

**TMD DISCUSSION PAPER NO. 101
FCND DISCUSSION PAPER NO. 139**

**CAN SOUTH AFRICA AFFORD TO BECOME
AFRICA'S FIRST WELFARE STATE?**

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October 2002

TMD Discussion Papers contain preliminary material and research results, and are circulated prior to a full peer review in order to stimulate discussion and critical comment. It is expected that most Discussion Papers will eventually be published in some other form, and that their content may also be revised. This research represents a joint project between IFPRI and Trade and Industrial Policy Strategies (Johannesburg, South Africa). The IFPRI component of this paper was written under the project "Macroeconomic Reforms and Regional Integration in Southern Africa" (MERRISA), which is funded by DANIDA (Denmark) and GTZ (Germany). This paper is available at: <http://www.cgiar.org/ifpri/divs/tmd/dp.htm> and <http://www.tips.org.za>

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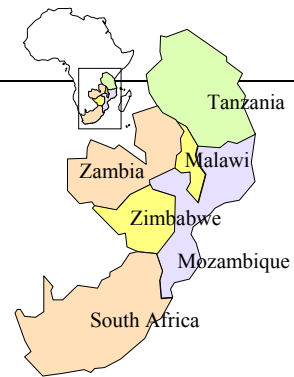
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Can South Africa Afford to Become Africa's First Welfare State?

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**MACRO
ECONOMIC
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SOUTHERN
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Can South Africa Afford to Become Africa's First Welfare State?

James Thurlow¹

Abstract

This paper assesses the economy-wide impact of implementing and financing a universal or basic income grant (BIG) in South Africa. The various financing scenarios suggested by the proponents of the grant are presented, and these are compared using an applied general equilibrium model for the South African economy. The results indicate that the required changes in direct and indirect tax rates needed to finance the grant without increasing the government deficit are substantially higher than currently predicted. Furthermore, the alternative of reducing government recurrent expenditure to finance the BIG will undoubtedly undermine other government policy objectives. The paper therefore proposes a shift in the current debate, away from determining which of the individual financing options is preferable, towards an acknowledgement that a 'balanced' approach is likely to provide the only feasible scenario. Furthermore, the impact of the grant on economic growth is found to hinge on its ability to enhance factor productivity. These results suggest that the possibility of South Africa becoming the continent's first welfare state is as likely to rest with the macroeconomic impacts of financing the grant, as with the ability of the grant to address the country's prevailing poverty.

¹ International Food Policy Research Institute (IFPRI), Washington D.C., and University of Natal, Durban. The author would like to thank Marzia Fontana (IFPRI), Francie Lund (University of Natal, Durban), Christen Lungren (IFPRI), Sherman Robinson (IFPRI), and Dirk van Seventer (Trade and Industrial Strategies, Johannesburg) for their comments and suggestions.

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1. Introduction

While South Africa is acknowledged as having one of the most unequal income distributions in the world (World Bank, 2002), these distinctively high levels of *relative* poverty should not overshadow the severe *absolute* poverty that also exists within the country. Using an international benchmark of absolute income-poverty reveals that around one fifth of South African's live on less than US\$1 per day (May, 1998; Ngwane et al, 2001). Further research, using non-income-based measures of poverty, shows that 16 percent of the adult population are illiterate (UNDP, 1999), 30 percent are unemployed (May, 1998), and one in four children are malnourished (Mgijima, 1999). When coupled with risk, vulnerability and rural marginalization, it is clear that a large number of South Africans are trapped in a state of unacceptably low standards of living.

In the context of such poverty, it is not surprising that the current South African government is now placing significant emphasis on the country's social security system (DSD, 1997). In 2000 the Department of Social Development commissioned the Taylor Committee to investigate the current system's merits and shortcomings (Taylor, 2002). One of the principal conclusions of the Taylor Report is that "the existing social security programs do not adequately address the problem of poverty." In order to close the gaps in the system and to encourage a better take-up of the available grants, the Taylor committee recommended comprehensive reform and the introduction of a 'basic income grant' (BIG).

This universal grant would amount to R100 or US\$10 per month, and would be paid to individuals over and above existing government transfers. Despite the proposed phase-in, by which children under the age of 18 would be the first to receive the grant, ultimately this transfer would be made available to *all* South Africans regardless of age or income level. Such a policy-move would make South Africa the first African welfare state (Jeter, 2002).

This paper attempts to determine the economic and, to a lesser extent, the political feasibility of implementing and financing the basic income grant in South Africa. The next section provides a brief overview of the current social security system as well as an outline of the debate surrounding the proposed BIG. The paper then assesses the various financing scenarios suggested by the proponents of the grant using an applied general equilibrium model for South Africa. This model is described in Section 3, and the results from the study are presented in Section 4. The paper concludes by drawing out the implications of the results for the current debate, as well as providing areas where further research is necessary.

2. The Proposed Basic Income Grant

Given the high levels of poverty in South Africa, both the previous and current governments introduced some form of social security. By 2001, around 3.5 million of the total population of 41 million received state assistance (Taylor, 2002). Currently, the two largest components of social security spending are the old age pension and the disability grant, which account for 60 and 24 percent of the social security budget respectively (May, 1998). Both programs are non-contributory and means tested, and in 1998 amounted to an average R490 or US\$49 per month transfer to 2.5 million people. However, despite being targeted at individuals, the pension program in particular is likely to support the living standards of individuals beyond their immediate beneficiaries. According to May (1998), the state pension offers many poor households a regular income and provides a basic level of food security against seasonal and other fluctuations. Nevertheless, over three quarters of adults and children currently live in households with no pensioners, and as such many of South Africa's poor are not even indirect beneficiaries of the social security system (Taylor, 2002).²

² According to Duncan (2001), the value of current government transfers to the poorest 40 percent of the population is R42 or US\$4.20 per person per month. However, this figure might be misleading for two reasons: (i) not all households contain pensioners and children, and (ii) not all government transfers to pensioners and children are likely to be evenly pooled amongst all individuals within their beneficiary households. While acknowledging this shortcoming, this result does indicate that a BIG of R100 per month is a substantial increase on Duncan's estimate of existing per capita transfers.

By avoiding a means test, it is expected that a BIG will be able to close the poverty gap by 74 percent (Samson et al, 2002) and effectively reach the 13.8 million South Africans in the poorest households currently not receiving, even indirectly, any form of social assistance (Duncan, 2001). Furthermore, the Taylor Report (2002) indicates that the grant “has the potential, more than any other possible social protection intervention, to reduce poverty and promote human development and sustainable livelihoods.”

According to Samson *et al* (2002), the overall economic impact of the BIG is transmitted through three mechanisms. These include: (i) an increase in factor productivity resulting from an improvement in health, education and social stability; (ii) an increase in labor supply as people would be able to spend more time in search of employment and be able to finance their own entrepreneurial activities, and an increase in labor demand resulting from the increase in productivity; and finally (iii) an increase in economic growth through an increase in aggregate demand, and through a compositional shift in income away from households with import- and capital-intensive spending patterns. The ability of the BIG to generate the above three positive impacts on the economy is critical, since it is assumed that the predicted long-term economic growth will lessen the negative fiscal impact of the grant.

Given a population of approximately 41 million people, the BIG would amount to an annual transfer of R49 billion in current prices.³ This grant represents 5 percent of gross domestic product (GDP), and triples current government transfer spending.⁴ The magnitude of this additional spending has raised serious concerns about whether the current fiscal budget can afford to implement this policy (Forrest and Kindra, 2002).

Due to the prevailing inequality in South Africa as well as the scale of the proposed grant, the BIG has received considerable publicity both within and outside of the country (Jeter, 2002). Beyond the ruling African National Congress’ interest in the grant, the

³ Taylor (2002) estimates the gross cost of the BIG to be R43.8 billion, thus implying a population of approximately 36 million people.

⁴ In order to remain consistent with data sources used in later sections of the paper, the BIG is adjusted to 1998 prices, and the calculations are based on the 1998 social accounting matrix for South Africa (Thurlow and van Seventer, 2002).

country's main opposition party has selected the BIG as a key component of its political campaign (Andrew, 2001), and an independent coalition of trade unions, non-government organizations, and health and religious institutions has been formed to promote the implementing of the grant (COSATU, 2002; Duncan, 2001).

A number of financing scenarios have been suggested by the various organizations that support the grant. One scenario suggests that the government increase sales taxes in order to raise the necessary revenue (Taylor, 2002). The BIG Coalition estimates that an increase in sales taxes by 2 percentage points, from its current book rate of 14 percent, should be sufficient to cover the additional cost to government (Duncan, 2001). The Congress of South African Trade Unions, which has traditionally been opposed to increases in sales taxes due to their regressive structure, has recommended that a 'solidarity tax' be imposed on high-income earners (COSATU, 2002). Along similar lines, the research underlying the Taylor Report suggests that the current structure of direct taxes in South Africa is such that personal and corporate tax rates could be raised (Samson *et al*, 2002; Taylor, 2002). Finally, it is also possible that part of the financing of the new grant might be achieved through a compositional shift in current government spending away from consumption expenditure on goods and services.

Although the Taylor Report made reference to its own assessment of the financial viability of the BIG, it did not make these findings explicit, preferring rather to suggest that detailed financing issues were beyond its mandate (Forrest and Kindra, 2002). Given both the scale of the BIG and the contention surrounding its financing, it is necessary to undertake a rigorous assessment to determine not only whether certain financing options are more economically feasible than others, but also what the economy-wide impact of the grant and the suggested financing package will be on the South African economy.

Using a recently constructed computable general equilibrium (CGE) model for South Africa, this study simulates the macroeconomic impact of the proposed BIG under a series of financing scenarios. These include: adjustments in sales tax rates; adjustments in

direct tax rates; a decrease in government consumption expenditure; and a balanced combination of these three financing options.

Before turning to a description of the CGE model, it is important to emphasize that this study is primarily concerned with determining the impact of the BIG on the South African macroeconomy, and assessing the financing options discussed above. While some conclusions are drawn regarding the policy's distributional effects on household incomes, it is by no means an attempt to fully capture the ability of the BIG to alleviate broadly defined poverty. On the contrary, beyond the quantitative income-measure used in this study, poverty also encompasses such factors as vulnerability, social and geographic marginalization, and a lack of participation. While these dimensions of poverty must be taken into account when weighing the effectiveness of the BIG against other forms of social security, the ability of the BIG to address these areas of deprivation is beyond the scope of this income-based and largely macro-focused study.

3. Model Description and Data Sources

The macroeconomic impact of implementing and financing a basic income grant is modeled using a computable general equilibrium (CGE) model for the South African economy, which is benchmarked on the year 1998 and is presented in Thurlow and van Seventer (2002). This class of model has developed from the neoclassical modeling tradition originally presented in Dervis, de Melo and Robinson (1982). A detailed mathematical description of the model can be found in Lofgren *et al* (2001).

Model Description

In accordance with the South African social accounting matrix (SAM), the model distinguishes between 43 productive activities and the 43 commodities that they produce. Although activities and commodities are equally disaggregated in this model, their distinction allows individual activities to produce more than a single commodity and conversely, for a single commodity to be produced by more than one activity. The model identifies four factors of production: three types of labor (unskilled, semi-skilled and skilled) and the production factor capital. Producers in the model make decisions in order to maximize profits, with the choice between factors being governed by a constant elasticity of substitution (CES) function. Once determined, these factors are combined with fixed-share intermediates using a Leontief specification. Profit maximization implies that the factors receive income where marginal revenue equals marginal cost based on endogenous relative prices.

Substitution possibilities also exist between production for the domestic and the foreign markets. This decision of producers is governed by a constant elasticity of transformation (CET) function which differentiates between exported and domestic goods, and by doing so, captures any time or quality differences between the two products. Profit maximization drives producers to sell in those markets where they can achieve the highest returns. These returns are based on domestic and export prices (where the latter are determined by world prices times the exchange rate adjusted for any taxes). Under the small-country assumption, South Africa is assumed to face a perfectly elastic world demand at a fixed world price. The final ratio of exports to domestic goods is determined by the endogenous interaction of relative prices for these two commodity types.

Further substitution possibilities exist between imported and domestic goods under a CES Armington specification. Such substitution can take place both in final and intermediates usage. The Armington elasticities vary across sectors, with lower elasticities reflecting greater differences between domestic and imported goods. Again under the small country assumption, South Africa is assumed to face infinitely elastic world supply at fixed world

prices. The final ratio of imports to domestic goods is determined by the cost minimizing decision-making of domestic demanders based on the relative prices of imports and domestic goods (both of which include relevant taxes).

The model distinguishes between various institutions within the South African economy, including enterprises, the government, and 14 types of households. The household categories are disaggregated across income deciles with the exception of the top decile, which has five income divisions. Households and enterprises receive income in payment for producers' use of their factors of production. Both institutions pay direct taxes to government (based on fixed tax rates), save (based on marginal propensities to save), and make transfers to the rest of the world. Enterprises pay their remaining income to households in the form of dividends. Households, unlike enterprises, use their income to consume commodities under a linear expenditure system (LES) of demand.

The government receives income from imposing activity, sales, and direct taxes, and import tariffs, and then makes transfers to households, enterprises, and the rest of the world. The government also purchases commodities in the form of government consumption expenditure, and the remaining income of government is (dis)saved. All savings from households, enterprises, government and the rest of the world (foreign savings) are collected in a savings pool from which investment is financed.

Macro Adjustment Rules

The model includes three broad macroeconomic accounts: the government balance, the current account, and the savings and investment account. In order to bring about equilibrium in the various macro accounts, it is necessary to specify a set of 'macroclosure' rules, which provide a mechanism through which adjustment is assumed to take place.

A savings-driven closure was assumed in order to balance the South African savings-investment account. Under this closure, the savings rates of households and enterprises

are fixed, and real investment quantities adjust to ensure that the level of investment and savings are equal at equilibrium.⁵

For the current account it was assumed that a flexible exchange rate adjusts in order to maintain a fixed level of foreign savings. In other words, the external balance is held fixed in foreign currency. In the government account, the decision of which variables will ensure macroeconomic balance varies according to the particular financing option being analyzed, and this is discussed alongside the simulations in the next section. Finally, the domestic price index was chosen as the numeraire.

On the microeconomic side, firms are assumed always to be on their factor demand curves. In the South African model it was assumed that both unskilled and semi-skilled labor face unemployment, and that this labor category is therefore paid a fixed real wage under the condition of a perfectly elastic labor supply. This assumption is in accordance with the Taylor Report (2002), which predicted an increase in labor supply following the introduction of the BIG. For the remaining labor and capital categories it was assumed that factor supplies are fixed and wages are free to adjust.

Calibration and Solution

The term ‘calibration’ refers to the use of observed values for a particular year to calculate the share coefficients found in the CGE model. For the South African model, these values were obtained from the 1998 social accounting matrix (SAM) compiled by Thurlow and van Seventer (2002). Additional information on the values and data sources of the behavioral parameters can also be found in the above paper. The model parameters are calculated so that the initial equilibrium reproduces the base-year values from the SAM. The relevant exogenous policy variables describing the BIG are then adjusted and the model is re-solved for a new equilibrium. The values of the endogenous variables in

⁵ There is no specification of the financial sector in the CGE model. For example, the crowding-out of investment is assumed to be driven by *implicit* changes in the bond or money market. For example, the government issues additional bonds and, in order to sell these to the private sector, it is necessary to raise interest rates. This increase in interest rates drives down the level of investment, but all this is outside of the CGE model.

this new equilibrium are compared to their initial values, and based on these changes conclusions are drawn concerning the impact of the new grant.

Limitations of the Model

The sectoral and institutional detail of this economy-wide model makes it the ideal analytical tool for this study. However, by being a static rather than dynamic model, it is limited in its ability to assess the entire impact of the BIG. For example, it does not take into account the sequencing of adjustment over time, or make predictions as to how long the adjustment will take. In using before-after comparative static analysis, the model does not take into account the dynamic feedback effects of savings and investment decisions on subsequent periods.

A second limitation of this model is in the treatment of labor and households. No distinction is made between formal and informal labor, and the model does not take into account the intra-household distribution of income. Furthermore, the simulations in the model assume a perfectly targeted transfer from government to households. Such an assumption is likely to overstate the take-up of the grant, while understating its administrative cost, especially given the corruption that is present in the South African social security system (Camerer, 1997).⁶

In regards to the three mechanisms for economic growth described by Samson *et al* (2001), this paper does not take into account the dynamic impact of possible factor productivity changes. Although higher productivity due to increased transfers is an appealing assumption, this study does not simulate improved productivity, since no quantitative evidence of the magnitude of the resulting productivity increase is available. However, the specification of the labor market does allow for changes in the demand and supply of labor (although such changes are limited to particular labor categories as

⁶ Teggemann (2001) states that “in South Africa..., an estimated 10 percent of the social security budget is lost due to fraud, theft and inefficiencies.”

described above), as well as changes in the magnitude and composition of aggregate demand.

4. Financing a Universal Grant in South Africa

In response to the debate surrounding the macroeconomic impact of implementing and financing a BIG, four financing options are investigated in this section. Since the database underlying the CGE model is for 1998, the BIG is modeled as an R85 per month transfer to individuals in 1998 prices, as this is equivalent to a R100 per month transfer to individuals in 2001 prices.⁷ Furthermore, since the model contains household income deciles rather than individuals, it was necessary to multiply the grant given to each household by the number of people in each household income decile (thereby accounting for the typically larger size of poorer households), and then transfer this aggregate grant to the 14 representative household income classes. The information on population by household income decile was obtained from Leibbrandt *et al* (2000).⁸

According to the SAM, the government deficit stood at 3.3 percent of GDP in 1998. In these simulations it is assumed that the government is unable to adjust its deficit in order to finance the BIG (which amounts to R41.3 billion in 1998 prices or 5.3 percent of GDP). The impacts of this universal transfer are discussed below for each of the financing options.

Financing through Increased Indirect Commodity Taxes

Samson *et al* (2002) suggest that the BIG can be financed through changes in the tax system, thus making the need to resort to deficit spending unnecessary. In response to this claim, the first simulation finances the BIG solely through an increase in sales taxes on commodities (which include all indirect taxes excluding import duties). The initial sales

⁷ This calculation was based on changes in the consumer price index as reported by the South African Reserve Bank (SARB, 2002).

⁸ The population breakdown in Leibbrandt *et al* (2000) did not disaggregate the highest income decile into the five categories included in this model.

tax rates weighted by each household's consumption basket can be found in the first column of Table 1. These results show that the current tax system is indeed regressive, with the lowest income decile paying a weighted tax rate of 8.5 percent on their total consumption spending, as opposed to only 5.9 percent for the highest income category.⁹

The impact of raising sales tax rates to finance the BIG is to drive up consumer prices by 7.6 percent (as shown in the second column of Table 2). This negative impact on real household consumption spending is partially offset by the universal transfer from government to households such that aggregate real consumption expenditure rises by 0.2 percent. However, low-income households benefit more from the transfer since they comprise a larger proportion of the population receiving the BIG, and as such, there is a compositional shift in income away from high-income households towards low-income households.

⁹ These tax rates differ from the book rate of 14 percent since they are based on collections and include 'zero-rated' goods, excise duties and 'sin' taxes.

Table 1: Changes in Sales Tax Rates

Household income deciles	Initial tax rate (Percentage of weighted consumption spending)	Percentage point deviation from initial rate under each financing option		Percentage share of additional tax burden borne by income deciles
		Sales taxes	‘Balanced’ package	
0 – 10	8.5	4.8	1.7	1.9
10 – 20	8.3	4.6	1.6	2.5
20 – 30	7.9	4.4	1.6	3.3
30 – 40	7.6	4.3	1.5	4.1
40 – 50	7.3	4.1	1.4	5.0
50 – 60	7.0	3.9	1.4	6.2
60 – 70	6.8	3.8	1.4	8.5
70 – 80	6.8	3.8	1.3	11.8
80 – 90	6.7	3.8	1.3	17.5
90 – 95	6.4	3.6	1.3	12.8
95 – 97.25	6.4	3.6	1.3	4.4
97.25 – 98.5	6.3	3.5	1.2	5.1
98.5 – 99.25	6.2	3.5	1.2	5.7
99.25 – 100	5.9	3.3	1.2	11.2
All households	6.7	3.8	1.3	100.0

Source: Author’s calculations using data from Thurlow and van Seventer (2002)

Since low-income households have lower savings rates, the shift in income towards these households reduces the overall level of real savings in the economy.¹⁰ This forces a decline in real investment spending by 5.9 percent. Therefore there is an aggregate shift away from investment and towards consumption spending, and since the latter is less import-intensive, this reduces the level of import demand. Furthermore, since investment spending is more intensive in its use of skilled labor and capital, there is a decline in the demand for these factor categories as reflected by their falling factor returns. Since high-income households receive a larger share of their income from these two factors, this further reduces the income of high-income households relative to low-income households.

The overall impact of the grant is a fall in real factor returns and employment, and a slight reduction in real GDP by 0.8 percent. As domestic production falls there is a decline in exports, and, despite the falling level of imports, the real exchange rate is forced to depreciate by 0.5 percent in order to partially alleviate the fall in exports and

¹⁰ See Thurlow and van Seventer (2002) for a detailed discussion of the different income and expenditure patterns of the various representative households within the model.

further reduce imports such that the current account balance is maintained in the new equilibrium.

Table 2: The Impact of a Universal Basic Income Grant

	Initial value (R billion – 1998 prices)	Percentage change from initial value under each financing option			
		Sales taxes	Direct taxes	Government expenditure	'Balanced' package
Real GDP (market prices)	774.1	-0.8	0.1	-1.3	-0.6
Consumer price index		7.6	0.0	0.0	2.4
Real exchange rate (LCU per FCU)		0.5	-0.1	-0.1	0.1
Real Absorption					
Real total absorption	765.5	-0.8	0.1	-1.3	-0.6
Private consumption	465.7	0.2	1.1	6.0	2.5
Private investment	123.2	-5.9	-3.5	0.0	-3.1
Government consumption	185.8	0.0	0.0	-20.2	-6.9
Exports	190.2	-1.4	-0.5	2.2	0.2
Imports	-181.6	-1.5	-0.5	2.3	0.2
Factor Employment ^a					
Capital		.	.	.	.
Unskilled labor		-1.4	0.4	-5.8	-2.3
Semi-skilled labor		-2.1	-0.1	-2.8	-1.6
Skilled labor		.	.	.	.
Real Factor Returns ^b					
Capital		-4.6	0.2	-0.1	-1.4
Unskilled labor		.	.	.	.
Semi-skilled labor		.	.	.	.
Skilled labor		-5.7	-0.7	0.5	-1.8
Real Household Consumption Spending by Household Income Decile					
0 – 10	6.8	73.0	78.9	75.8	75.7
10 – 20	9.5	57.6	61.7	59.6	59.5
20 – 30	13.0	32.8	37.4	35.5	35.1
30 – 40	16.8	22.1	25.1	24.8	23.9
40 – 50	21.6	10.6	13.5	14.2	12.7
50 – 60	27.7	5.6	8.1	9.5	7.8
60 – 70	38.5	0.4	2.6	5.0	2.7
70 – 80	54.3	-3.6	-2.1	1.8	-1.2
80 – 90	80.9	-5.5	-5.5	0.6	-3.3
90 – 95	62.7	-6.8	-7.7	-0.4	-4.8
95 – 97.25	21.4	-7.3	-7.0	-0.8	-4.9
97.25 – 98.5	25.3	-7.7	-7.2	-0.5	-5.0
98.5 – 99.25	28.5	-7.8	-8.7	-0.5	-5.5
99.25 – 100	58.7	-8.5	-8.4	-0.2	-5.5
All households	465.7	0.2	1.1	6.0	2.5

Source: Author's calculations

^a Capital and skilled labor are assumed to be fully employed.

^b Unskilled and semi-skilled labor are assumed to face a fixed real wage.

Although real GDP declines, the redistributive effects of the grant on real household consumption remain progressive. As can be seen from the lower half of Table 2, there is a rise in real consumption amongst poorer households and a fall in consumption amongst higher income households. Given their initially low consumption levels, the percentage increase in low-income household consumption is considerable.

According to Duncan (2001), the BIG Coalition claims that an additional two percentage points on the current sales tax *book* rate would be sufficient to finance the BIG. However, the results from this simulation predict that an average increase of closer to four percentage points on the current *collection* rate is more accurate. Furthermore, in the absence of any productivity increases resulting from the BIG, this financing option appears to have a slight negative impact on real GDP. There therefore appears to be a conflict between the poverty-alleviating benefits of the grant, and the negative macroeconomic impact of financing of the grant.

Financing through Increased Personal and Corporate Tax Rates

As mentioned, South Africa's largest trade union is opposed to an increase in sales taxes as a result of its regressive nature, preferring rather to suggest a 'solidarity tax' on high income earners as an alternative means of financing the BIG. The progressive nature of current direct taxes can be seen in the first column of Table 3. Low-income households are subject to substantially lower income tax rates relative to those faced by higher income households. In response to the trade union's suggested financing option, this simulation evaluates the impact of the BIG were it to be financed solely through an increase in direct tax rates on both households and enterprises. The results are presented in the third column of Table 2.

The initial impact of the additional transfer to households is to raise the level of real private consumption. However, in order to maintain the budget deficit, the government is forced to raise the necessary revenue by increasing direct tax rates on domestic institutions. This reduces the level of post-tax disposable income available to households

and therefore partially offsets the increase in real consumption such that it increases by 1.1 percent.

Table 3: Changes in Direct Tax Rates

Household income deciles and enterprises	Initial tax rate (Percentage of income)	Percentage point deviation from initial rate under each financing option		Percentage share of additional tax burden borne by income deciles and enterprises
		Direct taxes	'Balanced' package	
0 – 10	0.1	0.0	0.0	0.0
10 – 20	1.1	0.4	0.1	0.1
20 – 30	2.4	0.8	0.3	0.3
30 – 40	5.3	1.8	0.6	0.9
40 – 50	8.1	2.8	0.9	1.7
50 – 60	9.6	3.3	1.1	2.7
60 – 70	11.3	3.9	1.3	4.5
70 – 80	13.9	4.8	1.6	8.1
80 – 90	17.6	6.1	2.1	15.9
90 – 95	19.3	6.7	2.3	13.9
95 – 97.25	17.7	6.1	2.1	4.3
97.25 – 98.5	16.8	5.8	2.0	4.7
98.5 – 99.25	19.1	6.6	2.2	6.2
99.25 – 100	15.2	5.3	1.8	9.7
Enterprises	9.5	3.3	1.1	27.0
All institutions	12.7	4.4	1.5	100.0

Source: Author's calculations using data from Thurlow and van Seventer (2002)

In order to maintain the progressive structure of direct taxes, the financing of the BIG requires that income tax rates on higher income households increase considerably (as shown in the second column of Table 3). While low-income households bear a small portion of the additional tax burden (shown in the final column), high-income households pay substantially more income tax. Furthermore, a large portion of the additional tax revenue is acquired through higher corporate taxation (which can be seen as a tax on capital income). This negatively impacts on higher income households since they are largely the indirect beneficiaries of returns to capital. Ultimately, in order to finance the grant, the overall average direct tax *rate* would have to increase by a predicted 4.4 percentage points.

Since higher income households have higher marginal propensities to save, the reduction in these households' incomes reduces the level of savings in the economy, and this in turn

decreases investment spending by 3.5 percent. This shift out of investment and towards private consumption leads to an increase in the demand for those commodities that lie disproportionately within low-income households' consumption bundle. This is particularly true for textiles (which is unskilled labor intensive) and food (whose agricultural intermediates are more capital-intensive). This change in the distribution of production leads to an increase in employment for unskilled labor, and an increase in real factor returns for capital. The relative magnitudes of the changes in these sources of household incomes further strengthen the progressive impact of the BIG.

Finally, since investment is more import-intensive than consumption spending, the fall in investment has a negative impact on the level of import demand. This places pressure on the current account balance such that the real exchange rate is forced to appreciate slightly in order to curb the fall in imports and reduce the level of exports. Ultimately the BIG under this financing option has a small positive effect on GDP, which increases by 0.1 percent.

While the above scenario appears to justify the recommendation that direct taxes be used in place of sales taxes as a means of financing the BIG, it may be noted that the current trend within national policy is to reduce income taxes. Thus the raising of direct tax rates by a weighted average of 4.4 percentage points on the current *collection* rates would require a substantial shift in the approach adopted by the National Treasury. Furthermore, further consideration would have to be paid to the additional impacts of increased tax rates on financial and human capital flight, and on the incidence of tax avoidance.

Financing through Decreased Government Consumption Spending

A further financing option might involve a compositional shift in government spending away from consumption expenditure on goods and services and towards increased transfers to households. According to the SAM, government consumption spending in 1998 was 24 percent of GDP and nine times greater than transfer spending. This scenario therefore maintains the budget deficit at its original level by substituting additional

transfers for consumption expenditure. The results can be found in the fourth column of Table 2.

As in the previous simulations, the initial impact of the grant is to raise private consumption demand. However, unlike the other financing options, this increase in private demand is not partially offset by a reduction in private consumption through increased taxation. Rather, the government finances the BIG by reducing its level of consumption expenditure by 20 percent. Real private consumption increases by a total of 6 percent, thus raising domestic production and exports. The current account constraint forces a slight appreciation of the real exchange rate so as to maintain the trade balance in the new equilibrium.

The negative impact of the grant on the real consumption levels of high income households is less than under the other financing options. This is due to the government, rather than high-income households, carrying the burden of financing the BIG. There is also a dampening of the redistribution effect on lower income households' real consumption, since government consumption spending, which has now been reduced, is one of the largest employers of unskilled and semi-skilled labor.¹¹ This is shown in Table 2 by the substantial fall in employment amongst unskilled and semi-skilled labor.

Ultimately, there is a decline in real GDP by 1.3 percent, which is largely driven by a drop in employment amongst unskilled and semi-skilled labor (see Table 2). However, despite this financing option's negative impact on real GDP, it does have a progressive impact on total real household consumption.

It should be noted that the above simulation reduced government spending proportionately across all commodities, and therefore did not target a particular area of the budget. This is an important simplification, since, for example, the increased pressure on government health spending for HIV/AIDS treatment makes an across-the-board

¹¹ See Thurlow and van Seventer (2002) for a more detailed description of the impact of fiscal expenditure on the South African economy.

reduction in government spending implausible. Alternative specifications could allow for a reduction in specific components of government expenditure, for example military spending, while maintaining other components such as education and health. While this simulation did not attempt to reprioritize government spending, the targeting of particular commodities would be a more realistic scenario if this financing option were to be implemented.

A Financing Package

The results from the three financing simulations outlined above seem to indicate that, if used in isolation, each of the financing options place significant pressure on the various institutions within the economy. In the case of the two tax-financed scenarios, sales or income tax rates increase considerably, and a compositional shift in government spending towards the BIG requires a substantial decline in current government consumption spending. Since these individual policy recommendations are likely to be economically and/or politically infeasible, the following simulation investigates the macroeconomic impact of a ‘balanced’ approach to financing the BIG. The impact of the grant is spread evenly over sales and income taxes, and government consumption spending. The results are shown in the final column of Table 2.

By removing the dependence on increased sales taxes (as shown in the second column of Table 1), private consumption demand is not ultimately reduced by a rise in the consumer price index (which increases by only 2.4 percent in this scenario). The forced increase in the direct tax rates on households and enterprises is also lessened (as shown in Table 3). Although there is no change in the distribution of the burden of the additional direct taxes, the distributional impact on real household consumption for higher income households is now lessened. This is due to the partial financing of the grant through a reduction in government consumption spending, which doesn’t offset private consumption spending by as much as the other financing options. There is a drop in employment amongst unskilled and semi-skilled labor, due largely to the fall in

government consumption expenditure. However, the overall negative effect of this rising unemployment on real GDP is lessened through direct tax financing.

Additional simulations (not presented in this paper) show that, under the balanced financing scenario, the productivity of unskilled labor would have to increase by approximately 11 percent in order to maintain the level of employment in this factor category and neutralize the negative impact of the grant on real GDP. Whether such a productivity increase is possible can only be adequately determined by a micro-level assessment of the grant.¹²

Although the scale of the grant remains unchanged in this simulation, the burden of the ‘balanced’ financing option is spread over domestic institutions. Sales and direct tax rates increase by 1.3 and 1.5 percentage points respectively as opposed to roughly 4 percentage points. Finally, government consumption expenditure is reduced by 7 percent rather than 20 percent.

The results of the ‘balanced’ financing option appear to be more politically and economically feasible than those of the previous simulations (where only a single policy instrument was adjusted to finance the BIG). However, the results from the balanced scenario still suggest that implementing the universal grant is likely to have a significant and negative impact on various areas of the South African macroeconomy. Perhaps the most notable of those areas negatively affected are the levels of employment amongst unskilled and semi-skilled workers. This rising unemployment suggests that the BIG might lead to greater welfare-dependency amongst the country’s unemployed. These conflicting policy objectives, as well as the scale of the macroeconomic adjustment required to implement and finance the grant, might undermine the benefits of a universal as opposed to a targeted grant.¹³

¹² For a more detailed discussion of the macroeconomic impact of productivity changes on South African economic activity see Thurlow and van Seventer (2002).

¹³ For a review of the benefits of basic income grants, see Atkinson (1995).

However, despite the differing macroeconomic impacts of the various financing options, the redistributive impact of the BIG remains consistently progressive across all of the above simulations. These results therefore suggest that, should a universal grant be favored over a targeted one, then the current debate should redirect its attention to finding the correct balance of policy measures to finance the BIG in a manner that does not cause macroeconomic problems. This would be preferable to the current approach that focuses almost exclusively on the microeconomic impacts of the universal grant and the advocating of a single financing option. Such a shift would reduce the contention between proponents of the BIG, and would lead to more relevant areas in the debate.

Conclusion

Contention has arisen during the period leading up to the release of the Taylor Report, regarding the possible implementation of a basic income grant in South Africa. While much of the current debate has centered around research on the microeconomic benefits of a universal grant, this study has attempted to address the macroeconomic issue of whether such a grant is viable in terms of the demands it places on the South African macroeconomy and on the government's budget. This has been done by considering the macroeconomic impact of the BIG under a variety of financing scenarios.

The scale of the BIG requires that the government either raise revenue or reduce current expenditure in order to implement the grant. To this end, the study simulated the impact of the BIG under an increase in sales and income tax rates, as well as a reduction in government consumption spending. These results suggest that the current financing recommendations of the Taylor Report and the BIG Coalition have underestimated the required increases in sales and income tax rates. Furthermore, the required reduction in government consumption expenditure to finance the grant is likely to undermine other government programs. Given that these results may be political infeasible, the study considered a 'balanced' package of financing options. Despite spreading the burden of financing the grant across the various institutions within the economy, this financing scenario still resulted in the strongly progressive redistribution of real household

consumption that is characteristic of this universal grant, albeit at the cost of lower real GDP.

Given the significant and often negative macroeconomic impact of implementing a universal grant in South Africa, further attention should be paid to clearly identifying the benefits of a universal over a targeted grant. A targeted program would substantially reduce the fiscal burden of the government's poverty-alleviation strategy.

However, as already stated, this study is not directed at assessing the microeconomic benefits of universal as opposed to targeted grants. If it is shown that a universal grant is better at addressing poverty in South Africa, then the current debate surrounding the BIG would be greatly enhanced by a more rigorous consideration of its macroeconomic impact, and by a shift in focus away from determining which individual financing option should be implemented, towards an acknowledgement that a 'balanced' approach is likely to provide the only possible financing scenario. For example, the Taylor Report's suggestion, that economic growth would be facilitated through an increase in aggregate demand, does not appear to take into account other potentially negative macroeconomic impacts of the chosen financing option. Furthermore, in the absence of such macroeconomic considerations, the recommended increase in only taxes to finance the BIG is likely to be either economically or politically infeasible.

Model results indicate that, under the balanced approach to financing the BIG, an 11 percent increase in unskilled labor productivity would be required to outweigh the negative impact of the grant on real GDP. Although this provides a provisional estimate, further and more detailed research is needed to determine whether the productivity gains predicted by the Taylor Report are likely to materialize, and whether these gains will be sufficiently large to overcome the negative impact of the grant on economic growth. Such research would greatly inform the more critical debate as to whether a BIG is preferable to alternative approaches aimed at addressing poverty and inequality. However, while this study is unable to determine the microeconomic advantages of targeted as opposed to

universal grants, the above results do suggest that the income distributional effects of the latter are progressive.

In the context of pervasive absolute poverty and inequality, the consideration of poverty alleviation measures is of critical importance. According to Tilton (quoted in Terreblanche, 2001), “[the BIG] would enhance the provisions of the [new South African] constitution by not only giving people the right to life but also the means to live.” However, the successful addressing of poverty in South Africa depends on the ability of policy-makers to construct sustainable and appropriately targeted interventions, which in turn are able to elicit consensus in a country typified by conflicting political and social objectives. Unfortunately, while the BIG appears to overcome the problem of identifying the poor, the decision of whether South Africa can become Africa’s first welfare state might not necessarily be determined by a universal grant’s ability to alleviate poverty, but rather by macroeconomic and financial considerations.

References

Andrew, K. (2001) ‘Basic Income Grant: Not If But When.’ Working paper prepared for the Democratic Alliance (www.da.org.za).

Atkinson, A. (1995) *Public Economics in Action: The Basic Income/Flat Tax Proposal*. New York: Oxford University Press.

Camerer, L. (1997) ‘Poverty and Corruption in South Africa: Government Corruption in Poverty Alleviation Programs.’ Part of the World Bank/UNDP study on poverty and inequality in South Africa. Halfway House: Pretoria.

Congress of South African Trade Unions (2002) ‘Coalition Endorses Revolutionary Report’s BIG Anti-Poverty Plan.’ Press statement issued by the Congress of South African Trade Unions (16-May-2002).

Department of Social Development (1997) 'Principles, Guidelines, Recommendations, Proposed Policies and Programmes for Developmental Social Welfare in South Africa.' White paper for social welfare prepared by the Department of Welfare (now Department of Social Development). Pretoria, South Africa.

Dervis, K., de Melo, J. and Robinson, S. (1982) *General Equilibrium Models for Development Policy*. New York: Cambridge University Press.

Duncan, S. (2001) 'Life Line for the Poor.' *Land and Rural Digest*, November/December.

Forrest, D. and Kindra, J. (2002) 'Small Chance of BIF Now.' Article in the Mail and Guardian Newspaper (03 May 2002).

Jeter, J. (2002) 'South Africa Weighs a Welfare State.' Lead article in the Washington Post (08 July 2002).

Leibbrandt, M; Woolard, I and Borat H. (2000) 'Understanding Contemporary Household Inequality in South Africa.' *Studies in Economics and Econometrics*, Vol. 24, No. 3.

Lofgren, H., Harris, R.L. and Robinson, S. with the assistance of Marcelle Thomas and Moataz El-Said (2001) 'A Standard Computable General Equilibrium (CGE) Model in GAMS'. Discussion Paper no. 75, Trade and Macroeconomics Division, International Food Policy Research Institute.

May, J. (ed.) (1998) 'Poverty and Inequality in South Africa.' Report prepared for the Office of the Executive Deputy President and the Interministerial Committee for Poverty and Inequality. Durban, South Africa.

Mgijima, C. (1999) 'International Consultative Conference on Food Security and Nutrition as Human Rights.' South African Human Rights Commission.

Ngwane, A., Yadavalli, V. and Steffens, F. (2001) 'Poverty in South Africa – a Statistical Analysis.' *Development Southern Africa*, Vol. 18, No. 2.

Samson, M., Babson, O., Haarman, C. Haarman, D., Khathi, G., Mac Quene, K. and van Niekerk, I. (2002) 'Research Review on Social Security and the Basic Income Grant for South Africa.' Report for the International Labor Organization compiled by the Economic Policy Research Institute, Cape Town, South Africa.

South African Reserve Bank (2002). *Quartley Bulletin of Statistics*.

Taylor, V. (ed.) (2002) 'Transforming the Present – Protecting the Future.' Report prepared for the Department of Social Development by the Committee of Inquiry into a Comprehensive System of Social Security for South Africa. Pretoria, South Africa.

Teggeman, S. (2001) 'Corruption, Poverty and Inequality.' World Bank online document. (www1.worldbank.org/publicsector/anticorrupt/corpov.htm)

Terreblanche, C. (2001) 'Time for South Africa's Wealthy to Share their Income.' News article in Independent Online (03-07-2001).

Thurlow, J. and van Seventer, D. 'A Standard Computable General Equilibrium Model for South Africa.' Discussion Paper No. 100, Trade and Macroeconomics, International Food Policy Research Institute, Washington D.C., and Trade and Industrial Policy Strategies (TIPS) Working Paper, Johannesburg, South Africa.

United Nations Development Programme (1999) *Human Development Report 1999*. Oxford University Press: New York.

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