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A Universal Income Grant Scheme for South Africa: An Empirical Assessment

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1. Introduction

The post-apartheid period has made it amply clear that perhaps one of the key challenges facing the ruling party is that of a consistent and coherent strategy designed to significantly reduce poverty levels in the society. Hence, social welfare and poverty eradication interventions are prominent in the policy agenda of the majority government. These challenges have proven all the more acute given that the high incidence of poverty overlaps considerably with the extreme levels of unemployment in the domestic economy. This essentially means that the domestic economy is not (and indeed has not been) functioning effectively as a creator of jobs. The outcome of the latter is that government cannot rely on the growth process alone to reduce national poverty levels. This fact has led to the growing importance of the state as a provider, in some form, to alleviate the potential consequences of high levels of poverty and indigence. At the centre of such an intervention lies the social security system.

Given the above, it has been argued that social transfers from the state to the populace must be viewed as a key ingredient in any national poverty alleviation strategy. The purpose of this document, in the first instance then, is to provide an overview of the existing social security arrangements within the country. This should serve as a point of departure for understanding both the poverty-reduction opportunities presented by such interventions, as well as the macroeconomic constraints within which such interventions occur. As an extension, the second core focus of the paper will be to assess the notion of a universal income grant scheme. The latter speaks to an important public policy debate that has been ongoing within the country, about the notion of an income grant scheme. We will attempt, in this paper, to try and contribute to this debate through the presentation of empirical evidence on the possible consequences of instituting such a transfer scheme.

2. Current state provision for social security

Government is of course operating under the broad ambit of the Growth Employment and Redistribution (GEAR) strategy, which, amongst other objectives, has as one of its central aims the reduction of the fiscal deficit to GDP ratio. In pure budgetary terms, this has been the key guiding principle in all of the expenditure outlays that have been made over the last few years, and indeed that are likely to be made, over the medium-term. What this means is that any thinking around further provisions for poverty alleviation or job creation, has to begin by the realization that government, through the Treasury Department, views fiscal restraint as vital to any of its annual expenditure outlays for the different government departments.

Keeping this in mind, it is useful though to examine the current and projected expenditure by the state on social services provision, as indicative of the state's general provisions for immediate or long run interventions designed to reduce poverty or engender employment. Hence, Table 1 below illustrates these expenditure values for the different categories of social services. It is evident; firstly, that expenditure on social services currently captures about 45% of government's total expenditure. The future estimates, according to the Medium Term Expenditure Framework (MTEF), makes is clear that this share of social services will decline, albeit marginally, from the present 44.7 per cent to about 43.3 per cent in the 2002/3 financial year.

Table 1. Expenditure by budget item, as % of total Government expenditure

Budget Item	1999/00	2000/01	2001/02	2002/03
Education	21.3	20.8	20.5	20.3
Health	13.3	13.3	13.1	13.0
Social security and welfare	8.8	8.6	8.3	8.0
Housing	2.0	1.7	1.7	1.7
Other social services	0.4	0.3	0.3	0.3
Total social services	45.7	44.7	43.9	43.3

Interest burden	19.8	19.1	18.9	18.3
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What is important to note however is that within this high share of social service expenditure, the overwhelming proportion is allocated to education. Indeed, expenditure on education across all the projections above, accounts for very close to half of total social service spending. Debates in the budget have in fact revolved around the fact that, as a percentage of both GDP and total fiscal expenditure, South Africa remains one of the highest spenders on education in the world. Within the social services budget, this is followed by health, which captures about 13 per cent of total fiscal outlays in 2000. It should be evident that the share of health, and indeed the other social services components, is unlikely to change over the next three fiscal years. What this means is that via the MTEF, government already has a pretty firm grasp of size and nature of its fiscal interventions. In this regard then, the share of spending on social welfare stands at about 8 per cent of all state expenditure. This will remain the same over the next year, with the share in fact declining marginally from 8.8 per cent to 8.0 per cent in the fiscal year 2002/3.

Ultimately, the Treasury has carved out its budgetary plans over the medium-term. This is in pure national accounting terms a good development, as it allows for greater certainty and stability in government's financial planning system. The drawback, of course, of such a plan is that it leaves little room for changing the allocations of specific budget votes in a significant manner. Hence, it should be evident that within the above expenditure shares and mid-term scenarios, there is unlikely to be a dramatic increase in the share of expenditure going to social security and welfare. Most government departments are in fact competing for funds from the fiscus, and neither would be prepared to offer additional funds to any other department at the expense of their own. Apart from many departments chasing limited resources from Treasury, there is the crucial issue of the interest burden. Unlike other line items in the budget, the interest burden and repayment is not negotiable. As should be clear from the table above, at between 18 and 19 per cent of total expenditure, it represents a very high proportion of the state's expenditure in every budget year. The interest repayment value is in fact the

second largest item on the budget after education and this ranking is likely to remain the same for at least the next five years.

The interest burden represents the years of poor fiscal management by apartheid authorities. This resulted in huge debts being built up with both foreign and domestic lenders. As the new government tries to reduce its indebtedness, lowering the value of the interest burden is crucial. Not only does it send a positive signal to foreign investors, concerning South Africa's prudent fiscal management, but it also makes simple business-sense to lower one's debt levels, before spending more.

The upshot from the above is that, firstly, government spends a large amount of annual outlays on social service provision. Second, while social welfare is an important component of this spending, it remains well below the expenditure on education and health. Third, government's priorities over the next three to four years have been carefully laid out in the MTEF, and this is unlikely to be altered in any dramatic manner. Finally, there needs to be an appreciation that the state is functioning under a severely high debt burden, and it is crucial that such a burden is systematically reduced, before any significant absolute increases in social service expenditure can occur.

2.1 State grant schemes as poverty alleviation expenditure

Within the social welfare budget provided above, there are of course a series of different allocations made by the Department of Welfare (DoW) to various forms of social assistance. Table 2 provides this breakdown according to the number of beneficiaries, the amount allocated and the share of this total allocation that each transfer captures. Of the nine transfers that the DoW makes provision for, it is evident that the old age pension is far and away the largest. This transfer reaches close to two million individuals as well as accounting for 63 per cent of

the Department's total transfer expenditure. The value of the grant however is not the highest, which at R549 per month per pensioner, is below that of the war veteran's pension and the disability grant.

Table 2. Detailed division of welfare transfer schemes, 1999/2000

Transfer type	No. of beneficiaries	Spent Rm	% of Total
Old age	1 858 521	549	63.21
War vets	7 852	778	0.38
Disability	611 882	685	25.98
Maintenance	192 930	475	5.68
Foster care	48 934	548	1.66
Care dependency	22 823	356	0.50
Child support grant	158 305	264	2.59

The second most important transfer scheme is the disability grant. This grant reaches about 630,000 individuals, and accounts for about 26 per cent of the DoW's transfer expenditure. Hence, very close to 90 per cent of the transfer expenditure in South Africa is accounted for by two schemes - the old age pension and the disability grant. It should be evident then that while we have a well-developed and extensive scheme for two of the target groups in the society, for a significant number of indigent and needy communities the scheme is not adequate. A positive development however, has been the increased importance of the maintenance grant and the new child support grant. The latter however, is set at an extremely low level of R264 per month.

As stated above, the importance of these figures is that they suggest that while the distribution of benefits is uneven, any attempt to increase (for example) CSG would inevitably mean that the value of another transfer scheme is reduced. Within a total budget that will in all probability not change significantly, there would seem to be little room for manoeuvrability. That said, it is important to remember of course that better management of funds accruing to the DoW can mean that the effective transfer to recipients may increase in value and number.

The data above then has firstly indicated that the MTEF guides, and will continue to guide, the expenditure allocations made on social security generally and social welfare more specifically. The combined goal of maintaining fiscal prudence with reducing the interest burden appears to be the anchor around medium-term fiscal policy in the country. Within the context of a universal

income grant proposition then, it would appear that an approach from the DoW, which captures it as another addition to its current programmes, is likely to fail. The universal income grant scheme, with the DoW championing it, would thus require a far greater level of cross-departmental support and ultimately wider political support - were it to have a probability of being tabled as a formal proposal at the highest political level. In a sense then, the above empirics have sought to illustrate that the simple budgeting framework cannot be the machinery that is utilized to forward a proposal for a universal income grant scheme. We proceed in the following sections of the paper to try and generate a flow of empirical information that would try and, at a minimum, inform this debate around the viability and effectiveness of a national income grant scheme.

2.2 Transfers to individuals for household poverty reduction

What the above figures hide is that while such transfers in the first instance, are allocated to individuals - for example the aged or disabled - the ultimate impact of the grant must be understood at the household level. Put differently, these income grants are important as a social safety for households, rather than individuals, living in poverty. As such then, these schemes are implicitly part of the society's household social safety net. This is made clear when one looks for example at the role of the old age pension in supporting the unemployed, through the access this grant provides to the jobless, within the household.

The table below therefore presents the number of unemployed in households according to all non-employment income (which would cover all of the grants listed in the above table) and, as a second category, old age pensions and disability grants.

Table 3. Share of unemployed in households, by number of non-employment income recipients

Grant Type	All Transfers				Old age pension and disability grant			
	0	1	2+	Total	0	1	2+	Total
All	63.4	28.6	8	100	67.9	25.1	7	100
African	62.9	29.1	8	100	66.6	26.4	7	100
Coloured	67.5	24.1	8.4	100	74.2	19.1	6.7	100
Asian	78.7	15.5	5.8	100	84.5	9.8	5.7	100
White	62.7	29	8.3	100	92.2	4.6	3.2	100
Rural	59.1	32.1	8.8	100	62.8	29.3	7.9	100
Urban	68.7	23.8	7.5	100	72	21	7	100
Metro	68.5	24.9	6.6	100	75.9	19.3	4.8	100
Old SA	70	22.3	7.7	100	75.9	17.7	6.4	100
Bantustans	58.3	33.5	8.2	100	61.8	30.8	7.4	100

Source: Borat and Leibbrandt, 1996.

It is clear from the table that 63.4 per cent of the unemployed live in homes where there is no individual recipient of an income transfer. This implies that 36.6 per cent of the unemployed have access to at least one recipient of an income transfer. The figures for the African unemployed reveal the same patterns.

For the unemployed living in rural areas the figures are slightly altered, revealing that 41 per cent of the unemployed are in homes with at least one income transfer recipient. It is clear that in rural areas the dependence on transfer income is greater. While a significant proportion of the unemployed live in homes with no income transfer recipient, it is important to note that the social safety net, as represented by old age pensions and disability grants, does perform a welfare function for some of the unemployed. In this sense there is an indirect welfare effect in the social safety net. Income transfers are not only supporting their direct recipients, but also the unemployed dependants of the recipient.

A number of the unemployed are benefiting from the existent social safety net. However, we also need to ascertain whether this, in itself, is poverty alleviating and enhances living standards. While the relevant data is not presented in detail here, the results show that for these households with unemployed

individuals in them, the transfer is not sufficient to place them above the poverty line. For example, among the African unemployed with access to old age pensions or disability grants, 80 per cent live below the poverty line. The regional dimension is again a telling one: amongst the rural unemployed, with access to two or more grants, 84 per cent live below the poverty line. Ultimately then, the data makes it clear that while some of the unemployed have access to income transfers of a fellow household member, this is not sufficient to raise the unemployed above the poverty line.

Ultimately then, we are left with two key deductions from the above data. Firstly, that the transfers currently provided by the state are assisting not only the direct recipients, but also those individuals who live in the household with them. The starkest example of this is the old age pension and other grants, supporting a significant number of unemployed workers. Second, it is evident that these transfers on their own are wholly insufficient to act as significant lever for reducing household poverty levels. Emanating from the latter has been the notion that government needs to consider a national basic income grant scheme. Such a scheme would not only widen the current social welfare provision of the state, but would target the unemployed - a cohort in the society that are not only uncovered by direct assistance, but also arguably the most vulnerable in the society. It needs to be remembered, following the discussion above concerning the MTEF and budgetary outlays, that this notion of a basic income grant (BIG) has to be a long-term plan and one that if considered, will more than likely be part of the state's long-term social welfare strategy. The notion of a BIG is taken up in more detail below.

3. Estimates of a basic income grant¹

An extremely useful methodological starting point for the analysis of a universal income grant is to try and determine, theoretically, what it would cost

¹ This section is based heavily on Borat (2000).

the state to eradicate household poverty in the society. The section is deliberately general and somewhat grandiose, as its focus is to deliver baseline estimates of what the potential once-off costs of different income transfer schemes could be. Different permutations of such a hypothetical income transfer scheme are considered, through utilising an established methodology drawn from the literature on household poverty analysis. These involve the public expenditure commitment necessary to generate zero poverty in the society - with consideration given to the different household and individual categories in the economy. In addition, an attempt is made to provide some sensitivity analysis, where intermediate expenditure outlays are correlated with reduced (but non-zero) poverty levels. This analysis will in turn provide a comparison and assessment of two alternative types of income grant schemes, namely the additive versus the multiplicative grant.

3.1 Approach and methodology

The most useful measure for simulating the effects on poverty of various policy interventions is the poverty gap measure. The poverty gap measure is derived from the general class of poverty measures developed by Foster, Greer and Thorbecke (1984). The FGT index of poverty measures, can be represented in general form as:

$$P_a = \frac{1}{n} \sum_{i=1}^n \left(\frac{z - y_i}{z} \right)^a | (y_i \leq z) \quad (1)$$

where n is the total sample size, z is the chosen poverty line, and y_i is the standard of living indicator of agent i . The parameter α measures how sensitive the index is to transfers between the poor units. Note that the index is conditional on the agent's income, y_i , being below the designated poverty line, z . The poverty

gap measure (PG) is generated when $\alpha=1$, and therefore for a given poverty line z^2 is presented as:

$$P_1 = \frac{1}{n} \sum_{i=1}^n \left(\frac{z - y_i}{z} \right) \Big| (y_i \leq z) \quad (2)$$

As is clear, the PG represents a direct measure of agents' incomes relative to the poverty line. It is a money metric of poverty in the group under scrutiny. A first advantage of the FGT index is its additive decomposability, which allows for sub-group poverty measures to be summed forming a society-wide measure without any loss of generality. More importantly here, the PG measure in being linked to money values, can be utilized to run simulations on the poverty impacts of income transfers to the poor – for any given reference group in the society. Remembering that P_1 is a measure not simply of how many poor agents there are, but also of how poor the poor are, we do arrive at a fairly nuanced analysis of the welfare outcomes of poverty alleviation strategies.

Utilizing the poverty gap measure then, it is possible to calculate the minimum financial cost of poverty alleviation. This is done by assuming that the poverty outcome in each sub-group is for P_1 to be zero. Put differently, it means that the income to each agent in the sub-group or society (y_i), would at least be equal to the value of the poverty line (z). This value can be determined from the equation (2) by calculating $\sum_{i=1}^n (z - y_i) \Big| (y_i \leq z)$. In other words, we sum the value of the resources required to place each agent in the society just above the poverty line.

² If we assume an infinite number of poverty lines, we can then trace what is known as the Poverty Deficit Curve, which is represented as $P_1 = \int_0^z \left(\frac{z-y}{z} \right)^a f(y) dy$. This is the area under the Poverty Incidence Curve, which is associated with the headcount index.

A reformulation of this, and one that is easier for calculation purposes is nzP_1 , which is derived directly from equation (2) above. Using the latter as a basis, we can therefore present the minimum financial cost of alleviating poverty as measured by P_1 , to the sub-group or society by the value associated with nzP_1 (Kanbur, 1987, p.71). This figure represents the minimum commitment required of the state in that it assumes perfect targeting, with zero administrative and other costs generally associated with welfare transfer schemes. It is also assumed that the scheme would elicit no behavioural responses from any potential recipients. These responses are particularly important when individuals' returns to labour supply fall within the range of the transfer value. While these assumptions are of course extreme, and are discussed in greater detail below, the value of nzP_1 does provide a very useful first step in trying to gauge the importance and magnitude of the problem facing the society or the public sector.

The value of nzP_1 can be extended to include sub-divisions of the total sample. Hence, what can be determined is a matrix of the minimum financial commitment required to eradicate poverty amongst different groups at the household and individual level in the society. It is also useful to determine the poverty impact when committing to expenditure less than the value of nzP_1 . In this way, we engage in sensitivity analysis that provide results, which correlate intermediate expenditure changes to intermediate alterations in the poverty gap. It has to be remembered that these results would also not explicitly take account of the administrative and other set-up costs associated with an income grant programme. Following from Kanbur (1987), it is possible to deal with this sensitivity analysis through a methodology that allocates specific income grants to agents. There are two alternative ways of operationalizing such a fiscal intervention. One would be an additive income grant and the other a multiplicative grant. An additive income transfer would be an absolute transfer independent of the income earned by the recipient. For example, one could think of a R50 increase to old age pensioners or single unemployed mothers, as an additive income transfer with imperfect targeting. A multiplicative transfer would be set as a fraction or percentage of the recipients given income, and hence the absolute amount received would differ across agents. An example here would be to lower average tax rates on all individuals earning in a certain income range.

Simulation of each of these two types of transfers - additive or multiplicative - will impart relevant information concerning the effect on poverty in the society or sub-group.

Examining the additive case first, and assuming that we account for the entire income distribution, an increase in everybody's income in the society of an absolute amount, Δ_i , will mean that equation (1) takes the form:

$$P_a = \int_0^{z-\Delta} \left(\frac{z-y-\Delta}{z} \right)^a f(y) d(y) \quad (3)$$

Hence each agent gets a transfer in each scheme of Δ_i while the total cost of the scheme would be Δ . The calculations performed below will involve the provision of transfers only to poor agents. Given that our measure of poverty utilized here is the poverty gap, or P_1 , it is possible to calculate the value of the marginal impact by:

$$\frac{dP_1}{d\Delta} = -\frac{P_0}{z} = -\frac{H}{z} \quad (4)$$

where P_0 is the measure of the Headcount Index (H) - simply the number or share of agents living below the poverty line. Equation (4) presents the unit change in poverty as measured by P_1 , given a unit change in the transfer value, Δ_i to each agent in the society. Hence, an increase of Δ_i to each agent in the society or sub-group would cause poverty to fall by a specified and calculable value. It is possible to see that the amount, by which poverty will decline, is in fact proportional to the headcount index, P_0 . An increase of Δ_i would thus cause a parallel downward shift in the poverty deficit curve associated with the measure P_1 . In other words, the change in poverty can be measured here in relation to the poverty line, z , and the headcount index P_0 . The headcount index is therefore an

important indicator of the impact of public spending on poverty, despite not serving as the direct measure of poverty in the methodology.

The second simulation case is to assume that the expenditure is multiplicative in nature. Following from the above the corresponding equations that present the distribution function associated with the multiplicative expenditure, Δ , and its impact on measured poverty respectively are:

$$P_a = \int_0^{z/(1+\Delta)} \left[\frac{z - y(1 + \Delta)}{z} \right]^a f(y) d(y) \quad (5)$$

$$\frac{dP_1}{d\Delta} = -\frac{1}{1 + \Delta} [P_0 - P_1] < 0 \quad (6)$$

Note that the value of the transfer is expressed as a share of the income of each agent. Again, the headcount index (P_0) is a relevant variable in understanding how measured poverty is affected by budgetary allocations. Here, it is the weighted difference between P_0 and P_1 that calculates the degree to which poverty falls after an expenditure that is multiplicative in nature.

3.2 A generic estimate for poverty alleviation

Utilizing the above methodology, it is possible to estimate the once-off costs of eradicating poverty amongst different groups in the society. An important conceptual issue is to deal adequately with the unit of analysis in the different simulations. This relates to the problem of individuals and households in poverty analysis. In the language of the labour market individuals earn or receive income, but from a strict poverty perspective it is households that should be examined when trying to understand income in relation to poverty - something alluded to but not adequately dealt with above. The analysis here will be diligent in trying to ensure that both individual and household level impacts of poverty alleviating expenditure are adequately dealt with. This is particularly important, as each approach offers separate conceptual advantages.

3.4 Expenditure for zero poverty

It was noted that the minimum expenditure required to yield zero poverty in the society is represented by nzP_l . The tables below provide these estimates for different sub-groups in the society. A few things need to be noted about the tables. First, the analysis is based on the October Household Survey of 1995 (OHS95), which sampled about 30,000 households, drawn from 10 selected households in each of 3,000 clusters. For the household-specific data, the accompanying Income and Expenditure Survey (IES) was also utilized, and income rather than expenditure data manipulated to estimate household earnings. Second, for all the calculations that follow, the household poverty line chosen was R903 per month, a scale based on May et al. (1995). The resultant individual poverty line drawn directly from this measure was R293 per month, based on the assumption, albeit simplistic, of an average of three individuals in a household. Given that the expenditure figures below will be presented as annual commitments, the equivalent household poverty line is R10,836 and the individual annual poverty line, R3,516. Finally, given the date of the survey, the money values presented are in 1995 prices.

Table 4 provides baseline estimates of the minimum financial commitment required to eradicate poverty at the household level, and therefore is based implicitly on the assumption that each household's poverty gap is perfectly predicted. The different sub-groups of households are those characterized by the race of the household head and the location of the household. The total number of dwellings in the society is about 9.5 million, of which about three million are poor households. The national poverty gap measure for this group is about 0.13. As a consequence, the minimum financial commitment necessary to eradicate poverty at the household level in the economy using the 1995 data, is approximately R12.8 billion per annum. The state's total expenditure in 1995, at current prices was about R154.9 billion, and thus the cost of eradicating household poverty in the society constitutes 8.29 per cent of this expenditure.

Table 4. Minimum poverty alleviation expenditure for households³

Sub-Group	No. of households (n)	No. of poor households	Poverty measure (P _i)	Expenditure per annum. (R. billion)	% of total expenditure
Total	9 475 165	3 010 855	0.1251	12.8	8.29
African	6 625 570	2 749 295	0.1180	12.1	7.82
Coloured	783 595	187 707	0.0060	0.6	0.40
Asian	249 906	11 356	0.0001	0.01	0.01
White	1 816 094	62 497	0.0010	0.1	0.07
Urban	5 122 047	831 863	0.0360	3.7	2.39
Semi-urban	177 302	52 081	0.0020	0.2	0.13
Rural	4 175 816	2 126 911	0.0871	8.9	5.77

In terms of the race-household distribution of public expenditure, a disproportionate share is allocated to African households. While African households form about 70 per cent of the total household population, they constitute 95 per cent of poor homes in the society. As a result R12.1 billion of the total expenditure will be allocated to households where the head is African. Coloured households are marginally under-represented amongst poor households relative to their share in the total household population. Coloured dwellings thus form 8.3 per cent of the population, and 4.8 per cent of the poverty eradication expenditure. The commitment from government for these households is less than 1 per cent of total expenditure outlays. No significant financial commitment is required from the fiscus to eradicate poverty amongst Asian and White households. For White households despite the fact that they form close to 20 per cent of all homes in the society, the commitment from the state constitutes less than 1 per cent of the poverty eradication expenditure. The location results reveal

³ The decomposability properties of the FGT measure is particularly useful here, and the P₁ measures

are calculated according to the formula, $P = \frac{\sum_{j=1}^m P_j n_j}{n}$ where the j individuals are summed by the m sub-groups in the sample and then weighted by the total sample, n , to derive the composite P₁ value. It should be noted that using this formula, the value for the minimum financial commitment by m sub-groups would be equal to $n \sum_{j=1}^m \frac{n_j P_j}{n}$. In this table and all that follow, the poverty measure P₁ represents weighted shares of total poverty.

the importance of rural household poverty in South Africa. To eradicate poverty amongst rural households, the state would need to commit a minimum of R8.9 billion per annum, constituting 5.8 per cent of the state's total expenditure in 1995. Notwithstanding the expected predominance of rural household poverty, 30 per cent of fiscal expenditure on poverty alleviation would still need to be allocated to urban households.

The household poverty alleviation figures may be complemented by a description of the magnitude of commitment required from the state, by the different labour market cohorts in the society. In a more general vein, this is an analysis of poverty and public expenditure at the individual rather than the household level. Table 5 below attempts to achieve this division of individual poverty alleviation expenditure, by calculating the value of nzP_l for individuals identified by their labour market status, where z is now R293 per month, and the unemployed are of course zero earners.

The data illustrates for example, that the state would need to spend approximately R15 billion per annum more, to keep all individuals in the labour force out of poverty. This static figure constitutes 9.7 per cent of total government spending in 1995. Note that the individual expenditure value is greater than the household figure above, indicating that the cost to keeping a household out of poverty involves economies of scale not realized when dissecting the sample by individuals only. The racial division for the labour force again shows the dominance of African individuals. While the state would need to spend about R485 million per year on White workers in order to keep them out of poverty, the corresponding figure for Africans is exactly 27 times greater. The racial disparities are also evident in that Africans form 69 per cent of the labour force but 88 per cent of all poor individuals in the labour force, while the corresponding figures for Whites is 17 per cent and 2.2 per cent.

The second set of figures for the labour market concentrate on employed individuals, by race, gender, location, sector and occupation. It is immediately apparent that the required resources from the fiscus decline sharply when only

employed individuals are included. The expenditure required falls by over R14 billion, suggesting that the large numbers of unemployed would capture a substantial portion (93 per cent) of the state's poverty eradication expenditure. Hence, a labour market focused poverty eradication programme would be overwhelmingly targeted at the unemployed. It is tempting then to describe the fault line of poverty in the labour market, as between the employed and the unemployed. However, as the discussion below will illuminate, pockets of poverty do exist amongst specific categories of the employed as well - that may require modification of this strict division.

Expenditure on the employed by race, once again yields over-expenditure on Africans, relative to their share in the population. The financial resources required for the employed according to gender, shows greater spending is required for women than men. Despite the fact that women form only 38 per cent of the workforce, the state needs to spend twice as much on poor employed females compared to males in order to end poverty in this cohort. Female expenditure constituted 0.45 per cent of total government expenditure in 1995

Table 5. Minimum poverty alleviation expenditure for labour market individuals

Sub-Group	No. of individuals (n)	No. of poor individuals (q)	Poverty measure (P _i)	Expenditure per annum (R. bill.)	% of total expenditure
Labour Force					
Total	3 817 522	4 499 617	0.3100	15.1	9.72
African	9 550 773	3 971 141	0.2700	13.1	8.47
Coloured	1 509 564	379 631	0.0300	1.5	0.94
Asian	414 511	49 675	0.0000	0.0	0.00
White	2 342 674	99 170	0.0100	0.5	0.31
Urban	8 528 908	2 100 535	0.1600	7.8	5.02
Semi-Urban	263 791	81 463	0.0200	1.0	0.63
Rural	5 004 374	2 301 880	0.1300	6.3	4.08
Employed					
Total	9 947 208	721 625	0.03	1.0	0.68
African	6 146 540	622 992	0.03	1.0	0.68
Coloured	1 191 020	84 206	0.00	0.0	0.00
Asian	364 780	1 932	0.00	0.0	0.00
White	2 244 868	12 495	0.00	0.0	0.00
Male	6 127 107	269 078	0.01	0.4	0.23
Female	3 820 101	452 547	0.02	0.6	0.45
Urban ⁴	6 546 947	182 856	0.01	0.3	0.23
Semi-urban	189 015	10 036	0.00	0.0	0.00
Rural	3 207 066	528 733	0.02	0.7	0.45
Agriculture	1 266 183	288 918	0.01	0.4	0.23
Mining	463 743	2 085	0.00	0.0	0.00
Manufacturing	1 497 292	21 833	0.00	0.0	0.00
Construction	92 470	0 386	0.00	0.0	0.00
Utilities	472 457	370	0.00	0.0	0.00
Wholesale	1 730 487	68 001	0.00	0.0	0.00
Transport	510 099	4 081	0.00	0.0	0.00
Finance	643 354	2 526	0.00	0.0	0.00
Community	3 271 123	323 425	0.02	0.6	0.37
Manager	570 923	7 201	0.001	0.03	0.02
Professional	351 518	347	0.000	0.0	0.00
Technicians	1 137 083	3 698	0.000	0.0	0.00
Clerks	1 205 348	10 194	0.001	0.03	0.02
Service	1 124 283	30 872	0.001	0.03	0.02
Skilled Agric.	129 267	9 143	0.000	0.0	0.00
Craft	1 211 344	25 556	0.002	0.07	0.05
Machine operators	1 152 070	26 551	0.002	0.07	0.05
Domestic helpers	379 684	22 973	0.001	0.03	0.02
Agric. Lab.	944 531	250 972	0.008	0.27	0.18
Mining Lab.	256 891	8 925	0.001	0.03	0.02
Manuf. Lab.	352 742	12 770	0.000	0.0	0.00
Transport Lab.	38 307	934	0.000	0.0	0.00
Domestic workers	713 035	267 439	0.013	0.45	0.29

⁴ The full sample of employed individuals is not included here as 0.04 per cent of the survey is coded as missing in terms of their reported location.

It is the sector and occupation cohorts though that provide for an interesting analysis of labour market poverty. At the sectoral level, the two poorest sets of individuals are those in Agriculture and Community and Social Services. These two sectors account for 85 per cent of all the poverty amongst employed individuals in the labour market. Community & Social Services has marginally more poor individuals than Agriculture. These two sectors account for close to 90% of all the required expenditure on the employed poor. More specifically, the state would need to spend about R400 million in Agriculture and R600 million in Community and Social Services every year to eradicate poverty in these sectors. This sectoral picture of poverty is mirrored in the poverty results by occupation. The two poorest occupations are Domestic Services and Agricultural Labourers. These two occupations account for 72 per cent of all the employed poor in the labour market. Note that there are more poor individuals that are domestic workers than farm labourers. As a result, the state would need to spend about R450 million per annum in domestic services versus R270 million amongst farm workers, to eliminate poverty amongst in these cohorts. These two occupations would have accounted for 0.47 per cent of the government's total expenditure in 1995.

From the above table then, it can be argued that the majority of public expenditure would be committed to the unemployed. A strict separation in poverty terms between the employed and the unemployed does not, however, exist. This is particularly true in the case of farm workers and domestic workers who represent the core of the working poor in the labour market. These two groups of workers would require a substantial public expenditure commitment aimed at poverty reduction. This suggests that should public expenditure take the form of a labour market intervention, due consideration should be given to the fact that poverty exists not only amongst the unemployed, but also amongst sections of the employed. There would remain though, the real danger of disincentive effects on the labour supply decision of these two cohorts of workers, from this type of government support.

Perhaps a stronger mechanism for displaying this shared poverty amongst the unemployed and a segment of the employed is found in Table 6 below. The table

presents household level data, but these are households categorized according to their labour market status. Hence each labour force individual - in this case domestic workers, farm workers and the unemployed, is linked back to their respective households. The sub-groups therefore, are of households characterized by a labour market status variable. The sample in each category is mutually exclusive. Hence, the households that domestic workers are found in, refers specifically to those dwellings where domestic workers, and no unemployed individuals or farm workers, reside. This is to avoid double counting in our poverty measures, which would bias our poverty gap estimates. In addition, the households wherein combinations of these three labour force types are found, is included under the sub-group termed “Combined”. Note that this category represents a minor share of these selected indigent household types. The data illustrates that while these four household types account for 54 per cent of the total population, they represent 73 per cent of all poor homes in the society. In terms of trying to gain a labour market view of household poverty then, it is evident that these four sub-groups of households are a fairly strong representation of how labour market earnings generate the observed household poverty levels in the society.

Table 6. Minimum poverty alleviation expenditure for selected households

Sub-Group	No. of households (n)	No. of poor households	Poverty measure (P _i)	Expenditure per annum (R. billion)	% of Total expenditure
Total	9 475 165	3 010 855	0.1251	12.8	8.29
Domestics	407 247	185 841	0.008	0.08	0.52
Agriculture worker	662 888	424 002	0.018	1.8	1.16
Unemployed	3 386 180	1 371 302	0.058	5.9	3.82
“Combined”	698 632	230 745	0.014	1.4	0.92

In terms of public expenditure, the state would need to spend over 70 per cent of its total poverty eradication budget on these households. Hence, over two-thirds of fiscal support for the poor would need to be targeted at only four types of dwellings in the society, accounting for 6.4 per cent of the government’s total expenditure. The largest share of the additional annual expenditure would accrue

to households with unemployed individuals (R5.9 billion), followed by farm worker (R1.8 billion), combined worker households (R1.4 billion) and then domestic worker dwellings (R800 million). Ultimately, if one were to use a general targeting rule of capturing the most disadvantaged labour market participants, together with ensuring that their households were the recipients of public support, this sub-group meets the requirement in a powerfully optimal manner.

With regard to farm workers and domestic workers, an interesting switch occurs when moving from the individual level data to household data. In the previous table domestic workers were poorer than farm workers, and hence required greater expenditure than the latter to place them out of poverty. However data on which Table 6 above is based make it clear that farm workers come from poorer households than domestic workers. Not only is the number of farm worker homes in poverty larger than those of domestic workers, but also the intra-group poverty measure, not shown in the table, is also higher for farm workers. The household Headcount measure for domestics is 45.63, while for farm workers it is 63.96. The respective P_1 measures are 0.18 for domestics and 0.25 for farm workers. A possible reason for this outcome is that farm worker households are by their very nature found in rural or semi-urban areas. This location effect is a strong predictor for greater household poverty, given the nature of rural labour markets and the returns provided to labour in these areas. Hence, the data shows that close to 92 per cent of all farm worker homes are in rural areas, while the corresponding figure for domestic workers is 49 per cent. A second reason for this outcome was tested; namely that the probability of multiple earners is greater in domestic worker homes, so increasing the total household income earned. The data illustrates however, that this is an unlikely source of the poverty differential, as the number of earners per household type is fairly equal. Hence farm worker households have on average 1.8 earners while domestic worker homes have about 2 earners each.

Another interesting facet of the individual and household differences, is comparing the unemployed as individuals to the households they live in. Hence,

as individuals because the unemployed by definition earn no income, they are the poorest in the labour force. However, at the household level, the dynamic changes. Hence, while this sample of dwellings clearly outnumbers those of any other poor sub-group, the poverty measures tell a slightly different story. The poverty gap measure for households with the unemployed is lower than that of domestics and farm workers. The household intra-group P_I measure (again not shown in the above table), amongst the unemployed households is 0.16 while the headcount index is 40.50 - compared to 0.18 and 45.63 amongst domestics and amongst farm workers, 0.25 and 63.96. Put differently, while there are more unemployed households living in poverty, so generating the largest share of overall household poverty, the extent of poverty within this sample is lower than amongst domestic or farm worker dwellings. It would appear then that farm workers come from the poorest homes in the society, while the unemployed in fact live in homes that are generally better off than the other two categories.

There are a few lessons in the above empirical experiments for policy prescriptions. First, the data suggests that, despite the very strict assumptions of zero running and fixed costs in the income transfer, the value of the financial commitment asked of the state for both individuals and households is fairly modest. This is supported by comparisons with the relatively large expenditure outlays on other functions of government. Second, the markers of household and individual poverty, such as race, location and occupation, are important determinants of this expenditure. An extension here is that labour market poverty should not simply be expressed as a distinction between the employed and the unemployed, given that pockets of deep poverty do prevail amongst the employed. Third, the choice of generic sub-groups in the form of individuals or households significantly alters the description of poverty, and therefore the magnitude of expenditure allocations. Finally it is evident that should the state opt to target those households with domestic workers, farm workers or the unemployed residing in them, a large proportion of poverty in the society will be captured. As such, a targeting of expenditure in this way involves a creative and effective manner in which to give credence to both the individual and household dimensions of poverty.

The above estimates however suffer from a number of constraints, in relation to the specific income grant proposals that COSATU, the DoW and others have tabled. First, we modelled the cost of reducing poverty to zero in the society, whereas the thinking has been primarily around a universal income grant set at a specific value. Second, the above has tried to identify the most vulnerable household- and individual-types in the society, and sought then to estimate the cost of eradicating poverty amongst these groups. This exercise is extremely illuminating in providing for a poverty gap analysis of the indigent, but does remain at an arm's length to the specific proposals of the BIG, which does try to isolate particular poor groups within the society. Given these limitations, the intention of the following section is to try to run a set of simulations that more closely match the current BIG proposals being tabled.

4. Simulations for a universal income grant

As stated above, the simulations in this section are more closely linked to the specific proposals on a BIG tabled variously by the union movement and the Department of Welfare. We try here to look in a fair degree of detail at the relevant covariates that identify the national sample of households, in the event of a universal income grant. This is followed with more specific estimates of the poverty-reduction effects that may arise with a grant set at different levels. The section concludes with a tentative attempt at costing the grant under different assumptions.

4.1 Preliminary descriptive statistics

Unlike the previous segment of the paper, we utilize the Income and Expenditure Survey for 1999 (IES99) here. The IES99 is a simulated update of the Income and Expenditure Survey of 1995, which surveyed over 29,500 households that were randomly selected. The IES99 is thus based on the most comprehensive coverage of income and expenditure information in South Africa. The IES99 is

simulated in the sense that a data company, Wefa Southern Africa, unofficially updated the 1995 IES on the basis of a number of different criteria including:

- § re-weighting the population to reflect mid-1999 population totals;
- § benchmarking total income earned by households on the 1999 estimate of total income in the national accounts;
- § benchmarking expenditure on Bureau of Market Research estimates of expenditure by product type (from report no. 261, “Household Expenditure in South Africa by Province, Population Group and Product”, 1999).

We can therefore be fairly confident that we have, in the IES99, a robust representation of household data, albeit an update on the raw data collected from the 1995 IES. Given the nature of the data, and the fact that it has remained fairly under-utilized within the South African research community, it may be useful to present a few basic descriptive statistics from the data - particularly as they relate to the simulations that will follow.

Table 7 below therefore firstly presents the weighted sample of households within the data set.⁵ In comparison with the 1991 Census-weighted figures provided in Table 4 above, it is clear that the number of households in the society is larger, at approximately 11.4 million - clearly given that the 1996 Census weights were used. Of course, the more recent weight allows us to be more confident in the income grant simulations generated below. It needs to be remembered, that the race and gender figures refer to the household head. With the race figures, the figures suggest as is well known that 81 per cent of all households in the society are African, followed by 15.1 per cent for White-headed households.

⁵ One of the advantages of this data set is that the 1996 Census weights are used, as opposed to the 1991 weights used in the IES95. This makes the universal income grant simulations here far more relevant, given that updated demographic figures are being used.

Table 7. Selected descriptive statistics of sample

Race/Gender of HH head	African	Coloured	Asian	White	Male	Female	Total
Sample	19 290	3 764	1 040	5 485	20 418	9 161	29 579
Weighted	9 224 276	364 799	118 750	1 726 424	7 680 274	3 753 975	11 434 249
Share	80.67	3.19	1.04	15.1	67.17	32.83	
HH size (Mean)	4.78	4.53	4.18	2.88	4.39	4.68	4.49
Household income							
Mean	31 062.38	41 626.49	91 776.62	130 975.90	56 729.37	27 446.81	47 115.62
Median	17 318	27 488	60 452	96 233	25 779	15 165	21 442
10 th percent	6 355	8 634	20 842	24 930	7 259	6 200	6 484
90 th percent	67 478	88 405	173 320	245 385	134 322	60 194	110 829

Interestingly, the data suggests that very close to a third of all households in the society are female-headed. While the concept of the household head is a problematic one in and of itself, this result does suggest a fair degree of feminization of household headship.

One of the important constraints in the data is that we have information at the household level, but limited individual-level information. Hence, the survey provides for the race, gender and age of each individual in the household only. So, drawing very detailed individual profiles at the household level to gain a better understanding of intra-household dynamics is not possible with the data. In addition, the weights used in the survey are household weights and not individual-level weights. As a result, we cannot work with a national sample of individuals in the society in an attempt at, for example, deriving an estimate of the total cost of a universal income grant scheme set at a particular level. Put simply, if we instituted a grant of R100 per individual, the survey cannot tell you the total cost, because the weights are at the household and not the individual level.

While not being able to cost the scheme accurately, the data does allow for the construction of a household size variable.⁶ The household size variable of course then means that a hypothetical income grant can then be accurately applied

⁶ If one knows the race, age and gender of each individual in the household, then a simple re-coding of one of these variables allows for the construction of a household size variable.

to each household. Hence, a household with 4 members will get a grant twice as large as a household with two inhabitants. What this means of course is that we have information on the total income entering the household as a result of the income transfer. Based on this, as the next section will illustrate, fairly good household poverty-reduction indicators as a result of a grant can be simulated. Ultimately then, while the total cost of the scheme is not possible to derive from the data, we can derive household poverty reduction effects - something that no other available data set can in fact deliver as accurately as the one in use here.

Given the above introduction to the constraints of the data though, the household size variable becomes pivotal in gleaning interesting results from the data. Table 7 therefore also presents the mean household size, by race and gender of household head. In the first instance, the national mean household size is 4.49, while the median (not reported) is 4. The racial figures are revealing. It is evident, firstly, that the African mean household size, at 4.78, is above the national mean and indeed higher than other racial groups. While African, Asian and Coloured household size is clustered around the over-4 size range, the mean size for White-headed households declines dramatically to 2.88. In addition, in terms of the gender of the household head, note that the mean size for female-headed households is above the national mean, higher than the male-headed figure, but below the African household number. An important point about these figures, and one that needs to be kept in mind when thinking about a universal income grant, is that they act as an “automatic” weight of sorts. Put differently, more indigent households are likely to yield lower monthly income. Indeed, a close look at the data reveals that while the average total annual income of a household with 4 individuals is about R63 000, the figure for a household with 10 members is about R35 000 per annum. Put differently, a 10-member household will be earning on average about 1.8 times less than their counterparts with a smaller number of members.⁷ The appendix below provides a more detailed, graphical description of

⁷ In terms of per capita household income, a dwelling with three individuals in it has a mean annual per capita income of R19,127.4, while the corresponding figure for a 10-member household is R3,510.23. This represents a differential of 5.4: 1, reinforcing the strong correlation being household size and poverty and the implicit pro-poor emphasis of the universal income grant.

the relationship between household income and household size. In terms of a national income grant, it means that a flat rate delivered to each household in the society will go disproportionately to larger dwellings, and by extension more will enter poorer households.

In addition to household size though, the initial household income levels are crucial predictors of the possible impact of a grant on the poverty status of the household. The data provided above, suggests that the mean annual household income for South Africa stands at approximately R47,000, translating into a monthly income of R3926.30. The more distributionally sensitive median measure suggests a lower income, of about R1786.83 per month. The 10th and 90th percentile figures provide initial information on the skewness in the distribution of household income. For example, the 10th percentile household nationally is earning a mere R6484 per annum.

The race-based figures reinforce this inequality, as the 10th percentile households for African- and Coloured-headed households are earning between R530 and R719 per month. A very similar 10th versus 90th percentile figures are evident for female-headed households. The upshot from the data is firstly that high levels of income inequality mean a significant number of dwellings are stacked up at the bottom-end of the distribution. More importantly though, a glance at the 10th percentile figures in particular, suggest that a monthly universal income grant of say R100 could conceivably increase household income quite substantially. For example, a R100 transfer to the 10th percentile African household would, in the unlikely event that one individual only was resident, increase household income by about 20 per cent.

There are two missing pieces of information in the above analysis in that we have no benchmark by which to measure the impact of a universal income grant. The most appropriate under the circumstances would of course be a measure of poverty at the household level. The income levels above therefore would need to understand within the context of absolute and relative poverty levels, something we turn to in the next table. Secondly though, it would be relevant to examine the

impact of the grant on income inequality, and thus the requisite benchmarks are also presented in Table 8 below.

Table 8 below therefore calculates a set of poverty and inequality measures for households in the society, which serves for our purposes here, as the pre-transfer poverty and inequality measures for the society. The data shows that in 1999, just under a third of South African households were poor. Specifically, of the estimated 11.4 million households in the society, approximately 3.7 million were below the poverty line. The poverty line used here was an annual household income of R12982.5. This was based on the 1995 household poverty line of R903 per month, drawn from May et al. (1995), and updated using the core inflation figures for the period 1995 to 1999. The racial breakdowns reveal the now well-accepted notion of the maldistribution of this poverty incidence.

Table 8. Measures of poverty and inequality by race and gender of household head

Household Head	Headcount	Poverty Gap Ratio (%)	Gini	Coefficient Of Variation
African	38.22 (0.021)	14.2 (0.142)	0.53	1.80
Coloured	21.51 (0.022)	6.6 (0.066)	0.48	1.13
Asian	3.73 (0.006)	0.9 (0.009)	0.47	1.23
White	3.03 (0.030)	0.8 (0.008)	0.46	1.25
Male	26.39 (0.029)	9.2 (0.011)	0.60	1.81
Female	43.52 (0.027)	17.0 (0.012)	0.53	1.81
Total	32.02 (0.029)	11.8 (0.011)	0.60	1.91

Note: Standard Errors are in parenthesis, and are corrected for according to frequency weights, the primary sampling unit and sampling stratification.

Hence, in terms of the data above we find that while about 38 per cent and 22 per cent of African and Coloured households respectively are poor, only 3 per cent of White homes and 4 per cent of Asian households are earning below the poverty line. Given that access to income is derived primarily through the labour

market, the differing opportunities and options available to Africans and Coloureds in the labour market, remain key to understanding this differential poverty status (see Borat and Leibbrandt, 2001). Apart from the concentration of poverty amongst Coloured and African households, it is evident that female-headed households in addition bear the brunt of indigence. Hence, the highest intra-group poverty incidence result is for female-headed households, where close to 45 per cent are in poverty.

The poverty gap measures suggest that the mean (z -proportionate) distance of poor households from the poverty line is again differentiated by race and gender of household head. While, poor African-headed households have an income that is on average 14.2 per cent below the poverty line, the corresponding figure for White-headed households is 0.8 per cent. Note though that the highest level of relative intra-group poverty is amongst female-headed households, where on average they earn 17 per cent below the designated poverty line.

Finally, we have included two standard measures of inequality, the Gini coefficient and the coefficient of variation, to serve as our inequality benchmarks for the simulations that are to follow. The results confirm the exceedingly high levels of inequality in South Africa, with a national Gini measure of 0.60 and a coefficient of variation of 1.91. The highest levels of income inequality are found amongst female-headed households. This maldistribution of income remains high for African-headed and male-headed households.

4.2 Universal Income grant simulation results

The descriptive statistics have played an important part in laying out the various sub-components of the simulation exercise. Hence, from the above we know firstly that we cannot cost the scheme using the IES99 data. Given that household and not individual weights are available with the data, we are not able to determine according to a nationally weighted sample, how much such a scheme would cost. Second, the data does however allow for the creation of a size variable. This then becomes a perfect numerical axis around which the impact of a

grant can be calculated. Simply put, if we have total household income and the size of the household, we can then simulate the transfer of the grant to each individual in the household by the requisite factor, to arrive at a post-grant household income. In comparing the pre-grant income with the post-grant income (derived from an annual pre-grant household income), we easily estimate the household poverty reduction effects of a grant. Third and finally, what we have gained here in terms of the poverty effect, we would have lost had we used for example the Census 1996 figures, where all households are present in the sample, but actual income data is not. We could work with disaggregate costing estimates (excluding the all-important ancillary costs) through the Census, but then would have nothing say about the potential poverty alleviation aspect of the grant.

Table 9 below presents the first attempt at simulating the poverty effect of a universal income grant set at different levels. First, the table measures the impact on poverty according to the Headcount Index: simply the impact the grant has on the number of people below the designated poverty line. We have expressed the headcount as a percentage here. The grant is set at four different values, namely R50, R100, R200 and R300 per month. It is in turn applied according to the race and gender covariates used in the above tables. Hence, in the simulation, every individual in the sample is provided with an annualized grant value. The grant values are arbitrary, except for the R100 value, which is based on the original BIG proposal from the Congress Of South African Trade Unions (COSATU), which suggested a R100 per month universal grant.

Table 9. Estimated headcount reduction effects from different grant values

Race/Gender of HH head	African	Coloured	Asian	White	Male	Female	Total
Pre-Transfer H	38.22	21.51	3.73	3.03	26.39	43.52	32.02
Post-Transfer Headcount Reduction							
R50 grant	28.00	14.43	2.12	2.19	18.77	32.86	23.34
	(0.016)	(0.018)	(0.005)	(0.004)	(0.022)	(0.022)	(0.022)
% Change	- 26.74	- 32.91	- 43.16	- 27.72	- 28.87	- 24.49	- 27.11
R100 grant	18.66	10.10	1.71	2.00	12.46	22.32	15.70
	(0.010)	(0.012)	(0.005)	(0.004)	(0.014)	(0.013)	(0.014)
% Change	- 51.18	- 53.05	- 54.16	- 33.99	- 52.79	- 48.71	- 50.97

R200 grant	8.59 (0.005)	5.62 (0.008)	1.17 (0.004)	1.50 (0.003)	6.15 (0.008)	9.80 (0.005)	7.35 (0.060)
% Change	- 77.52	- 73.87	-68.63	- 50.50	- 76.70	- 77.48	- 77.05
R300 grant	5.32 (0.004)	3.68 (0.004)	0.59 (0.003)	1.12 (0.002)	4.10 (0.005)	5.58 (0.003)	4.59 (0.004)
% Change	- 86.08	- 82.89	- 84.18	- 63.04	- 84.46	- 87.18	- 85.67

Note: Standard Errors are in parenthesis, and are corrected for according to frequency weights, the primary sampling unit and sampling stratification.

Table 9 thus measures the contrasting poverty outcomes from the different grants on selected segments of the populace. Nationally therefore, a R50 income grant per month to each individual in the society would result in the headcount index falling from 32.02 per cent to 23.34 per cent, translating into a 27 per cent reduction in the number of households below the poverty line. With a R100 grant the headcount index falls from 32.02 per cent to 15.7 per cent - which results in halving the number of poor households in the society. With the R200 and R300 grant, the headcount reaches into single-digits, with the R300 grant for example reducing the share of households in poverty to about 5 per cent.

Interesting results emerge from the race-based data. Hence, we see that African household poverty with a R50 grant would fall from 38.22 per cent to 28 per cent, while the African headcount would be about 5 per cent with a R300 grant. In sum then, for African households, the poverty reduction effect on the basis of the headcount index falls by between 27 and 86 per cent, depending on the value of the grant. On the specific grant proposal of R100, the results here suggest that half of the sample of poor households would be placed above the poverty line after the grant is received. For female-headed households the headcount falls from 42.32 per cent to about 22 per cent with a R100 grant to every individual in these households, and 6 per cent after a R300 grant. Hence, after the state has disbursed R100 to every individual in these households, close to a third remain in poverty.

The problem with the above figures however, is that they measure the change in absolute poverty, as opposed to relative poverty. Hence, the income grant effect is only derived in the figures if a household moves from below the poverty line to

above it. This is problematic of course, given that the relative poverty status of a household would undoubtedly have changed through such a transfer. Hence, a household with one individual in it earning for example R5 000 per annum, with a R100 grant would be earning R6,200 annually: the household is still below the poverty line, but is clearly less poor than it was. As the analysis of the previous section illustrated, the FGT index makes allowance for calculating the poverty gap index - this measure of relative poverty. The formal derivation of this index has of course been provided above. Suffice to say, that for our purposes here we examine the intra-group changes in relative poverty, thus not presenting the shares-analysis that would for example be useful in a costing exercise.

Table 10 therefore attempts a simulation of the relative poverty, or poverty gap changes that will result from the grant set at the same four levels as Table 9. The P_I measures provided in the table are representative of the average poverty gap for the designated group, and are expressed as a percentage. For example, amongst African households, the pre-transfer poverty gap expressed as a percentage measure is 14.2. This means that for the sample of all African households, the average African household earns about 14 per cent below the poverty line, z . Note that the relative poverty positions of the different households are thus also informative. Hence, the average poor White household is much better off than the average African dwelling, as it earns only about 1 per cent less than the z .

Table 10. Changes in poverty gap with universal income grant transfers⁸

Race/Gender of HH head	African	Coloured	Asian	White	Male	Female	Total
Pre-Transfer Poverty Gap (%)	14.2	6.6	0.9	0.8	9.2	17.0	11.8
Post-Transfer Poverty Gap Measures							
R50 grant	8.2	4.0	0.6	0.7	5.4	9.8	6.8

⁸ The poverty gap measure is reported according to at least five decimal points. As a result, the percentage figures often are not directly deduced from the P_I measures in the table, which are only according to two decimal points.

	(0.005)	(0.005)	(0.002)	(0.001)			(0.006)
% Change	- 42.25	- 39.39	- 33.33	-12.50	- 41.30	- 42.35	- 42.37
R100 grant	4.7	2.5	0.4	0.6	3.2	5.4	3.9
	(0.003)	(0.003)	(0.001)	(0.001)	(0.004)	(0.003)	(0.004)
% Change	- 66.90	- 62.12	- 55.56	- 25.00	- 65.22	- 68.24	- 66.95
R200 grant	2.1	1.3	0.2	0.4	1.6	2.2	1.8
	(0.001)	(0.002)	(0.00)	(0.00)	(0.002)	(0.001)	(0.002)
% Change	- 85.21	- 80.30	- 77.78	- 50.00	- 82.61	- 87.06	- 84.75
R300 grant	1.2	0.7	0.1	0.2	1.0	1.2	1.0
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
% Change	- 91.55	- 89.39	- 88.89	- 75.00	- 89.13	- 92.94	- 91.53

Note: Standard Errors are in parenthesis, and are corrected for according to frequency weights, the primary sampling unit and sampling stratification.

In terms of the impact of the grant then, the relative poverty effects are quite powerfully displayed. In terms of the national sample, a R100 grant to each individual will result in the mean poor household earning 4 per cent below the poverty line, as opposed to 12 per cent - translating into a 67 per cent reduction in the average poverty gap for the society as a whole.⁹ When compared with the headcount measures in the previous table, the percentage change effect is larger here, given that we are measuring relative as opposed to absolute changes in indigence. With a R300 grant, the national results show that the average household will be earning 1 per cent below the poverty line, as opposed to 12 per cent - translating into a 92 per cent reduction in the relative poverty status all households in the sample.

The race data, when compared with the previous table suggest similar trends. Hence, we see that the average African-headed household from earning 14 per cent below the poverty line, with a R100 grant will then earn on average 5 per cent below the poverty line. Clearly, in the case of the poverty gap, the effect of the grant is magnified, particularly so in the case of African- and female-headed households. Hence, we see that with a R50 grant, the poverty gap for these

⁹ The report of the Taylor Committee of Inquiry into a Comprehensive System of Social Security for South Africa, reported that the poverty gap would decline by 74 per cent with a basic income grant of R100 per individual in the society (RSA, 2002, p.63)

household types is close to halved. Indeed, through a R300 grant, the poverty gap across all household types would be almost reduced to zero.

As stated above though, what is perhaps more relevant about the poverty gap simulations in Table 10 is that we do not simply measure whether households have moved above the poverty line as a result of the grant. Rather the data is able to impart information regarding how much closer poor households have moved to the poverty line as a result of the grant. Relative poverty measures are more powerful than absolute in particular when trying to assess the poverty-reduction impact of a proposed intervention such as the income grant.

The final simulation is a not a direct universal income grant intervention, but rather an estimation of the poverty reduction effects that may occur in the event of the age for qualification of the state pension being reduced. This is one aspect of the income grant debate that has not been widely considered. It relates directly to the conception of the labour market and in particular labour demand trends in the economy. Recent work on the labour market has indicated that over the last two and half decades the South African labour market has witnessed a fundamental shift in employment patterns (Bhorat and Hodge, 1999). In brief this has been marked by massive job losses, particularly in the primary sectors, matched on the other hand by significant increases in the demand for labour in the services sectors, notably in financial and business services. In terms of skill levels, this sectoral change in employment reveals that the need for highly skilled workers (concentrated in the services sectors) has risen dramatically. In contrast, the demand for unskilled workers has plummeted. Importantly, these employment trends are likely not only to continue, but in all probability to intensify over the medium term. This is crucial for our thinking around an income grant, because these trends inform us about who the winners and losers have been, and are likely to be, in the labour market. Simplistically, the winners have been the highly skilled while the losers have been almost without exception, unskilled workers. To caricature this trend - while computer programmers have gained dramatically, mine and farm workers have been the losers from these changing employment patterns.

In terms of the unemployed, this means that those individuals who are not skilled or, put differently, have low levels of education will in all probability not get a job. Furthermore those who are older and not well educated will most likely never obtain a job in their lifetime. In contrast, young unemployed individuals with some form of education can be trained up and provided with some of the skills that firms may find useful. It needs to be remembered that in contrasting these two groups, whilst they are both officially unemployed, they present very different employment probabilities. In this context, the unemployed youth with some level of secondary education may, with the help of a skills development programme for example, find some form of employment. However, the middle-aged unemployed with very low levels of formal education will in all likelihood never find employment in their lifetime. It is the employment trends observed above, that strongly indicates that such an outcome has an extremely high certainty.

If one dissects the unemployed in this way, the unemployed youth are a job creation issue. However, the older unemployed are not a job creation problem, as these workers are likely to never find employment again. The latter, in being unemployable rather than unemployed, are a poverty alleviation issue, and as such it is this group of individuals that the income grant needs to focus on. It is for those individuals where the labour market is no longer a feasible option as an income source that the notion of a welfare grant is at its most powerful. In other words, the idea of a social safety net for the poor is most potent when focused on those workers who are so marginalized, that no form of labour market intervention will extricate them from indigence. It is when trying to use the income grant - a poverty alleviation tool - for a problem that is a labour market challenge (such as the unemployed youth) that the scheme begins to lose its appeal and indeed its effectiveness.

The table below was conceived to gauge the poverty alleviation impact of this specific slant on the income grant, namely one focused on the unemployable within the labour market. In recognizing that there is this cohort of unemployable individuals, the table below assesses one possible take on this. Hence, the

reduction in the qualifying pensionable age from 60 to 40 (for women) and 65 to 45 (for men) was the poverty alleviation intervention effectively simulated. We did not make the pension means-tested, and hence every individual within the new age boundaries received the old pension of R540 per month. The idea of running this simulation is of course to examine what the potential poverty alleviation effects would be if a more reduced version of the universal income grant were instituted. The table therefore provides the poverty reduction effects as measured by both the headcount index and the poverty gap.

Table 11. Reducing the pensionable age for men and women and assuming all get R540 p.m.

Race/gender	Pre-transfer H	Post-transfer H	% Change	Pre-transfer P ₁	Post-transfer P ₁	(Post-transfer) Standard error
		23.51			7.65	
African	38.22	(0.013)	-38.49	14.20	(0.004)	-46.13
		12.49			3.44	
Coloured	21.51	(0.013)	-41.93	6.60	(0.004)	-47.88
		1.58			0.42	
Asian	3.73	(0.004)	-57.64	0.90	(0.002)	-53.33
		2.41			0.65	
White	3.03	(0.005)	-20.46	0.80	(0.001)	-18.75
		14.30			4.41	
Male	26.39	(0.016)	-45.81	9.20	(0.005)	-52.07
		30.88			10.42	
Female	43.52	(0.019)	-29.04	17.00	(0.007)	-38.71
		19.74			6.39	
Total	32.02	(0.018)	-38.35	11.80	(0.006)	-45.85

Note: Standard errors in parenthesis are corrected for according to frequency weights, the primary sampling unit and sampling stratification.

Table 11 suggests that a reduction in the pensionable age for African-headed dwellings, would witness a 38 per cent decline in the headcount and a 46 per cent drop in the poverty gap measure. In addition for female-headed households, the figures are 29 per cent and 39 per cent respectively. Interestingly, after White-headed households, this reduction in poverty is the smallest amongst the household categories. This would suggest that female-headed households (along with White-headed households) have a relatively low representivity of adults over

the age of 40 for men and 45 for women. Put differently, this means that the age profile of adults in female-headed households is not particularly favourable to an age-based income grant intervention such as the one tested here. Apart from the outlier results of female-headed households, the remaining results suggest broadly that a reduction in the pensionable age as modelled here, would have an impact that lies somewhere between the poverty reduction effects of a R50 versus R100 income grant.

This result is more useful than it initially seems. For if we can agree that the two interventions are similar, controlling for the female-headed outcome of course, then the choice in scheme would depend on the relative ancillary costs. Hence, if we can derive the administrative and other operational costs associated with a universal grant, versus the lower pensionable age option, then we would be comparing two schemes that we knew had similar poverty reduction outcomes. Together with other financing ideas of each of the schemes, for example reclaiming via VAT with the universal scheme, we would then be able to institute a direct comparison of the efficacy of two possible income transfer programmes.

On the face of it, without any detailed examination of these costs, it would seem likely that the additional operational costs of reducing the pensionable age would be lower than the setting up of an entirely new grant scheme. The old age pension scheme has been in operation for scores of years, and clearly a widening of its base would increase administrative costs, but would not require the creation of entirely new administrative machinery. If we have provisional evidence that the new, lower pensionable age results in a poverty-alleviating effect of the same quantum as an entirely new grant scheme, then surely in the interests of lower costs and making the scheme more attractive to sceptics in government, this option is preferable? Apart from the high probability of much lower administrative and other costs, the lower pensionable age also may not suffer from the problem of a disincentive effect as large as the universal grant in that one would be implicitly targeting those individuals that have a very low probability *ex ante* of ever finding employment in their lifetime.

The above section then has attempted a formal modelling of the possible poverty effects that may result from the institution of a national income grant. As we have seen, the last simulation examined the poverty effects from a reduction in the pensionable age. An important value-added in the above simulations, is that we have modelled the impact on absolute and relative household poverty - a factor that is crucial for policy evaluation purposes. One important caveat is necessary here namely that the implicit notion of an income grant has not been assessed here. Criticisms of income transfer schemes abound, with issues such as targeting, labour supply incentive effects and ancillary costs looming large. The paper has deliberately steered clear of these issues, but suffice it to say that the above simulations cannot and should not be seen in isolation from the arguments that are often raised against such schemes.

4.3. Simple cost estimates

A very preliminary attempt is made here to estimate the possible cost of instituting a basic income grant, set at the proposed value of R100 per month. The exercise below is important in the sense that the official Taylor Commission Report, does not allude to the total relative costs of such a grant scheme, and indeed makes little reference to the possible financing options in the official report (RSA, 2002). Hence, Table 12 examines the potential cost of the R1200 per annum universal grant, and applies it to the 1996-2001 period, anchored around the official population estimates for the period. We assume that in the multi-year period that the R1200 per annum is provided in 1999 and the remaining years are inflated or deflated accordingly by the consumer price index. In addition, we assume that each grant would entail a 19 per cent administrative fee attached to it, a figure that is currently applicable to other forms of social assistance provided by the provincial authorities.¹⁰ We then tabulate the total cost of the grant (direct plus administrative costs) as a proportion firstly of total government expenditure and secondly as a percentage of total welfare expenditure.

¹⁰ This figure has been provided by a senior official of the National Treasury, through a personal communication.

Table 12. Basic cost estimates of instituting a R100 income grant

Year	Population (millions) ^a	Grant value (Rands p.a.) ^b	Total cost (R billions) ^c	% of total expenditure ^d	% of Total welfare expenditure ^d
1996	40 342	984	47 239	30.26	224.95
1997	41 227	1 068	52 396	29.52	221.64
1998	42 131	1 140	57 155	30.13	223.36
1999	43 054	1 200	61 481	30.13	226.12
2000	43 686	1 260	65 503	30.27	221.69
2001	44 561	1 332	70 633	30.22	207.25

a: Population figures are estimates based on registry of births and deaths, with the Census 1996 estimate as a base.

b: Grant value of R100 per annum assumed for 1999, and in(de)flated for years after (before) 1999.

c: Total Cost assumes a R19 per capita administrative cost

d: Based on Budget Review Estimates (National Treasury) for various years.

It is clear from the above estimates that the scheme would be expensive. For 1999 for example, the scheme would have cost about R61 billion, amounting to 39 per cent of government's total expenditure commitments in that year, and more than double the Department of Social Development's budget in that year. Given the overview above of the state's social assistance commitments, within the context of other social service outlays, the Medium Term Expenditure Framework and indeed the debt burden, this is clearly a notion with highly significant fiscal implications. The size of the scheme is quite powerfully indicated through the fact that the deadweight loss constitutes about 4 per cent of total government expenditure and over the period an average of about 35 per cent of total welfare expenditure. Indeed, in 1999 the deadweight loss amounts to about R9.8 billion per annum. Note also though that these administrative costs do not include the additional staff costs that would be required to manage and run the scheme (van der Berg, 2002).

The revenue options that have been unofficially mooted for the universal income grant include utilizing the VAT system to fund the scheme, increasing personal income tax at the upper-end of the distribution, a tax on company profits and finally simply increasing the budget deficit (van der Berg, 2002). Whilst we do not intend to consider each of these financing options at length, it is clear that each of them pose significant problems. For example, financing through the VAT

system, would mean, using the 1999 figures, that the VAT system would need to generate an additional R61 billion in revenue, which ultimately requires increasing the VAT rate from its current 14 per cent to 32 per cent. If the deficit-financing route was taken, the budget deficit for 1999 would balloon from its current 2 per cent of GDP to about 9 per cent of GDP - an increase from about R17 billion to R78 billion per annum. The suggestions for using the personal income tax or company tax system are equally onerous on the national revenue system. In 1999, total personal income tax revenue stood at about R86 billion, while the cost of the grant stands at over two-thirds of this personal income tax receipts in 1999. Finally, company tax receipts (including secondary tax on companies) constituted some R24 billion in 1999. The proposed grant cost in 1999 would be three times this revenue intake from companies.¹¹

5. Conclusions

The above paper has attempted an overview of the notion of social security in South Africa, with a focus on the more recent pronouncements from the Department of Welfare and others, for a universal income grant to be considered. It is clear, in the first instance, that the notion of a universal income grant is intricately tied to the state's MTEF, and within this the budget outlays that are made to the Department of Welfare. It was made clear that this budgeting framework is constrained by allocations that are necessary in areas such as education, and perhaps more importantly the repayment of the interest burden. It is these dictates of multi-year budgeting; it was argued above, that would weigh heavily on the National Treasury's consideration of a universal income grant. Detracting somewhat from these pure cost considerations though, the paper then proceeded to analyze the possible poverty effects that could be discerned through the institution of a national income grant system. It was made amply clear that while the poverty effects were possible to derive one had to be clear about differentiating between absolute and relative poverty levels. Hence, the results indicated that while absolute poverty shifts were witnessed through a grant

¹¹ All these revenue estimates are derived from the 2002 Budget Review estimates (RSA, 2002a).

scheme, relative poverty shifts were probably more important as an evaluation tool. Results indicate that according to the absolute poverty measure and depending on the value of the grant, household poverty would decline by between 27 and 80 per cent nationally. When using the relative poverty measure, the figures are 42 and 92 per cent. On the back of labour market reasoning, the simulation of the poverty effects when the pensionable age was reduced, reveals that the poverty effects are similar to the institution of a universal grant set between R50 and R100 per month. We close off the discussion with a brief consideration of the potential costs of such a scheme, together with an extremely tentative review of the potential financing options of the scheme. On both these counts, it is evident that the pressures on the fiscus, either through the expenditure of revenue system, would be enormous. It is precisely these types of hard costing exercises that cannot be seen in isolation from the obvious welfare enhancing effects of a universal income grant.

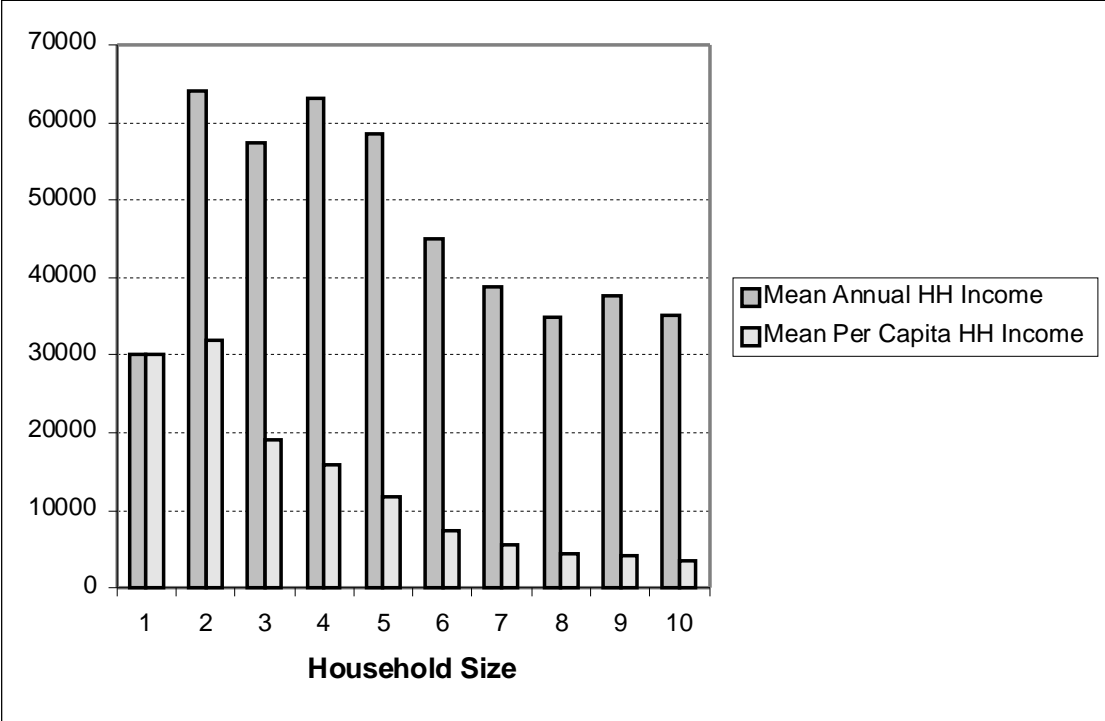
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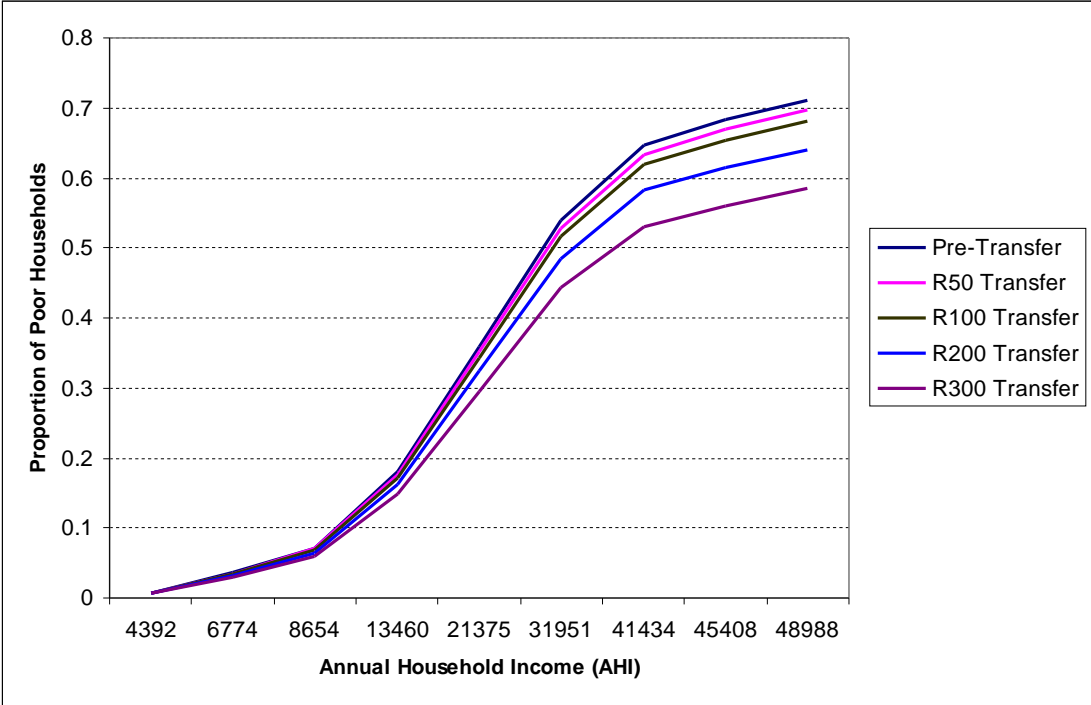
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Appendices

Appendix 1. Relationship between household size and income



Appendix 2. Poverty incidence curves for pre-transfer income and alternate transfer income values



Appendix 3. Poverty incidence curves for pre-transfer income, R100 grant and OAP extension

