction between the households of skilled and unskilled labour market participants.

The results on sectoral allocation of value added in the economy, highlighted by the SAM, reveal a dominance of the tertiary sector, which accounts for almost half of the total value added. In comparison, the contributions of agriculture (19%) and industry (26%) are fairly small. Given that approximately half of the population is involved in agriculture, this result highlights the existence of large income disparities across the different economic sectors. Furthermore, this structure of the economy implies that labour and capital receive the majority of their payments in the largest service sector (approximately 45% each). Clearly, different government policies that affect the allocation of resources across sectors would have different implications for the welfare of workers involved in these sectors (Table 1).

The information on the sources of incomes of different types of households (Table 2) reveals some interesting

patterns. While labour income represents the most important contribution to the budget of informal households (31%), it plays a significantly smaller role in the budget formation of formal households (11%). Interestingly, capital payments also represent a twice as high proportion of the income of informal households (10%) as of formal households (5%). By contrast, formal households receive the largest proportion of their incomes from various transfers, the largest proportion of transfers coming from other formal households, followed by informal households. Informal households receive similar amounts of transfers from other informal households, the government and the enterprises, but the contribution of formal household transfers to their budgets is significantly lower compared to that of formal households.

The information on government revenue and expenditures shows that in 2005 the government received most of its income from taxes on goods and services, followed by income taxes and taxes on imports. Corporate taxes contributed the least to the government revenue. On the expense side, government salaries represented the largest share of close to half of the budget (Table 3).

The Senegalese economy is heavily dependent on external trade. The data on foreign trade indicates that the proportion of the imports represents 52% of its value

**Table 3.** Government budget.

Item	%
<b>Proportion of total revenue</b>	
Income taxes	0.18
Corporate taxes	0.07
Taxes on imports	0.14
Taxes on goods and services	0.61
<b>Proportion of total expenditures</b>	
Transfers	0.29
Non-tradable services	0.44
Savings	0.27

added. The highest proportion of the imports (35%) is consumed by the industrial sector. By contrast, Senegal exports a significantly smaller part of its production (29%). The industry share is once again the largest (29%) (Table 4).

### **Description of the computable general equilibrium (CGE) model: Basic characteristics and calibration**

#### ***Characteristics of the model***

To analyse the impact of investment enhancing budgetary policies (such as increase in government revenues or decrease in current expenditures that translate in government savings and hence capital investments) we adapt the rather stylized EXTER1 CGE model, developed by Decaluwé et al. (2001). This model is used by the national agency of demographics and statistics in Dakar in policy making and hence our results provide some idea about the policy making potential of different options faced by the Senegalese government.

As usual, production is the result of a three stage process: total production of each of the three branches (XS) is a function of fixed shares of value added (VA) and intermediate consumption (CI). The relationship between the level of VA is a Cobb-Douglas type of function of composite labour (LD) and capital (KD). Producers are assumed to minimize their cost of producing VA, subject to the Cobb-Douglas production function. Optimal labour demand is derived from this cost-minimization process. As usual, capital is considered fixed in the three broadly defined sectors. Intermediate consumptions are modelled as fixed shares from the input/output ratios calculated on the basis of the SAM. We model a small open economy, where world prices of imports and exports are exogenous.

The income functions of different agents are consistent with the social accounting matrix. Household incomes consist of labour payments, capital payments and various

**Table 4.** Foreign trade data.

Sector	Import shares	Export shares
Agriculture	0.07	0.02
Industry	0.35	0.22
Services	0.10	0.05
Share of VA	0.52	0.29

transfers. Private firms' income is the balance of capital remunerations not paid directly to households, to which we add government subsidies and transfers from the rest of the world. The government spends its revenues from various types of taxes on the consumption of public goods, as well as transfers to households and firms and the rest of the world.

Investments in the model are savings driven, with total savings equal to the sum of households' savings, government savings and foreign savings. Given this market clearing assumption, the model does not reflect short-term (less than one year) consequences of a policy, but should be taken as indicative of medium-term adjustments.

Since our focus is on the medium run consequences of a set of budgetary policies, in this study we ignore their implications on long-run capital formation and long run growth. We are more interested in the more immediate implications of government intervention on labour demand and household incomes. The main channel through which an increase in aggregate investments translates into changes in employment and welfare is by way of increase in the intermediate demand of different sectors, which then leads to corresponding value added changes and hence changes in labour demand and household incomes.

#### ***Calibration***

In our calibration process, the elasticity of substitution of the foreign trade block of equations comes from the GTAP data base. The income elasticity is drawn from Dorosh and Lundberg's (1993) study on Gambia. The elasticities of transformation and substitution between the factors are borrowed from Diagne et al. (2007). The elasticity of export demand is drawn from Decaluwé et al. (2001). All other parameters are calibrated with the use of the SAM data. The import and export prices, as well as the rate of exchange, the wages, the price of capital, land and water are fixed at 1 during the benchmark year.

### **SIMULATIONS**

As indicated earlier, our main focus is on the impact of an increase in aggregate investments on labour demand across sectors, and via the labour demand and changes

**Table 5.** The impact of an increase in investment demand on intermediate consumption by various sectors.

Sector	Simulation one (%)	Simulation two (%)	Simulation three (%)	Simulation four (%)	Simulation five (%)
Agriculture	2.620	0.271	1.906	0.076	0.521
Industry	1.720	-0.041	1.251	0.031	0.305
Tradable services	0.540	-0.030	0.394	-0.055	-0.088
Government services	-12.590	-0.299	-9.145	0.020	-1.470

in equilibrium wages, on the welfare of various types of agents in the economy. Aggregate investments in our model are savings driven and hence the key policy variable that the government can manipulate in order to increase aggregate investments is government savings. Clearly, government savings that contribute to an increase in aggregate investments can be raised by either increasing government revenues through say indirect taxes, or by decreasing the current government spending or transfers.

We start our analysis by exploring the baseline case of a 7% increase in aggregate investments incorporated in the 2005 Budget (Simulation one). These investments, which to a large extent included renovating and extending Dakar's road network, were financed by state's internal resources and international donors (AfDB/OECD, 2008). We then compare with this baseline case with alternative policy options: (a) a 10% increase in industrial indirect taxes, the choice of which as a budgetary policy is driven by the greater tax collection potential of the industrial sector compared to alternative sectors (Simulation two). (b) a 10% decrease in current government/public administration expenditures (Simulation three) and (c) reshuffling of transfers across different households, namely an increase in transfers to informal households by 10% and reduction of the transfers to formal households by 10%, which leads to an overall 0.754% increase in government savings (Simulation four). Finally, we compare the results of these simulations with those arising from an increase in the contribution of foreign savings on aggregate investments (Simulation five). Although the government has no direct control over this policy option, this is an important case to consider, given Senegal's persistent current account deficit, which has led to a heavy reliance on foreign finance, especially in the form of foreign aid.

Tables 5 to 8 highlight the results from the different simulations. We first look at the impact of an increase in aggregate investments on intermediate consumption by the four economic sectors, which is linearly related to investment demand and through investment demand to output and value added (Table 5). We then look at the changes in value added; labour demand and equilibrium wages in the four sectors (Table 6). In Table 7, we highlight the response of incomes of the four different agents to the policy changes and in Table 8 we explore some additional effects such as the change in the

economy's performance in the external market.

The results, reported in Table 5 indicate that the 7% increase in aggregate investments, envisaged in the 2005 Budget leads to an increase in intermediate consumption in the agricultural, industrial and service sectors and a dramatic decrease in the government sector consumption, apparently reflecting a reallocation of resources from current consumption by the government sector to capital expenditures. The four alternative scenarios are characterised by a significantly less deleterious effect in terms of a shrinking of the government sector. Indeed, the redistribution of resources from the formal to the informal sector has a positive impact on the growth of the public sector. However, the relative decline in the incomes of formal households in this scenario leads to a decline in the intermediate consumption from the private service sector.

Not surprisingly, financing public investments by way of increase in indirect taxes to the manufacturing sector and hence decreasing the profitability of this sector has a negative impact on the intermediate demands from all sectors other than agriculture. Finally, foreign sources of finance have a positive impact on the intermediate demand from the agricultural and manufacturing sector, but a negative impact on the intermediate demands of both the private and public services sectors.

The results reported in Table 6 are consistent with (in fact, a direct consequence of) the said observations. We see that the reduction in value added in the government service sector is highest in the case of the baseline scenario and that of 10% reduction in current government expenditures. As a result, in the case of both these scenarios, we observe an increase in labour demand in all three production sectors and significant reduction in labour demand in the government services sector, as well as with a significant decline in the equilibrium wage, which is a complex outcome of the interplay of supply and demand in different sectors and links between sectors.

By contrast, an increase of aggregate investments by way of a 10% increase in industrial indirect taxation leads to a reduction in value added and labour demand by all sectors other than agriculture, but also to an increase in the equilibrium wage rate. Finally, a social policy of direct allocation of resources from formal to informal sector households leads to both a contraction of the service sector, possibly on account of the fact that the service

**Table 6.** Production and labour market.

Sector	Value added		Labour	
	VA (%)	VA price (%)	Price (%)	Volume (%)
<b>Simulation one</b>				
Agriculture	2.620	0.200	-1.700	4.560
Industry	1.720	0.000	-1.700	3.430
Services	0.540	-1.400	-1.700	0.870
Government services	-12.590	-1.700	-1.700	-12.590
<b>Simulation two</b>				
Agriculture	0.271	0.346	0.150	0.468
Industry	-0.041	0.110	0.150	-0.080
Services	-0.030	0.131	0.150	-0.048
Government services	-0.299	0.150	0.150	-0.299
<b>Simulation three</b>				
Agriculture	1.906	0.116	-1.242	3.308
Industry	1.251	-0.037	-1.242	2.486
Services	0.394	-1.006	-1.242	0.634
Government services	-9.145	-1.242	-1.242	-9.145
<b>Simulation four</b>				
Agriculture	0.076%	0.039%	-0.016%	0.130
Industry	0.031%	0.015%	-0.016%	0.062
Services	-0.055%	-0.049%	-0.016%	-0.088
Government services	0.020%	-0.016%	-0.016%	0.020
<b>Simulation five</b>				
Agriculture	0.521	2.017	1.634	0.900
Industry	0.305	1.936	1.634	0.603
Services	-0.088	1.579	1.634	-0.141
Government services	-1.470	1.634	1.634	-1.470

**Table 7.** Incomes.

Sector	Simulation one (%)	Simulation two (%)	Simulation three (%)	Simulation four (%)	Simulation five (%)
Formal households	-0.150	0.027	-0.110	-0.436	0.278
Informal households	-0.440	0.067	-0.323	0.303	0.703
Enterprises	0.360	0.094	0.263	-0.003	0.917
Government	0.370	1.521	0.265	0.007	1.337

sector is to a large extent driven by informal households searching subsistence, and a slight decrease in the equilibrium wage.

The implication of the above policies on the income levels of different agents in the economy is a direct consequence of the changes in sectoral value added, labour demand and equilibrium wages. We see that a cut in the public administration results in an increase in enterprise incomes and improvement of the government

budget, but also to a reduction in household incomes, especially for households involved in the informal sector. This result is consistent with the logic and results observed by Azam (2004a, 2007). By contrast, the policies of rising government revenues and foreign savings lead to an improvement of the income positions of all four economic agents. Finally, reallocation of resources between the formal and informal sectors leads to a deterioration of the income positions of the formal

**Table 8.** Foreign trade.

Sector	Simulation one (%)	Simulation two (%)	Simulation three (%)	Simulation four (%)	Simulation five (%)
<b>Imports</b>					
Agriculture	1.750	0.925	1.272	0.086	4.330
Manufacturing	1.260	-0.423	0.919	0.024	1.770
Services	0.190	0.034	0.136	-0.067	0.343
<b>Exports</b>					
Agriculture	3.220	-0.172	2.341	0.068	-2.003
Manufacturing	1.950	-0.253	1.420	0.035	-0.044
Services	1.760	-0.249	1.281	-0.013	-1.557

households and the enterprises, but to an improvement of the income positions of households engaged in the informal sector and the government.

The medium run improvement of the welfare of economic agents by way of increase in revenues and foreign aid is not without its costs. As we could already see, foreign aid leads to a contraction of the largest sector in the Senegalese economy, namely services and a corresponding reduction in labour demand by this sector. Increase in indirect taxation, on the other hand, leads to a contraction of all sectors other than agriculture. However, given the aggregate nature of our data and analysis, we cannot comment on any implications this may have on overall economic efficiency. As indicated in the foreign trade results, reported in Table 8, we see that both these policies lead to a deterioration of the already fragile export position of Senegal.

The main conclusion of our analysis is therefore that all available choices faced by the Senegalese government are marked by steep trade-offs. More detailed analysis, preferably in a « before » and « after » econometric framework would be needed in the future to disentangle the direct implications of these choices on key niches in the various aggregate sectors, and the efficiency and equity implications of each choice.

## Conclusions

With the use of recent and rich macro and micro-economic data sources and a computable general equilibrium framework, which resolves some of the deficiency of alternative methodologies in our context, we explore the pro-poor growth potential of the Senegalese policy of accelerated growth. Our results confirm previous findings that the current policy of targeting key sectors in the economy and converting budgetary resources from consumption to investment is not pro-poor. It does contribute to the expansion of the industrial and service sector, as well as agriculture, and stimulates labour demand in all those sectors. This leads to an improvement of the government budget and the

budgetary position of the enterprises, but at the expense of falling incomes of formal and especially informal households. The already (on average) poorer households residing in the informal economy tend to be those suffering the most from the policy.

The obvious remedy to this policy outcome would be the direct allocation of resources from the (on average) better off formal sector households to the (on average) worse off informal sector households. But this can only come at the expense of a shrinking service sector and a deterioration of the formal household income position. By contrast, the positive outcomes of alternative budgetary policies such as heavier reliance on revenue collection or foreign finance come at the expense of either reduced domestic demand or deterioration of the country's foreign competitiveness. Paradoxically, reducing the size of the public administration in the national budget further enhances the existing inequalities.

The optimal policy response would clearly be a carefully designed policy that leads to both a promotion of internal demand and stimulation of the most competitive sectors in the economy and simultaneous redistribution of incomes between winners and losers to this policy. In other words, the right combination of the five budgetary approaches explored in our simulations, would be the optimal solution. Unfortunately, the high level of aggregation that is inevitable in a computable general equilibrium framework, makes it difficult for us to explore all possibilities and understand fully all intermediate linkages. Follow-up microeconomic studies would clearly be needed to fully understand the pro-poor growth potential of the policy of accelerated growth and all its multi-faceted consequences. These studies should take into account the role of not only economic, but also governance indicators. The government has identified good governance, including successful fight with corruption, quality of administrative services and decentralization as one of the most important pillars in the implementation of the poverty reduction strategy. The attainment of such good governance and its impact on the implementation of the strategy of accelerated growth are yet to be witnessed.

## REFERENCES

- Azam JP (2004a). Poverty and growth in the WAEMU after the 1994 devaluation. *J. Afr. Econ.*, 13(4): 536-562.
- Azam JP (2007). Turning Devaluation into Pro-Poor Growth: Senegal Findings from Country Cases. In: M Grimm, S Klasen, A McKay (eds), Palgrave Macmillan: Basingstok.
- Cabral FJ (2009). The accelerated growth strategy of Senegal eller is pro-poor?, CRES Research Paper Series, 11.
- Decaluwé B, A Martens, L Savard (2001). The political economy of development and calculable general equilibrium models, University of Montreal Press, Francophone Universities Collection, Montréal.
- Decaluwé B, Dissou Y, Patry A (2001). "Customs Union Among WAEMU Countries.
- Diagne A, Demont M (2007). Taking a new look at empirical models of adoption: Average treatment effect estimation of adoption rates and their determinants. *Int. Assoc. Agric. Econ.*, 37: 201-210.
- Dimova R, C Nordman, F Roubaud (2010). Allocation of labor in urban West Africa: Insights from the pattern of labor supply and skill premiums. *Rev. Dev. Econ.*, 14(1): 74-92.
- Dorosh PA, Lundberg MKA (1996). "More than just Peanuts (Groundnuts: Aid Flows and Policy Reform in The Gambia." In Sahn, D.E ed., *Economic Reform and the Poor in Africa*, Clarendon Press, Oxford.
- International Monetary Fund (2005). Senegal: Selected Issues and Statistical Appendix.
- National Agency of Statistics and Demography (ANSD) (various issues). Economic and financial data. A quantitative Assessment" *Revue Economique*, 4: 811-830.
- Republic of Senegal (2006). Strategy Paper for growth and Poverty Reduction 2006-2010. <http://www.mpce.gouv.ht/dsrp.htm>.
- World Bank (2007). Senegal in search of employment, the path to prosperity. Country Economic Memorandum, Report No. SN-40344.