

Do South African fiscal reforms benefit women?

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ABSTRACT

Economic reforms affect men and women differently. In South Africa, gender and racial disparities still exist in the labour market, with women being highly vulnerable. The South African economy is in a depressed situation, with high levels of debt and public deficit. To improve the financial situation of the country, the government has implemented two new fiscal reforms: increase Value-added tax (VAT) for all commodities by 1%, excluding food, and reduce public spending by 5%. This paper evaluates the impacts of both reforms on women from all population groups in terms of employment and poverty levels, by using a Computable General Equilibrium model with micro-simulations. The simulations reveal that both policies have negative impacts on agents, particularly households and firms and poverty levels among women of all population groups. The hike in VAT increases the number of poor households, with women more affected than men. The drop in public spending shows negative impacts for all agents, however, it has lower impacts on poverty levels than those occurring from increasing VAT. The results reveal that South African women, of all population groups, are more vulnerable to the negative impacts of both reforms than men.

KEYWORDS: Gender, computable general equilibrium model, poverty, South Africa

I. Introduction

Compared to the rest of Africa, South Africa remains one of the richest and most developed countries on the continent. In 2009, the country embarked on a ‘New Growth Path’ and later, in 2011 adopted the National Development Plan (NDP) that envisages what a South African society should look like by the year 2030. In this plan, South Africa has committed itself to eradicating extreme poverty and reducing inequality. Indeed, South Africa remains one of the most unequal countries in the world, with a Gini index at 0.63 in 2015, and this high level has even increased since the end of the segregationist regime in 1994 (Sulla and Zikhali 2018; Van der Berg 2014). Levels of inequality can be observed not only in terms of wealth, but also in terms of education, and in the labour market. Leibbrandt et al. stated that 85% of income inequality is due to labour market income and that unemployment is the main cause of inequality (Leibbrandt et al. 2010)

High unemployment is currently a major problem in South Africa. According to the Quarterly Labour Force Survey (LFS: Q2, 2018), the official unemployment rate has been relatively high since 2008 (Statistics South Africa 2018a). Over the last decade, the unemployment rate

has increased from 23.2% in 2008 to 29.1% by the end of 2019 (Statistics South Africa 2019). Gender and racial disparities still prevail in the labour market. In the fourth quarter of 2019, the LFS indicates that the rate of unemployment for women was 31.3% compared to 27.2% for men (Statistics South Africa 2019). Similarly, the percentage of young people aged between 15 and 34 years who were not in employment, education or training (NEET) increased, and once again, this increase was higher for women than for men in all population groups.¹ In fact, in 2017 and 2018 the highest NEET rate of over 40% was recorded among African females (Statistics South Africa 2018a).

Although the number of women participating in the labour market in the South African economy has been increasing, women's labour force participation rate is lower than men's (58.9% versus 67.4%) (Statistics South Africa 2018b). Women have much poorer employment prospects compared to men. According to the 2019 International Labour Office (ILO) estimates for South Africa, the female workforce is larger than the male workforce only in the service sector (85.34% vs 61.88%). A finer cross-sector breakdown of the service industry and women's participation in the labour market indicates that female labour force is larger than male labour force in three sectors: Community, social and personal services (62%), wholesale and retail trade (52%), and private households (80%) (Statistics South Africa 2018b). In the industrial sector, the male workforce is almost three times larger than the female workforce (32% vs 12%). The agricultural sector is the smallest sector in the South African economy, employing 6.24% of the male and 3.30% of the female workforce. As well as gender disparities, the South African labour market is also characterized by racial disparities inherited from the apartheid-era. An extensive literature argues that racial differences in education and increased labour supply are important factors explaining inequality and unemployment. South African reforms improved educational gaps, but did little to improve inequality in the labour market (Anand, Kothari, and Kumar 2016; Kingdon and Knight 2007). In addition, to correct the inequalities of apartheid, measures such as the Black Economic Empowerment were implemented, which allowed the African population to be more integrated in the labour market but was detrimental to unemployment. According to (Banerjee et al. 2008), the abolition of apartheid was followed by an increase in women and Blacks in the labour force, which increased the supply of unskilled workers, thus, contributing to an increase in unemployment. Since attaining democratic rule in 1994, measures and policies have been implemented to build a more equal and multiracial society. However, despite clear improvements, the country still embodies high levels of inequality, particularly in the labour market, which faces significant structural problems.

Race still impacts the likelihood of finding a job, and differences in earnings among population groups remain (Sulla and Zikhali 2018). For instance, high-skilled occupations such as legislators, senior officials and managers, professionals, or technical and associate professionals are overwhelmingly occupied by Indian and White women, while lower-skilled occupations such as crafts and related trades workers, elementary occupation, or domestic workers are mainly performed by African and Coloured women (Statistics South Africa 2018b; Gradín 2018; Espi, Francis, and Valodia. 2019).

These gender disparities in the labour market lead to differences in revenue and impact poverty levels. Poverty is higher in female-headed households compared to male-headed ones. In 2015, the poverty headcount among female-headed households was 51.2% compared to 31.4% among male-headed households. Belonging to a female-headed household increases the likelihood of falling into poverty (by up to 10%) and reduces the chances of escaping poverty (2%) compared to members of a male-headed household. (Sulla and Zikhali 2018).

As for the labour market, there are large differences in poverty among population groups, with Africans having the highest likelihood of being poor. According to the Living Conditions Survey (LCS) in 2014/15 approximately 40.0% of South Africans were living below the upper-bound poverty line (UBPL). In terms of poverty, national statistics show differences between different population groups. Statistics indicate that the poverty headcounts of the different population groups according to the UBPL in 2015 were: African (64.2%); Coloured (37.1%); Asian/Indian (5.9%); and White (1.0%) (Statistics South Africa 2017).

Poverty rates are highest among Africans. In 2015, 47% of households headed by Africans were classified as poor, compared to 23% for Coloured ones. This contrasts with the poverty rates among Indian- and White-headed households which are around 1% (Sulla and Zikhali 2018; Gradín 2012).

Although South Africa has made progress in reducing poverty, the levels are very unequal along population groups and gender. More worryingly, the economic situation has worsened in South Africa over the last few years. According to South African Reserve Bank statistics, the country has a budget deficit that represents a significant percentage of the country's gross domestic product (GDP) (South African Reserve Bank statistics 2019). The deficit peaked in 2019, rising from -4.2 in 2018 to -6.3 as a percentage of GDP. Moreover, given the country's precarious financial situation and shortfall in revenue, there is a substantial increase in public debt over the last decade. Indeed, the percentage of debt in relation to the country's GDP increased from 25.9% in 2008 to 46.8% in 2018 (South African Reserve Bank statistics 2019). To improve the public finance situation and reduce its public debt, the Ramaphosa government has put in place two fiscal policies: an increase in the indirect tax rate and a cut in public expenditure. These two reforms are likely to impact the labour market and poverty levels. They may also increase the vulnerability of women.

This study assesses the impacts of these two fiscal policies on gender poverty. This is important as it exposes to policymakers, unintended consequences of the economy and society, particularly on vulnerable groups. This paper, although studying the South African economy, holds valuable lessons for other African countries. To evaluate the impacts of these two reforms, we use a static computable general equilibrium model (CGE) linked to a microsimulation model. CGE models are useful tools to capture the interactions between production activities, labour markets, and the different agents in the economy, while microsimulation models are used for assessing the impacts on poverty. The rest of the paper is organized as follows: Section 2 provides a literature review. Section 3 describes the model and the data used, while section 4 presents the results and section 5 concludes.

II. Literature review

Economic reforms affect men and women differently. Most of the research that study the impacts of reforms on men and women deal with trade reforms. Cockburn et al. (2010), following Annabi et al. (2008), assess the effects of trade liberalization on poverty and gender inequalities in Senegal, using a dynamic Computable General Equilibrium Model (CGEM) with microsimulations. They find that the gender wage gap is increasing because the sectors benefiting from the reform mainly employ men. Chitiga et al. (2010), using an integrated CGE microsimulation model with explicit incorporation of non-commercial activities and gender decomposition, assess the impacts of tariff elimination on South African men and

women. They find a strong gender bias against women with a decrease in their participation in the labour market which led to an increase in poverty levels.

Fofana (2015), following Fontana and Wood (2000) and Cockburn et al. (2007) in integrating domestic production, evaluates the increase in oil prices in South Africa from a gender perspective. He finds that although the 2007–2008 energy crisis affected the South African economy by reducing employment and income, the distributional impact between men and women has been neutral.

Using employment data for 234 municipalities in South Africa, Lepelle, Edwards, and Leibbrant (2017) evaluate how trade liberalization has impacted employment in manufacturing and service sectors for the period 1996 to 2011. They found that a decrease in tariffs in South Africa had a negative effect on employment for both men and women, but women were impacted more.

Latorre (2016) evaluates the impacts of trade liberalization combined with foreign direct investment (FDI) on gender in Tanzania, taking into account the Dixit-Stiglitz-Ethier framework of imperfect competition. They find that using this framework results in productivity gains, which have positive impacts on the incomes of all workers, but the positive impacts are less substantial for women.

In the case of South Africa, there are a few recent studies dealing with fiscal policies. Mabugu, Fofana, and Chitiga-Mabugu (2015) use a dynamic CGE model linked to a microsimulation model to analyse fiscal policy instruments and their implications on poverty. The authors propose a scenario of fiscal change under a fiscally consolidated framework, i.e. full recovery of tax reductions and exemptions. Their results indicate that increasing VAT and redistributing income to poor and extremely poor households generates pro-poor outcomes. Indeed, higher consumption taxes often increase the incidence of poverty. However, this expected result is completely reversed under the proposal to directly recycle the VAT revenues collected to poor households, enabling a decrease in poverty. Using a dynamic recursive CGE model, Roos et al. (2020) investigate the impact of an increase in VAT and increased public spending in South Africa. They find that the impact of the increased VAT is negative on growth.

Our research will complement the existing literature for South Africa by assessing the impact of tax reforms (1% VAT increase) and government expenditure reforms (reduction of public spending by 5%) undertaken by the Ramaphosa government on poverty among women.

III. Model and data

CGE model

To evaluate the impacts of fiscal reforms on women's employment rate and poverty levels, we use the PEP 1–1 model developed by Decaluwé et al. (2013), but several modifications have been made to allow our paper to focus on gender and specifically, to the case of South Africa.

The Social Accounting Matrix (SAM) used for the model has 21 activities and commodities. Constant returns to scale presented in a four-level production process are assumed for the production function technology. At the top level and for each activity, production is a

Leontief function of value-added and intermediate consumption. At the second level, we assume that composite labour can be substituted with capital following a Constant Elasticity of Substitution (CES) function. Labour is disaggregated between skilled, semi-skilled and low-skilled in our SAM. To take into account the characteristics of the South African labour market, each sectoral labour demand is disaggregated by population group. Due to historical reasons, job opportunities for people with the same skill requirements are treated differently, depending on the colour of their skin. Due to Apartheid, which legislated differential education systems based on race, there has been persistence of racial job discrimination. This is because the white schools were well resourced compared to the black schools where also, inferior education was offered. This segregation has manifested in the fact that Black people, and to some extent, Coloured people, have continued to trail behind their white counterparts in the labour market (see Jaga et al., 2018 and Naidoo, Stanwix Karmen, and Yu 2014).

Based on these considerations, at the fourth level, for each skill category, the labour demand is a CES among the different population groups (African, Coloured, Indian and White). Finally, at the fifth level, for each population group, men and women workers are imperfect substitutes.

The model distinguishes four different institutions: households, firms, the government and the rest of the world. Households are disaggregated into two categories, according to whether they are a female- or male-headed household. Both households receive their income from labour, capital and transfers. Male-headed household income mainly comes from labour (86.6%), while labour income for female-headed households represents a smaller proportion of their income (71.6%). Transfers from the government represent 5% of female-headed household income, against 1% of male-headed household income. Transfers from firms are modelled as a share of firms' disposable income, while transfers from the rest of the world and from the government are set to their initial values and indexed to the consumer price index (see Decaluwé et al. 2013). With this choice of modelling, transfers are treated as neutral as possible. Both households spend their income in final consumption, direct taxes, transfers to other economic institutions and savings. Their consumption behaviours are specified with a linear expenditure system (LES) type of function (Stone (1954). Women spend 87.9% of their income on final consumption compared to men, who spend 81.7%.

Firms' income is based on transfers from other institutions and mainly on capital income. They pay income taxes and dividends and the remaining income constitutes the firms' savings. Government's income comes from three different sources: direct taxes from households and firms, indirect taxes (import duties, taxes on commodities, taxes on production) and transfers from other institutions. Government consumption spending is mainly on the non-tradable sector's production. Government savings is the difference between its income, and its consumption and transfers paid to other institutions.

Households, firms, government and the rest of the world's savings sum up to total savings available in the country which is equal to total investment. This investment budget is used to buy commodities for investment purposes.

To link South Africa and the rest of the world, we use the traditional approach in CGE modelling. Trade is modelled based on the assumption of imperfect substitutability of commodities given their origin (the Armington assumption). On the exports side, to increase their market shares, South African producers need to be more competitive than other foreign producers. Therefore, we assume that export demand has a finite elasticity, through a foreign

export demand function for each commodity, reflecting the competitiveness of local producers on the international markets. With regard to the value of elasticity, we use a value of 3 for most of the commodities, as estimated by Behar and Edwards (2004).

As mentioned in the introduction of this paper, South Africa is faced with high unemployment problems (29.1% in 2019, (Statistics South Africa 2019)), and the unemployment rate is relatively higher for women than for men (Statistics South Africa 2018b). Following Blanchflower & Oswald (1995), we assume that there is an equilibrium wage rate compatible with the unemployment rate. The authors show the existence of an empirical relation linking wage rates and unemployment rates, also called the ‘wage curve’. The relation shows a negative slope between unemployment rates and wage rates. Kingdon and Knight (2004), Kingdon and Knight (2007) show that the elasticity of wages to local unemployment rates is similar to that found by Blanchflower & Oswald (1995) in other countries, in which a 10% increase in the unemployment rate leads to a 1% decrease in wages.

Data

The SAM we use is based on that of Davies and Thurlow (2013). For this study, we disaggregated the labour market to include both gender and population group dimensions. The data used are obtained from the household survey and the 2011 data on South African industry by gender, occupation and population group (Statistics South Africa, 2012). Our labour force is disaggregated by skills (skilled, semi-skilled and unskilled), population group (African, Coloured, Indian and White) and gender (male, female) ending up with 24 categories of labour. Each activity uses both capital and the 24 labour force categories in different initial proportions. Our final SAM includes 21 activities and 21 products. Along with the SAM, we use additional data such as income elasticity from Burger et al. (2017), and trade elasticities from Gibson (2003). With respect to the substitution elasticities in the production function between the different types of labour, we use low elasticities in the order of 0.9, 1.1 and 1.3 for skilled, semi-skilled and unskilled workers, respectively, which *assumes that it is easier to substitute unskilled workers than skilled workers.*

Micro simulation module

To assess the income distribution and poverty impacts, we link the CGE model to a micromodule in a top-down manner, which implies that the macro results feed the micro-component of the model. In other words, in a first step, we use the CGE model to determine the different sources (and variations) of households’ income, as well as their consumption basket and consumption prices. In a second step, using the National Income Dynamics Study (NIDS), Wave 5 data (SALDRU 2018), we model the impacts of these variations using the Foster, Greer, and Thorbecke (1984) poverty indexes.

IV. Results and findings

Scenarios, closure rules and macroeconomic channels

We evaluate the impacts to the labour market and poverty levels of the two economic policies the Ramaphosa government recently implemented in order to improve public finances and reduce public debt. The first scenario assesses the impacts of increasing VAT rates for all commodities excluding food by one percentage point (National Treasury, 2018). The second

scenario deals with decreasing the government spending on goods and services by 5%, as suggested by the National Treasury (2020).

To evaluate both scenarios, it is important to have in mind the closure of the model. The nominal exchange rate is taken as the numeraire of the model. South Africa is assumed to be a small open economy and therefore world prices are exogenous. Moreover, the South African current account balance as well as government's spending on good and services are assumed fixed. Labour and capital supply are fixed while the wage rate and rental rate to capital are endogenous. Labour is mobile across sectors while capital is sector-specific, characterizing a short-run assumption. The minimum consumption per commodity for each household, as well as the volume of inventories, are fixed. Finally, all the tax rates (direct, indirect, imports, on production) are fixed.

In the first shock, the increase in the VAT is simulated by increasing the indirect tax rate by one percentage point for all commodities but food, while in the second scenario, which involves a cut in government spending, the shock is implemented through a decrease by 5% of the government spending on goods and services (which is an exogenous variable in our model).

The increase in the VAT tax rate (simulation 1) applies to all the commodities sold in the country, except food, either final or intermediate. However, in order to avoid a cascading effect, firms benefit from a rebate from the government on their intermediate consumption. We follow the approach of Go et al. (2005) to model the rebate. In their model (and ours), for all commodities sold in the country, a fixed tax rate is applied, whatever the use of the commodity (final or intermediate). The firms receive a rebate based on the amount of taxes they paid on intermediate inputs. The price of the intermediate input takes into account the rebate. Thus, there is no cascading effect of an increase in the VAT tax rate, and the burden is on final commodity purchasers, such as households.

It is expected that increased VAT translates into increased fiscal resources, and *ceteris paribus*, an increase in government's income and savings, with the latter leading to a positive impact on total investment. However, the same increase has a negative impact on households' consumption, as the price of the commodities is increasing. The drop in the consumption will affect the sectors that produce these commodities and it can have an impact on employment.

In the second scenario, it is expected that the cut in public spending has two direct effects: on the one hand, it increases government savings, and, *ceteris paribus*, total investment. On the other hand, with a reduced budget, government will offer less services, retrench workers and this will also have impacts on employment and other sectors.

Macro results

The increase in the indirect tax rates on final commodities leads, as expected, to a decrease in households' real consumption and the consumer price index (Table 1). The decrease in final consumption will affect sectors whose main market is final consumption (See section 4.3). These sectors will retrench workers and this will lead to a decrease in total employment by 0.84% and, thus, an increase in unemployment. The decrease in some sectors' production implies that exports also decrease. Moreover, with the decrease in households' income and the drop in some sectors' production, imports decrease as well. The increase in the CPI will have an impact on government's real consumption, which decreases by 1.05% given that its

budget on goods and services is fixed. The increase in the indirect tax rates on commodities leads to an increase in government tax receipts and government's total income, which result in an improvement of its current deficit. Consequently, total investment budget is increasing. However, overall, the impact on real GDP is negative (-1.72%). A similar result is also found in Roos et al. (2020).

Table 1. Macro Results (in %)

	Simulation 1	Simulation 2
Real GDP at basic prices	-1.72	-0.32
Total Employment	-0.84	-0.64
Real Public consumption	-1.05	-4.01
Imports	-0.07	0.61
Exports	-0.07	0.86
Consumer price index	0.66	-0.61
Real consumption budget of Female-headed households	-1.07	-0.41
Real consumption budget of Male-Headed households	-1.16	-0.60
Total investment expenditures	3.99	4.47

Source: Calculations based on the CGE model

The decrease in government spending on goods and services (Simulation 2) affects the economy through different channels. It has a direct impact on the provision of public services (decrease) and on the unemployment rate (increase). Indeed, with a reduced budget, the government decreases its supply of services and lays off workers. These workers will try to find other jobs in other sectors, thus, putting downward pressure on the wage rate. Production prices decrease leading to a decrease in the CPI. Given the decline in prices, South African producers are relatively more competitive and can increase their market share in the international market. Therefore, total exports increase by 0.86%. As the current account balance is fixed, an increase in exports allows an increase in imports. For both scenarios, given the increase on government' savings, either from extra revenues (scenario 1) or decrease in expenditure (scenario 2), total investment is increasing, respectively, by 3.99% and 4.47% in the first and second scenarios. This increase in the budget of total investment will benefit the sectors producing commodities for investment purposes (see section 4.3). In this simulation too, the overall impact on GDP is also a reduction (-0.32%).

Sectoral results

Simulation 1: One percentage point increase in VAT

Sectors will be affected differently depending on whether they depend on household final consumption for their sales or not. Indeed, sectors such as food or hotel and accommodation sell more than two-thirds of their production to households as final commodities. Therefore, a decrease in households' consumption, due to the increase in the VAT will impact these sectors more than others. All sectors of the economy suffer a decrease, except construction, basic iron/steel, electrical machinery and other non-metallic mineral products sectors. These four sectors benefit from the increase in total investment as they mainly supply investment goods. For instance, 80% of the commodities produced by the construction sector are sold as investment goods. For sectors that suffer a decrease in production, they lay off workers and reduce their demand for intermediate commodities from other sectors. Therefore, due to

intersectoral relations, some sectors such as the food sector, which was not originally hit by the reform, see their production declining as a consequence of other sectors suffering.

Given the decrease in the production of most of the sectors, the overall labour demand is decreasing, and the decrease is greater for women (-0.98%) than for men (-0.76%). Taking a closer look at the demand for labour according to skill level, we find that the demand for unskilled labour decreases the most (-1.09%). If we now look at labour demand by sector, labour demand decreases in all sectors except in the four sectors identified above where production is increasing (construction, basic iron/steel, electrical machinery and other non-metallic mineral products sectors). In these sectors, labour demand increases and benefits all the categories of workers, especially skilled Indian and White women who experience an increase by more than 1%. However, this increase in labour demand in the four sectors is not big enough to compensate the lay-offs from the other sectors. Overall, skilled White and Indian women see their labour demand decrease by -0.47% and -0.48% , respectively, but they are less affected than their African and Coloured counterparts who face a decrease by -1.18% and -0.83% , respectively.

This result is explained by the fact that these sectors have higher proportions of skilled workers for White and Indian women in the baseline. This finding on the skill market for women is similar to what we find at the global level with overall labour demand decreasing more for African women (-1.20%) than Coloured (-0.98%), Indian (-0.86%) and White (-0.68%). Concerning African and Coloured women, it is the construction sector that offers them more employment, particularly for semi-skilled and unskilled categories. In short, although there is a general decline in the labour force, it is the skilled workers who are least affected.

The sectors that experience the most significant decreases in the labour force are manufacture of textiles and wood, agriculture, water, and the petroleum sector. This leads to a reduction in production in these sectors. The decrease in production leads to a decrease in exports for almost all sectors. Imports also decrease for most of the commodities. This can be explained by the decrease in household income, as will be clarified later, and also by the closure rule of the model. The current account balance is fixed, meaning that a decrease in exports has to be compensated by a decrease in imports.

The labour demand decrease impacts the unemployment rates and the wage rates of the different labour categories. However, the gender and population group analysis allow us to note that there are particular differences within each category of workers. Firstly, we find that the increase in unemployment is slightly more pronounced among women ($+0.6$ percentage points) than among men ($+0.5$ percentage points). In addition, the results for female population groups show some differences given the skills levels. As indicated three paragraphs above, female Indian and White skilled workers are relatively less affected by the drop in employment and, therefore, their relative unemployment rate rises by 0.46 and 0.45 percentage points, respectively. The increase in unemployment rates mainly affects unskilled Indian women (0.65 percentage points), unskilled White women (0.77 percentage points), and unskilled African women (0.70 percentage points). Regarding African women, we note the smallest increases in unemployment rates, mainly for semi-skilled women (0.61 percentage points).

Simulation 2: A 5% decrease in public spending

The sector directly affected by this policy is the public administration sector, which is also highly labour-intensive, and especially female intensive. However, the shock will spread to the other sectors of the economy through intersectoral linkages and the labour market. As expected, the public sector will reduce employment and those made redundant will try to find jobs in the other sectors, exerting downward pressure on wages. The volume of services supplied by the administration sector declines by 3.65%. Labour-intensive sectors will benefit from the wage decrease and hire new workers. However, it should be noted that the other sectors cannot absorb all the additional labour supply released from the administration sector. Production increases in 13 out of 21 sectors of the economy, leading to an increase in exports for these activities. This increase in exports is driven by the fact that the decline in prices, makes South African products relatively more competitive, and thus, increases their market share in the international market. Sectors such as construction, electrical machinery and transport equipment also benefit from the increase in total investment budget.

In terms of unemployment and wages, we observe a general decline in the wage rate for all categories of labour. On average, workers see their wage rate decline by 0.8% for male and by 0.9% for female workers. Concerning women, the most affected by the wage rate decline are African and Coloured workers, who experience a decrease of 1.1% and 1.2%, respectively. We find that female labour demand decreases more than that of men (-0.88% vs -0.93%) and this is due to the high intensity of females working in the administration sector. Consequently, to the decrease in total labour demand, there is an increase in unemployment in all categories of labour; however, skilled workers are the most affected. It is interesting to note that unskilled unemployment shows the lowest increases for both men and women. Among women, those most affected by the increase in unemployment are the skilled African and semi-skilled African women, who experience increases of 1.11 percentage points and 0.74 percentage points, respectively.

Impacts on agents

Following the VAT rate increase, the total government's income increases by 2.98%. As government spending is fixed in simulation 1, government's deficit reduces substantially. Firms get their income mainly from capital income. As explained in section 4.2, as production is decreasing in most sectors in the economy, capital rentals are also decreasing, meaning a reduction in income for firms. As mentioned in section 4.3, the unemployment rate is increasing and the wage rate is decreasing, leading to a reduction in incomes. The decrease in income is slightly greater for men (0.51%) than for women (0.41%). Moreover, given the increase in the prices of goods, male and female-headed household consumption decreases.

Concerning the second simulation, the effects on the government are not entirely favourable. We have a decrease in all sources of fiscal revenue, with the only exception being revenue from import duties which increases by 0.60%. This, however, is not the main source of revenue. Overall, total government revenue decreases by 0.65%, as does final real public consumption of products, which falls by 4.01%. In the accumulation account of the government agent, we probably have the most salient effects. The results show a reduction of this negative balance of about 70%. This suggests that this economic policy responds favourably to the Government's objective of reducing the public deficit. Firm's incomes decrease by 0.54%, due to a decrease in capital income as do their savings which decrease by 0.55%.

Following the increase in the unemployment rate and the decrease in the different wage rates, household income decreases by 1.20% for male-headed households and by 1.02% for female-headed ones. All three sources of income are down for both types of households. Transfer income, which accounts for 31% of women's income (vs 12% for men's), is declining, which explains why women's total income is declining more than men's. Among transfer income, households mainly receive transfers from firms, and to a lesser extent from government and the rest of the world. As firm's income is decreasing, transfers from firms to households are also decreasing, driving the change in households' transfer income.

Although a decline in prices is observed in this simulation, this decline does not compensate for the decrease in household income; thus, overall, there is a decrease in real incomes, and consequently a decrease in household consumption. In other words, there is a deterioration in the purchasing power of South African households that is slightly higher in male-headed households (-0.60%) than in female-headed ones (-0.42%). Household savings decrease for both categories of households.

Impact on poverty

To assess the impacts of a 1% increase in VAT rate (Simulation 1) and a cut on government spending by 5% (Simulation 2) on poverty, we use the poverty headcount (FGT0), the poverty gap (FGT1) and the severity of poverty (FGT2). As shown in Figure 1, the impacts on poverty are quite interesting.

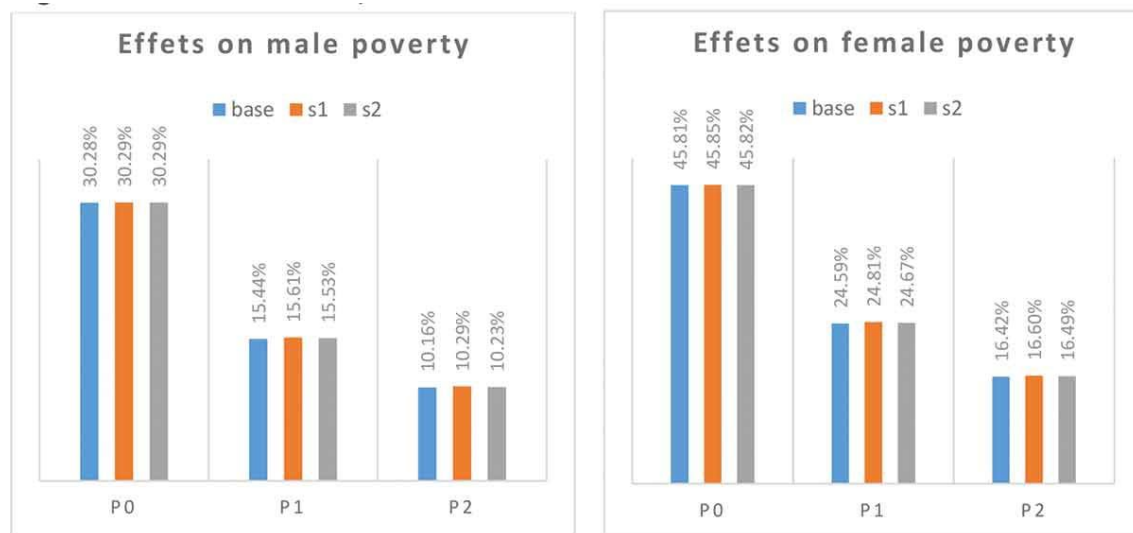


Figure 1. Effects on poverty

Source: Calculations based on the micro-simulation model. Notes: S1= Simulation 1, S2 = Simulation 2, BASE = Baseline scenario

The results show that South African women of all population groups are more vulnerable than men to the impacts of both reforms in terms of poverty. The increase in the rate of VAT increases the number of poor households, with women more negatively impacted than men. Indeed, the poverty headcount among women increases by 0.04 percentage points ending up with about 46% of female-headed households being poor. This economic reform is

particularly regressive, with an increase of poverty among the poorer households (an increase of the FGT 2 index for both households, with a greater increase for female-headed households (0.18 percentage points)).

The decrease in government spending has lower impacts on poverty. There is a slight increase of the depth and severity of poverty (respectively, 0.09 and 0.07 percentage points for men and 0.08 and 0.07 percentage points for women).

V. Conclusions and policy recommendations

The purpose of this study was to evaluate the effects of the two recent fiscal reforms on women's welfare in South Africa. Traditionally, women are more vulnerable to men in terms of poverty and unemployment and their precarious state can easily be worsened by government reforms. Thus, carrying out this evaluation was very important. In order to achieve this, a CGE model, coupled with a microsimulation module was developed for this study.

Increasing VAT by one percentage point increases the consumption cost of the end users of the products (households) and leads to a decrease in production especially for sectors depending on final consumption for their sales. The increase in VAT increases the number of poor households, with women more heavily impacted than men leading to the number of poor female-headed households to increase slightly below 46%. The severity of poverty increases more for female-headed households than for male-headed households.

Reducing public spending by 5% impacts massively the public administration service, leading to redundancies and wage decreases, with a large spillover effect into labour in the other sectors of the economy, dragging down the wage rates further due to increased competition for limited work opportunities.

Household incomes fall for both male and female-headed families, though the reduction is more for male-headed households. There is a reduction in the purchasing power of both male and female-headed households along with a drop in savings. The decrease in government spending has a lower impact on poverty levels than those occurring from increasing VAT, with only slight increases in the depth and severity of poverty for both genders.

Overall, this paper has shed some light into the negative impacts of the two fiscal reforms on women in South Africa. Both reforms have similar impacts, as both lead to increased overall unemployment, lower wage rates, lower purchasing power and increased poverty among different population groups, with women nearly always worse affected than men. However, reducing public spending has only slight negative impacts on household poverty. Female population groups are also affected differently, depending on skill level and population group. The results from this paper serve to show the government the knock-on effects these reforms on the population and thus, can influence the government into taking appropriate measures to ameliorate the burdens of these fiscal reforms, particularly on the already vulnerable women. Moreover, the results of this paper hold far-reaching lessons beyond South Africa, they can inform future design of fiscal policy for other African countries, especially those interested in reducing gender inequalities.

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Notes

1 Throughout the paper, we will follow the South African typology which groups races into four population groups: African, Coloured, Indian and White.

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