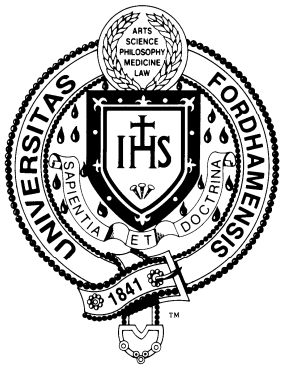

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Disability Cash Transfers in the Context of Poverty and Unemployment: the Case of South Africa

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Disability Cash Transfers in the Context of Poverty and Unemployment: the Case of South Africa

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Summary. - South Africa's Disability Grant (DG) program has been criticized for its poor administration and the dependency culture it promotes. This paper assesses the program's targeting effectiveness and its effects on labor supply. Using disability self reports and standard measures of economic well being, results suggest that DG's inclusion errors are relatively limited but exclusion errors are substantial and serious. The paper also shows that increased leniency in disability screening policy in the Gauteng province in the early 2000s does not appear to have altered labor market behaviors relative to Northern Cape, a province where there was no change in policy.

Key words - cash transfers, disability, targeting, labor supply, Africa, South Africa.

1. INTRODUCTION

Cash transfers have recently become more common in developing countries and are the subject of a growing body of research on their reach and impacts (Ellis, Devereux and White, 2009). Among the least studied cash transfer programs are those targeted at working age persons with disabilities[1]. In low income countries, disability cash transfer programs tend to be small with low take up rates (e.g. in India (World Bank 2007; p.113)). In middle income countries, the size of these programs has often increased in recent years (e.g., Brazil or South Africa), and yet little is known about their impacts. South Africa has a non-contributory and means-tested Disability Grant (DG) program for working age persons who are unable to work due to physical or mental disabilities. The purpose of this paper is to provide evidence on the South African experience of providing disability cash transfers. I provide a profile of DG beneficiaries and their households, and assess the targeting effectiveness of this program as well as its labor supply effect in the context of a policy change in disability screening in selected provinces.

Providing cash transfers to working age persons with disabilities may be appropriate if disability is associated with poverty. Conceptually, the relation between poverty and disability is commonly accepted as a 'vicious circle'[2]. However, results on the association between disability and household poverty (measured through household expenditures or assets) are mixed. Hoogeven (2005) and the World Bank (2007) find evidence of the expected positive association between disability and household poverty in Uganda and India, respectively, but Rischewski and al (2008) does not, in the case of Rwanda. A possible reason why persons with disabilities may not systematically be found to be more likely to be poor is that the poor with disabilities may be less likely to

survive their disability. Another possible reason is that persons with disabilities have extra costs of living (e.g., medical, transportation, care costs), which lead to higher household expenditures, and thus would lead to lower poverty estimates. Clearly, more research is needed to clarify the relationship between disability and poverty in the context of developing countries. One of the objectives in this paper is to investigate the correlation between disability and poverty when disability cash transfers are available.

An evaluation of the South Africa disability program is relevant to other developing countries that have or might design similar programs. When disability cash transfers are the only benefits potentially available to working age individuals, they may be an essential part of an antipoverty policy, especially when labor force participation is low. At the same time, disability cash transfers may not be feasible in developing countries due to the capacity that is required to administer a work test, which is the usual test of eligibility for disability targeted cash transfers. Persons with disabilities form a very heterogeneous group and the challenge of disability targeting is particularly acute in the case of invisible impairments such as lower back pain, or episodic ones such as certain mental illnesses. Therefore, the disability determination process is usually a lengthy and complex individual assessment that requires the provision of detailed medical information and sometimes a visit to a health clinic. As a consequence, the disability assessment is inherently prone to classification errors with some persons who are on the disability rolls not being disabled (inclusion error), while others who are rejected have disabilities (exclusion error). The research that examines the targeting effectiveness of disability programs has taken place almost exclusively in developed countries with relatively high labor force participation and limited poverty (e.g., Benitez-

Silva, Buchinsky & Rust, 2006). In developing countries, this issue has largely been unexamined partly due to the paucity of disability data[3]. More research is needed to understand the consequences of disability cash transfers in terms of their disability and poverty targeting effectiveness in developing countries.

The labor supply effects of disability cash transfers in developing countries have also been subject to limited research, in part because the disincentive effect of cash transfers on labor supply in such a context has often been assumed to be economically insignificant: in their seminal study of South Africa's Old Age Pension, Case and Deaton (1998) note that "the distortionary effect of cash transfers on labor supply is surely insignificant in many developing countries (and especially South Africa) where there are high rates of under- and unemployment". Yet, even in developing countries, the moral hazard costs of disability cash transfers are expected to be significant because disability 'tagging' is imperfect (Parsons, 1996). If screening into disability benefit programs was perfect, the supply of disability benefits would not affect labor supply decisions, and only those unable to work due to health conditions would receive benefits. However, because the disability screening process is imperfect and because developing countries generally have less of the administrative capacity that is required to run disability targeted programs, moral hazard reporting is expected to take place. Therefore, even in developing countries with high under- or unemployment, one might expect, that disability targeted programs induce efficiency losses through reductions in labor supply.

The paper is structured as follows. It starts by providing some background on South Africa's DG program in section 2. Section 3 includes a profile of DG beneficiaries and their households and assesses the targeting effectiveness of DG. Section 4 uses a

double difference design to estimate the impact of a change in disability screening stringency on labor force outcomes. Section 5 concludes.

2. DISABILITY GRANTS IN SOUTH AFRICA

The right to social protection is provided for in the 1996 Constitution of the Republic of South Africa: "everyone has the right to have access to social security, including, if they are unable to support themselves and their dependants, appropriate social assistance" (Section 27, 1c). South Africa's social assistance system is broad and includes six programs: Disability Grant, Care Dependency Grant[4], Child Support Grant, Foster Care, Old Age Pension, and War Veterans. The Old Age Pension, the Child Support Grant and DG are the largest programs in the share of social expenditures it accounts for (37%, 31% and 25% respectively) and in the number of beneficiaries (2.2 million, 7.9 million and 1.4 million beneficiaries respectively) (The Treasury 2009). Like other social grants, it is a non-contributory means tested program. The DG program is the only social grant program for the working age population. DG benefits are granted on a temporary or permanent basis. The permanent DG is intended to last until a person enters the Old Age Pension program. The temporary DG is only designed for those that have a disability that will prevent them from working for no less than six months and no more than one year. Unlike developed countries' disability programs, DG does not offer services, nor incentives for its beneficiaries to return to work (Mitra, 2009b).

In order to qualify for DG, applicants must meet several criteria: they must be citizens or residents of South Africa, they must meet age eligibility rules (18 to 59 for females, 18 to 64 for males[5],) as well as means income and asset tests. Applicants must provide proof of assets, including financial statements, as well as proof of marriage and

unemployment. Finally, an applicant must be "*owing to his or her physical or mental disability, unfit to obtain by virtue of any service, employment, or profession the means needed to enable him or her to provide for his or her maintenance*" (Government of South Africa, 2004)[6]. Regulations, issued by the national Minister of Social Development, further specify that a person is eligible only if the degree of disability makes the person unable to enter the labor market[7]. The applicant must not refuse employment which is within his/her capabilities, nor a treatment which may improve his/her condition. DG is thus a substitute for employment income for working age persons who are not able to work. Since November 2001, the disability assessment process has been conducted differently across provinces by either medical officers or assessment panels. Details on the assessment process and on the November 2001 reforms are given in Section 4 below.

In principle, the DG benefit amount is determined through a formula[8]. For a married couple, the benefit amount D is given by $D=1.075A - 0.5B$ where A is the maximum benefit amount payable per person, and B is the annual income of the couple[9]. However, in practice, a large majority of beneficiaries tend to receive the maximum benefit amount A, R940 in 2008 (CASE (2005)). The maximum DG benefit amount is the same as for the Old Age Pension and is substantial, about twice the per capita income for Africans (Blacks).

The DG program is large. In 2008, DG expenditures accounted for 1.2% of GDP, and 4.6% of the working age population were on DG (The Treasury, 2009; Statistics South Africa 2009b, 2009c). The DG program became large during a recent period of rapid growth. As shown in Figure 1, between 2001 and 2004, the number of beneficiaries

more than doubled and DG expenditures tripled. An investigation into the growth of the DG program (CASE, 2005) shows that several factors explain this growth. The demand for DG benefits grew rapidly due to a greater awareness of the program and more importantly a rising prevalence of HIV/AIDS and TB. On the supply side, the program became more accessible due to policy changes that made the program more lenient in most provinces.

<insert Figure 1 around here>

The generosity of benefits, the difficulty of determining disability, and the recent growth of the DG program has led to a growing concern in media and policy circles that DG benefits have contributed to create work disincentives and a culture of dependency[10]. The DG program has been criticized for providing perverse incentives based mainly on anecdotal evidence (Nattrass, 2006). Standing (2008) is concerned, but does not provide evidence, that the program creates a sickness poverty trap whereby persons with HIV/AIDS may refuse or hold off treatment in order to remain unable to work and thus eligible for DG. Standing goes as far as referring to DG as "one of the worst designed cash transfer schemes in the world." A lot of concern has also been expressed regarding the DG disability screening process. A survey of senior officials was conducted on social grants capability (van der Westhuize & van Zyll A., 2002): DG was the program for which the most concern was expressed, because of the medical assessment that is difficult to implement[11]. Finally, concern has been expressed over the program's deviation from its objective of assisting individuals who cannot work due to a disability towards assisting the long term unemployed (Vorster & al, 2004; p. 163).

These concerns voiced by observers appear to be supported by anecdotes, and not by research. Indeed, while there has been careful research on the profiles of beneficiaries and on the effects of the Old Age Pension and the Child Support Grant[12], very little evidence is available on the DG program. Jelsma et al (2008) draw a profile of DG beneficiaries, Loeb et al (2008) and Booysen and van Der Berg (2005) find that DG has a poverty reduction effect, but the results from these three studies apply to selected communities in a few provinces only. De Koker, Waal and Vorster (2006) draw an informative profile of DG beneficiaries, but do not compare them to non beneficiaries and use data for selected districts only within each province. Recent research does not find any evidence of a sickness poverty trap (Venkatarami et al, 2009). There is some qualitative evidence on DG's effect on the labor market: Noble, Ntshongwana and Surender (2008) find that individuals do not seem to change their attitudes with respect to work due to DG. Econometric studies so far have shown that the growth of the DG program might explain part of the recent decline in the employment of working age persons with disabilities (Mitra, 2008), but might not have had a significant effect on the labor market behaviors of all working age men and women (Mitra, 2009a).

This research is essential in the context of South Africa as this country has been trying to deal with rising unemployment and poverty, and since DG is the only means tested program for the working age population. This research is also useful as the Government is considering to introduce a universal Basic Income Grant as an addition to the existing social grant system. Some analysts and advocates argue that there should be a universal grant instead of the DG program (Standing, 2008; p.23). Finally, there has been a sharp growth in labor force participation following the end of apartheid, especially with

an increase in the participation of Africans and women (Kingdon & Knight, 2004). However, this increase slowed down in 2000-2003 and it is unclear to what extent HIV/AIDS and worker discouragement have contributed to this slowdown (Kingdon & Knight, 2007). Increased leniency in DG disability assessments in most provinces since 2002 might have contributed to the slowdown in the growth of the labor force.

3. WHO RECEIVES THE DISABILITY GRANT?

(a) Data and Disability Measures

The General Household Survey (GHS) is used to draw a profile of DG beneficiaries and their households. The GHS is a nationally representative survey conducted annually since 2002, which includes household level data on socio-economic indicators and individual level data on social grant receipt and disability status. Income data is incomplete in the GHS: it includes earnings but does not have amounts of public and private transfers received. I use as a welfare indicator the household expenditure level. Expenditures over the last month are collected for six categories (transport, housing, food, clothing, personal appearance and other)[13]. I take the sum of these six expenditures and calculate per capita household expenditures as a measure of household welfare. In addition to household expenditures, I use GHS data on living conditions and assets to assess the economic status of households.

To determine if DG reaches persons with disabilities, one would ideally need to know if the person has a disability as per the DG disability test. Some studies on the US Social Security Disability Insurance (SSDI) program have used teams of doctors and therapists to examine SSDI applicants and beneficiaries and thus provide an audit of the actual disability determination decisions made by Social Security staff (Nagi 1969). An

alternative to an actual audit is to use household surveys and the disability self reports they collect. This has been done in studies on SSDI and SSI (Supplemental Security Income) in the US (e.g., Benitez-Silva, Buchinsky and Rust, 2006). In the analysis below, I compare self-reported disability status to self reported DG beneficiary status.

The GHS has two possible ways to define disability. Working age persons were asked whether they worked in the past seven days. If they did not work, a question followed offering twelve possible reasons as to why they did not work. The fifth reason is "*illness, invalid, disabled or unable to work*".[14] It is used to identify persons with work disability. The GHS also has a question on limitations in three daily activities as follows: '*Is the person limited in his/her daily activities, at home, at work or at school, because of a long-term physical, sensory, hearing, intellectual, or psychological condition, lasting six months or more?*'. As noted earlier in Section 2, DG's program definition is centered around the ability to work, which is narrower than the broad activity limitation question above that covers work activities as well as home and school activities. To assess the disability targeting effectiveness of DG, I will use the work disability measure, the activity limitation measure, and a measure for either work or activity limitation disability.

Because I use self-reports for DG beneficiary and disability status, it is essential to note that the validity of the analysis below is based on three assumptions. The first is that a respondent's self-reported DG beneficiary status is accurate. In the absence of administrative data matched to the GHS, I am not able to verify the DG beneficiary status of respondents so this assumption is necessary[15]. The second assumption is that self-reported disability status is equivalent to true disability. This assumption is explained in detail and is labelled as the *truthful reporting hypothesis* in Benitez-Silva, Buchinsky and

Rust (2006). Respondents may not report their true disability status and exaggerate their health problems in case South Africa Security Administration (SASSA) could access their identity in the GHS and remove them from the DG rolls based on self reported disability status. However, the GHS survey is conducted by Stats South Africa, not by SASSA, and respondents are given assurances on the confidentiality of their answers (Statistics South Africa, 2008). Finally, the analysis depends on a third assumption, labelled by Benitez-Silva, Buchinsky and Rust (2006) the *accurate reporting hypothesis.* Individuals may have a different threshold for disability than DG medical officers and assessment panels. This hypothesis comes from the fact that the disability definitions used by SASSA and the GHS are not exactly the same and that a lot is left for interpretation of the DG disability definition by medical officers and assessment panels and of the GHS disability question by respondents. If individuals have a standard that is consistently too strict or too lenient compared to those of medical officers and assessment panels, then estimates of targeting errors will be inaccurate.

There is a large and controversial literature regarding the validity of self-reported work disability as a measure of true disability. Some researchers doubt that the truthful and accurate reporting hypotheses hold. For example, Bound and Burkhauser (1999; p. 3446) argue that “those who apply for SSDI and especially those who are awarded benefits tend to exaggerate the extent of their work limitations (relative to those who do not apply)”, which would bias inclusion error rates downward. Others have argued that those who have left the labor force prior to retirement age might rationalize their labor force status by focusing on their health as the main driver of their labor force status rather

than on other factors such as the state of the labor market or their taste for leisure. This would lead to overestimates of exclusion errors. Studies have reached very different results on the validity of self-reported work disability in the US.[16] Further research is needed to investigate the bias in work disability self reports in other contexts, such as in countries with very high unemployment like South Africa. The estimates of targeting effectiveness given below hold if the truthful and accurate reporting hypotheses are satisfied and should therefore be used with caution. Despite this caveat[17], this paper provides a useful first assessment of DG's targeting performance, that could be expanded through other methods that do not rely on these hypotheses, for instance in a disability audit study.

<insert Table 1 around here>

(b) Characteristics of the individuals and households who receive DG

DG benefits are paid to individuals based on a work disability test of the individual and a means test of the household. The profile of beneficiaries is therefore presented at both the individual and household levels. Table 1 presents characteristics of DG beneficiaries compared to non-beneficiaries at the individual level for the entire working age population, then for Africans and Coloureds, males and females. Africans account for a large majority of beneficiaries (81%) followed by Coloureds (13%). Whites and Asians represent under 6% of beneficiaries, which prevents an analysis of these subgroups due to small sample sizes. DG beneficiaries are substantially older than non-beneficiaries with mean ages of 48.5 and 42 respectively. There are a majority of beneficiaries over the age of 40, but a third of beneficiaries are under 40. This result stands in contrast with the age profile of disability beneficiaries in developed countries

where contributory programs often act as preretirement programs, and where non-contributory programs tend to have a majority of younger beneficiaries (OECD, 2003). As is to be expected, DG beneficiaries are substantially more likely to have a work disability compared to non-beneficiaries (75.6% vs 2.6%) and less likely to be employed (5.8% vs. 45%). More DG beneficiaries have prior work experience, perhaps as a result of being older, but are less likely to have worked in the past three years. Very few beneficiaries (6.6%) are willing to accept a job if offered one. This result is surprising given that close to a third of DG beneficiaries receive temporary benefits (CASE, 2005). One would expect that, given the uncertainty of future DG benefit receipt, temporary DG beneficiaries would be inclined to accept a job offer. The GHS does not give a breakdown of temporary and permanent DG beneficiaries for a detailed investigation of this issue. Finally, DG beneficiaries are also substantially less educated and three times more likely to be illiterate compared to non-beneficiaries. Overall, DG beneficiaries are a group of mostly African and older individuals who have a work disability, are less educated and tend to have been detached from the labor market for a long time compared to the rest of the working age population. This profile holds within racial and gender groups, as shown in columns (3) though (10) of Table 1. Unlike in developed countries where disability beneficiaries are more often males, in South Africa, males and females are about equally likely to be on disability.

<insert Table 2 around here>

Table 2 presents the determinants of the probability of receiving DG at the individual level. I do not include as regressors measures of the economic welfare of the individual and household (e.g. employment status, per capita household expenditures)

because they are endogenous to DG beneficiary status. I ignore the potential measurement error of reporting a work disability related to the fact that an individual may rationalize receiving DG benefits by reporting a work disability, thus leading to an overestimate of the effect of work disability on the probability of receiving DG. I find that having a disability is the largest predictor of the likelihood of receiving DG with a marginal effect of 12% for both males and females. As expected, years of education are inversely related to receiving DG, and age is positively associated with DG receipt, but coefficients for these two variables are close to zero. Marital status, race and illiteracy are not significantly associated with DG receipt.

<insert Table 3 around here>

After presenting a portrait of individuals on DG, Table 3 shows the mean characteristics of households that receive DG compared to those that do not in columns (1) and (2). This same breakdown is presented for Africans only in columns (3) and (4), and for coloureds only in column (5) and (6). DG households are larger and have more children. The average number of children is 1.99 for DG households compared to 1.4 for other households. DG households are also more likely to be three generation households, i.e. households with a child, parent(s) and grandparent(s), and skip generation households (a child living with grandparent(s)). In total, 42% of households on DG are three generation or skip generation households with a child. Subject to an appropriate intra-household distribution of resources, the DG program might thus reach many children. The fact that DG is likely to reach a lot of children, including through three generation and skip generation households in particular, is little known, while this is well established for the Old Age Pension (Case & Deaton, 1998). As expected, households on DG are a

lot more likely to have a head or a member of the household who has a disability, whether disability is measured as a work disability or as an activity limitation: 72% of households on DG included an adult with a work disability. Other characteristics in the table relate to the economic well being of households. On almost all indicators, DG households are substantially worse off than their non-DG counterparts. For instance, the mean and median per capita household expenditures are much lower for households on DG. The median stands at R212 for households on DG compared to R345 for households not on DG. The household employment rate is 17.3% for households on DG compared to 51.4% for households not on DG. Heads of households on DG are less educated and less likely to work. The disparities across DG beneficiary status are not as pronounced for food security indicators, living conditions and assets as they are for per capita expenditures, employment and human capital. Households on DG own the same number of necessities, but fewer luxury assets. Living conditions are worse for households on DG with less access to piped water, flush toilet and electricity. For one living condition, living in an informal dwelling, households on DG fare better than those not on DG, and have more farm assets than households not on DG, which perhaps reflects the larger concentration of DG households in rural areas[18]. Finally, DG beneficiaries are less likely to be in a metropolitan area, tend to live further away from social services (welfare office, hospital, clinic) and often receive other social grants. Overall, these results suggest that DG reaches households that tend to be poorer.

(c) Targeting: Does DG reach the poor with disabilities?

As explained earlier, DG uses two targeting mechanisms: a work disability test and a means test. I explained earlier how work disability was measured in the GHS. To

determine whether the DG reaches the poor with disabilities, one also needs to identify the poor. As a measure of household welfare, I use household expenditures net of social grants. I assume that the receipt of social grants does not have behavioral effects on the household, which is unrealistic and yet a common assumption used in the distributional or targeting performance evaluations of social assistance programs (e.g. Case & Deaton 1998). I compare household expenditures net of social grants to a poverty line. Because South Africa does not have a national poverty line, I use as a poverty line the breakeven point given by the DG benefit formula for a married couple explained above: $D=1.075A - 0.5B$. In 2005, the maximum grant A was R780 and the minimum was R100. From this minimum grant amount and the benefit formula, one can calculate that the household income threshold to receive the grant is R2,954. Assuming a household size of five persons using the mean household size for DG households in Table 2, that gives a per capita threshold of R591. Next, I calculate two classification error rates that are common in the targeting literature (Coady et al (2002)). The exclusion (Type I) error rate, also called the under-coverage rate, is calculated as follows: $U = \frac{N^{NDG}}{N^{e}}$ where N^{NDG} is the number of eligible non-beneficiaries and N^{e} is the number of all eligibles. The inclusion (Type II) error rate, also called the leakage rate, is: $L = \frac{N^{ND}}{N^{DG}}$ where N^{DG} is the total number of DG beneficiaries, and N^{ND} is the number of DG beneficiaries who do not have a disability. I assess the targeting effectiveness using both disability status and/or poverty status. For disability status, I use the work disability measure, as the DG program does, and I also use the activity limitation measure and a measure for either work disability or activity limitation.

<insert Table 4 around here>

Table 4 presents results using 2005 GHS data[19]. Assessing targeting using poverty and disability status, the inclusion error rate is 34%. As expected, inclusion errors become larger when the activity limitation measure is used (50%), and smaller when either disability measure is used (25%). In other words, three in four beneficiaries is poor and has some kind of disability. Exclusion errors are more common than inclusion errors. Using both poverty and disability status, the exclusion error rate ranges from 38% to 46% depending on the disability measure under use. The result on exclusion errors is consistent with a take up rate of 60%, i.e. an exclusion rate of 40%, found in the Taylor report (2002), with a back of the envelope calculation.

In the next panel of Table 4, when only disability targeting is considered, results are similar to the earlier analysis of both disability and poverty targeting. Based on any kind of disability measure, inclusion and exclusion error rates stand at 17% and 49% respectively. In the US, in a well-known study by Nagi (1969), medical experts checked the disability status of DI awardees and rejectees and found inclusion and exclusion error rates of 19% and 48% respectively. More recently, using disability self-reports, Benitez-Silva et al (2006) found for SSI and DI awardees and rejectees, inclusion and exclusion error rates of 20% and 60% respectively. Although substantial, DG's disability targeting error rates are comparable to those of disability programs in developed countries with more administrative capacity

In the lowest panel of Table 4, when only poverty targeting in assessed, exclusion errors are high at 89%, which can be explained by the fact that a substantial share of excluded

households do not meet the disability eligibility requirement. In contrast, DG's inclusion errors are low at 9% using poverty status only, which, together with earlier results on inclusion errors, suggests that DG's inclusion errors result more from the inclusion of persons without disabilities than from the inclusion of non-poor households. With an inclusion error rate below 10% using poverty status, South Africa's DG program would rank among the countries with a highly performing poverty targeting around the world (Grosh et al 2008). Additionally, it should be noted that if, once DG benefits are netted out of household expenditures, about 90% of DG beneficiaries are poor, this suggests that if the DG benefit was replaced with a small Basic Income Grant, as some analysts have proposed, this would likely throw a lot of people into poverty.

<insert Table 5 around here>

Some of the results in Table 4 are confirmed by Table 5 which presents household characteristics across DG beneficiary and work disability status. Measuring poverty through median expenditures, living conditions and assets, DG households without a work disability are as poor as DG households with a work disability, but have a higher employment rate. Table 5 also shows that households that are not on DG but have a work disability are not more likely to receive other social grants and are poorer than those on DG using per capita expenditures and both children and adult food security indicators. This result shows that DG's exclusion errors are serious and points to the need for DG to expand coverage to these households with work disability. The non-beneficiary households with work disability are in more isolated communities: they are further away from welfare offices, clinics and hospitals. The cost to apply for DG may therefore be higher for them or they may not be aware of the DG program. Overall, the analysis above

shows that targeting error rates are substantial but comparable to those found in developed countries for disability targeting. For poverty targeting, while inclusion errors are limited, exclusion errors are substantial and severe and should receive the attention of policymakers.

4. Effect on Labor Supply

(a) Previous Research

In this section, I identify the causal effect of DG on labor market outcomes in selected provinces using a double difference strategy. The impact of disability benefits on labor supply is econometrically difficult to identify. Benefit replacement rates are a function of earning histories, which might be correlated with unobserved attitudes and preferences with respect to work that also affect the decision to work. There is evidence that disability benefit amounts have a negative effect on labor supply, but estimates of the magnitude of the effect vary greatly (e.g., in the US, Haveman & Wolfe (1990)). Recently, Campolieti (2004) showed that an analysis of the disincentive effect of disability programs needs to include factors of disability policy other than the benefit amount, such as the screening stringency of the program. To my knowledge, Gruber and Kubik (1997) is the only study that directly estimates the labor market effects of changes in program stringency. They use a funding crisis in the SSDI program in the 1970s as a source of exogenous variation in disability screening stringency across states. They find that when the denial rate increases by 10%, labor force non-participation goes up by 1.2 to 1.7%. I assess below how disability screening stringency may affect labor supply in selected provinces of South Africa. Unlike Gruber and Kubik (1997), I do not use denial rates as a measure of disability screening stringency at the province level due to the

concern that, in South Africa, over the study period, denial rates might have been affected by province level changes in DG awareness. Instead, I use a discrete policy change that occurred in selected provinces only.

(b) Empirical Strategy

I use a difference in differences estimator that exploits the fact that DG was not always administered at the national level[20]. The DG program was originally established as a national program in 1946. Until November 2001, decision processes on DG eligibility remained consistent across provinces with a medical assessment by a physician in a clinic or a hospital, who met the applicant and then made a recommendation to the Pension Medical Officer. The Pension Medical Officer, who was based at the provincial head office of the Department of Social Development, never met the applicant but made the final decision on eligibility and was perceived as the gatekeeper of the program. The November 2001 Regulatory Amendment to the Social Assistance Act of 1992 changed the DG award process by giving provinces the power to change the following: i) how assessments were conducted; and ii) who made the decision on eligibility[21]. The first policy change gave provinces two possible assessment routes: by a physician in a clinic or a hospital as done earlier, or by an assessment panel, which typically includes a rehabilitation therapist, an employee of SASSA and a representative of the disability sector or the community. Four provinces adopted assessment panels: KwaZulu Natal, Limpopo, Mpumalanga and North West. One province, Free State, opted to use panels and physicians in parallel in different districts. The four other provinces (Eastern Cape, Gauteng, Northern Cape and Western Cape) retained the physician as the assessor. Because there has been some variation on panel membership and procedures across

communities within the provinces [22], and because of the lack of community level data on DG processes and labor market outcomes, this first policy change is beyond the scope in this paper.

The second policy change is the focus of this paper. All provinces, except the Northern Cape and Mpumalanga, did away with the Pension Medical Officer's position. The removal of this gate-keeping position led to a reduction in the stringency of the program, and has been understood as one of the major reasons for the large increase in grants awarded over the 2002-2004 period (CASE, 2005). I use the gatekeeper's policy change to introduce time series as well as cross sectional variation across provinces, which makes it possible to separate the effects of disability screening from the effects of unobservable characteristics of the DG applicant pools. Northern Cape did not make any change to its DG disability screening and is therefore the control group. The provinces that removed the gatekeeper's position but retained the physician as the assessor include Eastern Cape, Gauteng and Western Cape. The nature of the policy reform in Western Cape was somewhat different from that in the other two provinces given that two other policy changes affected disability screening in Western Cape during the study period [23]. In Western Cape, it is in fact unclear whether disability screening really became more lenient in 2002-2003. As shown by Figure 2, Western Cape had a limited increase in DG rolls in 2002 and 2003, compared to sharp increases in Eastern Cape and Gauteng. Western Cape is therefore not included in the treatment group. Using the data presented in figure 2, the number of beneficiaries almost doubled in Gauteng between 2001 and 2003 and more than doubled in Eastern Cape between 2001 and 2004. The number of beneficiaries increased by 48% in Northern Cape, which is surprising given that there

was no policy reform in that province. Over this period and in fact since the late 1990s, in all provinces, the Department of Social Development conducted awareness campaigns and built new service points to improve access to social grants (CASE, 2005), which likely explains the growth in the number of beneficiaries in Northern Cape despite the absence of a policy reform in disability screening[24].

<insert Figure 2 around here>

A typical concern with double difference studies that exploit policy changes in selected areas of a country deals with the potential endogeneity of the policy reform. Is this policy reform an administrative response to labor market conditions? It could be that provinces where there were bad labor market conditions adopted the policy change as a way to cope with rising unemployment. Similarly, one may wonder whether trends in labor supply motivated the absence of a policy reform in Northern Cape. I assessed the potential endogeneity of the policy change in two ways. Firstly, I investigated the motivation behind the policy change by reviewing the policy literature on DG (CASE, 2005) and by obtaining narratives by SASSA staff who worked during this policy change in the relevant provinces. In both, there was no evidence of a motivation related to the labor market. In treatment provinces, there was a concern over the gatekeeper making the final decision on eligibility while he/she had never met the applicant in person, as well as a concern over a low take up in DG benefits. In contrast, in Northern Cape, the perception appears to have been one of satisfaction with DG's take up. Secondly, I assess labor market trends pre-treatment in the different provinces. Appendix 1 presents province trends in labor market outcomes in the five years prior to the policy change. Gauteng and Northern Cape had a low growth in employment, as opposed to Eastern Cape which had a

sharp growth between 1997 and 2001. The policy change does not appear to have responded to distinct and negative pre-trends in the labor market in treatment provinces and is plausibly exogenous. However, I choose to exclude Eastern Cape due to its different labor market pre-trends, in case such trends continued through the post-treatment period and could thus bias the results.

Indeed, the key identification assumption of the difference-in-difference estimator is that treatment and control groups have similar trends during the post-treatment period. Due to this assumption, I must also be confident that there was no labor market shock that affected the treatment and control provinces differentially over 2001-2003 that was correlated with the labor supply decisions of individuals. There might have been shocks that affected health and job opportunities, and in turn labor market outcomes, differentially in Northern Cape and Gauteng. Appendix 2 presents trends in economic growth and number of AIDS sick people and AIDS deaths in Northern Cape and Gauteng over the study period. Economic growth and the increases in AIDS sick people and AIDS deaths were similar in both provinces. Overall, I do not find any evidence that a shock related to economic growth and the HIV/AIDS epidemic might have affected Gauteng and Northern Cape differently over the 2001-2003 period. There might also have been some policy changes at the province level that affected labor market outcomes during the post treatment period. To my knowledge, there was no policy change conducted over 2002 and 2003 by the provincial governments of Gauteng and Northern Cape that might have affected the labor market within each province. A double difference strategy is therefore feasible to assess the impact of DG on labor market outcomes, using Gauteng as a treatment group and Northern Cape as a control group. An illustration of the level of

disability screening stringency in the Gauteng and Northern Cape provinces is presented in Figure 3. This figure gives the DG denial rates during the two years prior to the policy change and during the two years afterward. As expected, there was a sharp drop in denial rates in Gauteng, but not in Northern Cape.

<insert Figure 3 around here>

I use a difference-in-differences estimator using a logistic regression of the form:

(1) $$NP_i = f(\beta_1 X_i + \beta_2 Post + \beta_3 Treat + \beta_4 (Post \times Treat) + \varepsilon_i)$$

where *NP* is a dummy variable that takes the value of one for labor force nonparticipation and zero otherwise for individual *i*, *X* is a vector containing controls for observable characteristics (race dummies, age, marital status, and educational attainment). *Treat* is a dummy variable that takes the value of one for the treatment province and zero otherwise. *Post* takes the value of one for the period after the policy change. The coefficient of interest is β_4, the interaction between *Post* and *Treat*. The coefficient estimate on this interaction term captures the change in labor force nonparticipation in the treatment province, where disability screening became more lenient in December 2001, relative to the change in nonparticipation in the control province. As a dependent variable, I use in turn different indicators of labor force nonparticipation. In South Africa, because the ranks of discouraged workers (persons who want to work and are available to work but do not seek work) are very large, analysts often use the *broad* labor force to analyze unemployment and labor force participation (Kingdon and Knight 2006). The *broad* labor force includes discouraged workers, while the *narrow* labor force does not. The first dependent variable of interest is nonparticipation in the broad labor force: it refers to not working and (a) not wanting to

work and/or (b) not being available for work. The second dependent variable under use is nonparticipation in the narrow labor force, i.e. not working and (i) not wanting to work and/or not being available for work or (ii) being a discouraged worker. The third dependent variable of interest is non-employment, i.e. not working for pay, whether the person wants to work, is available to work or seeks work.

(c) Data and Outcomes

The primary source of data for the analysis is the Labor Force Survey (LFS), a nationally representative household survey focused on labor force participation. The LFS is used by Stats South Africa to measure labor market indicators at the national and province levels. The LFS has a twice yearly rotation panel design, with data collected in March and September of each year since 2000[25]. I use two cross sections of the LFS. September 2001 is the baseline, while September 2003 is the period after the policy change. The analysis is focused on working age individuals who would qualify for DG based on age at the time of data collection. Since the treatment province is essentially urban, I restrict the control group to urban areas of Northern Cape.

(d) Results

<insert Table 6 around here>

Table 6 gives unadjusted estimates of the policy effect by gender and age group for three labor market outcomes. Labor force non-participation (broad and narrow) and non-employment have tended to increase over the study period in both treatment and control provinces, which leads to difference-in-difference estimates that are not statistically different from zero. One exception is for younger males in the treatment province, non-participation (narrow) increased by a statistically significant 3.3 percentage

points. There was a drop in non-participation for the control province, but it is not statistically different from zero. The unadjusted difference-in-differences estimate for younger males is a (significant) 8 percent relative increase in the non-participation rate based on the narrow labor force definition.

<insert Table 7 around here>

Table 7 presents summary statistics for the treatment and control groups before and after the policy change. There are some noticeable differences between the two groups. Individuals in the control group tend to be less educated than in the treatment group and have a different race composition. However, because the racial and educational distributions remain relatively stable over time, the treatment dummy in (1) takes care of these differences across provinces.

<insert Table 8 around here>

Table 8 presents estimates of the coefficient of the interaction term $treat \times post$ for the probability of non-participation (broad and narrow) and non-employment in (1) above. The coefficient of interest is consistently not significantly different from zero, including for the subsample of younger males for the probability of nonparticipation in the narrow labor force, which was found to be significant earlier in Table 6. These results suggest that the policy change toward a more lenient disability screening in Gauteng, has not led to a significant change in labor market outcomes relative to Northern Cape where no reform was conducted.

Overall, results in this paper are consistent with results in Mitra (2009a). Mitra (2009a) finds no evidence of an impact in disability screening reform for females, but finds that male discouraged workers might have stopped wanting work following the

policy change which led to a drop in the broad non-participation rate but not a significant change in the narrow non-participation rate and in the non-employment rate. A comparison of the two studies suggests that this difference results from the use in Mitra (2009a) of a larger treatment group including Eastern Cape and Western Cape in addition to Gauteng. Thus, with a more restrictive construction of the treatment group, the effect that was identified for discouraged male workers disappears.

A limitation of the analysis above is that the results may be sensitive to the LFS waves that were picked for pre or post treatment. As a robustness check, I change pre and post treatment periods to March 01 and March 03[26]. I get similar results which are available from the author upon request. Finally, a limitation of the empirical design above is that I cannot control for time varying unobserved differences between control and treatment groups. In order to conduct double difference studies, control and treatment groups along states or provinces have often been formed within countries with some degree of decentralization. Yet this is not ideal given the evolving context of each state or province that is partly unobserved. This is of particular relevance for South Africa's provinces, which have changed vastly in the post-apartheid era. Despite this limitation, the analysis above makes a useful contribution to the largely unstudied area of the labor market effects of DG and of disability transfers when unemployment and poverty are high.

5. CONCLUSIONS

The analysis in this paper, using two household surveys, has led to several noteworthy findings. It first draws a profile of DG beneficiaries using nationally representative data. The DG program manages to reach households who tend to be

poorer, have more children and a higher unemployment rate than non recipient households. Individuals who receive DG are mostly African, who have a work disability and a low level of education and tend to have been detached from the labor market for a long time. Males and females are equally likely to be on DG and individuals less than 40 years old account for a substantial share of recipients.

Secondly, the analysis of the DG targeting effectiveness has mixed results. I find an inclusion error rate of 34% and an exclusion error rate of 42%. Inclusion errors are made by including in the program poor persons without a work disability, and to a lesser extent the non-poor. However, the analysis further shows that exclusion errors are substantial and serious since excluded households fare worse in terms of food security indicators than beneficiaries and do not rely more on other social grants. This result suggests the need for an information campaign or efforts to reduce the cost of applying for DG in isolated areas.

Thirdly, by exploiting a policy reform of the disability screening process in selected provinces, the paper shows that a move towards more leniency in disability screening in Gauteng does not appear to have altered the labor market behavior of working age individuals. In the context of South Africa, where the pools of the unemployed and labor force nonparticipants are very large, an expansion of the disability program through more lenient disability screening seems to have absorbed those who were already out of the broad labor force. This result goes against a commonly held view among observers that the DG program has been promoting dependency by reducing labor supply. In the context of high unemployment and poverty as in South Africa, a disability cash transfer program for the working age population may be able to redistribute to the

poor and unable to work with insignificant distortionary effects. Finally, it should be noted that this paper does not provide a comprehensive evaluation of the DG program and many questions are yet to be answered. For instance, does DG change the work and migration behavior of household members? Does DG empower persons with disabilities within households? Does DG affect the demand for health care services and the health outcomes of its recipients? The evaluation of the DG program presented in this paper calls for a more systematic evaluation of disability cash transfers in South Africa and in developing countries in general.

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NOTES

[1] For example, Mozambique, Brazil and Namibia have disability cash transfers. Mitra (2005) includes a review of disability targeted programs in a few developing countries. Grosh, del Ninno, Tesliuc and Ouerghi (2008) also review issues related to income support for persons with disabilities.

[2] This vicious circle has been described in several sources, for instance in Mitra (2005) and in Yeo and Moore (2003). Poverty can be a cause of disability for instance through malnutrition. Poverty can be the consequence of disability through the loss of employment or the reduction in work earnings following the onset of disability for the individual and the caretaker.

[3] It is notable that, in their review of 111 targeted antipoverty interventions, Coady, Grosh and Hodinott (2002) do not have any program specifically targeted at the poor with disabilities. One program that has been evaluated is Namibia's disability cash transfer, which was found to achieve very little coverage (Subbarao, 1996).

[4] The care dependency grant is for the caretakers of children with disabilities.

[5] In 2008, men's age eligibility was changed to 18 to 59, like women.

[6] In addition to meeting these specific criteria, DG applicants must not fall into one of seven disqualifying categories. These are as follows. The applicant is in a psychiatric hospital, refused to undergo medical treatment, gives false or misleading information in the application, lives at a State Home, is being treated for drug addiction, is in prison, or is receiving care from a treatment center.

[7] e.g., regulation 2(3)(b) as explained in CASE (2005).

[8] Social Assistance Act (Act 59 of 1992) Regulation 12

[9] For an unmarried individual, the benefit amount *D'* is: $D'=1.15A-0.5C$ where *C* is the annual income of the individual.

[10] *Sunday Times*: "Exploding the Myth that Social Security breeds dependency". P. Martin, April 24th, 2005. *The Mercury*: "Social Grant System can't be sustained", L. Daniels, August 21st, 2006.

[11] In addition, in the Taylor report (2002) prepared by experts on South Africa's social grants, it is noted that "among the most consistent complaints in the Social Security system are those concerned with the poor

administration of public support for disability. The administrative capacity of the system cannot cope with the scale of its responsibilities".

[12] Cally, Case & Hosegood (2009), Case & Deaton (1998) and Case, Hosegood & Lund (2005), Statistics South Africa (2009a).

[13] I do not use reported total household expenditures given that they are reported in brackets, and the brackets are large. Another limitation of the GHS is that it does not include information on consumption of self produced goods, nor of payments in kind.

[14] The possible answers to the question as to why a person did not work during the past seven days are given below: "01 = Has found a job, but is only starting at a definite date in the future, 02 = Lack of skills or qualifications for available jobs, 03 = Scholar or student and prefers not to work, 04 = Housewife /homemaker and prefers not to work; 05 = Retired and prefers not to seek formal work; 06 = Illness, invalid, disabled or unable to work (handicapped); 07 = Too young or too old to work; 08 = Seasonal worker, e.g. fruit picker, wool-shearer; 09 = Cannot find suitable work (salary, location of work or conditions not satisfactory); 10 = Contract worker, e.g. mine worker resting according to contract; 11 = Recently retrenched; 12 = Other reason."

[15] In the context of South Africa, to my knowledge, studies of social grant beneficiaries have so far been based exclusively on self reports of beneficiary status (e.g., Ardington, Case & Hosegood, 2009). One way to continue the research in this paper would be to have GHS data matched with SASSA administrative data.

[16] For instance, Kreider (1999) finds large reporting errors that are related to labor force status, while Dwyer and Mitchell (1999) find that reporting behavior is not affected by labor market outcomes. Recently, Benitez-Silva, Buchinsky and Rust (2006) found that self-reported disability status are unbiased among DI and SSI applicants in the US.

[17] Another possible caveat of this analysis might be a selection bias, because the study focuses on persons who survive their disabilities. If some of the persons who did not survive their disabilities were poor, then it becomes relevant to assess the extent to which they were able to access DG prior to death. It would be problematic to find that the poor with very severe disabilities who did not survive did not access DG.

Because GHS is a cross sectional survey, I cannot identify persons who die due to their disability and whether or not they received DG prior to death.

[18] This could not be verified given than the 2005 GHS does not have a rural/urban tag. Previous research has shown that a majority of DG beneficiaries live in rural areas (Jelsma et al, 2008).

[19] Similar results were reached with 2007 GHS data.

[20] The South Africa Social Security Agency (SASSA) was established in 2006 to harmonize the process nationally. Although Cabinet approved a harmonized assessment tool for DG in August 2007, to date differences in disability assessment remain across provinces.

[21] The main sources on policy changes were CASE (2005), Government of South Africa (2001) and author's correspondence and meetings with province level staff of SASSA.

[22] For more details on assessment panels, see CASE (2005) and Simchowitz (2004).

[23] While the gatekeeper's position was removed, former gatekeepers were put in charge of quality control in the disability assessment process. Further, Western Cape's department of social development established a specialized anti-fraud unit for social grants (CASE, 2005).

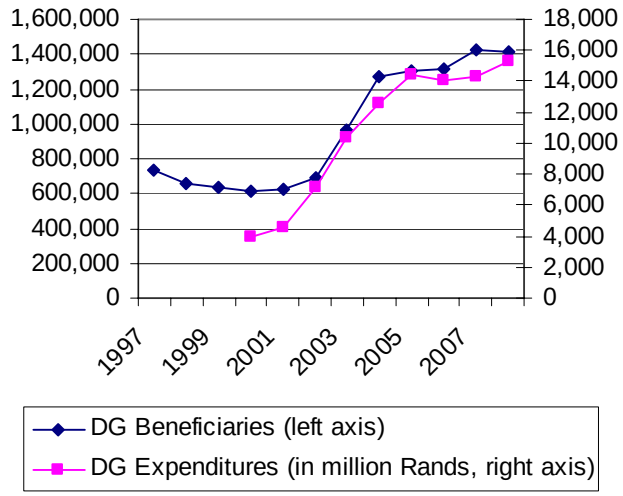
[24] Regarding the awareness campaign, it can be thought of as a policy change. It is expected to lead to more DG applications and higher takeup among the working age population, and might indirectly affect labor supply. Because the awareness campaign was conducted in both control and treatment provinces and started before our study period, its impact on the labor supply should be differenced out in this double difference study. It would not be the case, however, if the intensity of the awareness campaign changed at different rates in the control and treatment groups over the study period. For instance, if the awareness campaign became more intense in Northern Cape but not in Gauteng over the 2001-2003 period, then Northern Cape (control group) received an awareness campaign treatment, but Gauteng (treatment group) did not. The assessment of the impact of the disability screening treatment would then be biased toward zero. In the absence of detailed data at the province level on the awareness campaign, I cannot assess the likely extent of this potential bias. Nevertheless, it is reasonable to expect that the probability of having such a bias is small given that the sample is restricted to urban areas, while the awareness campaign prioritized rural and remote areas (CASE 2005; p. 59). In addition, the awareness campaign was not focused on DG: it was about social assistance in general and two benefits, the Old Age Pension and the

Child Support Grant, received more attention in the campaign than the other benefits. Indirectly, this had the effect of increasing the awareness for other grants as well (CASE 2005; p. 105).

[25] For the panel starting in September 2001, Statistics South Africa constructed a longitudinal file at the individual level, called the 2006 LFS panel. However, sample sizes at the province level were too small for it to be used in this analysis.

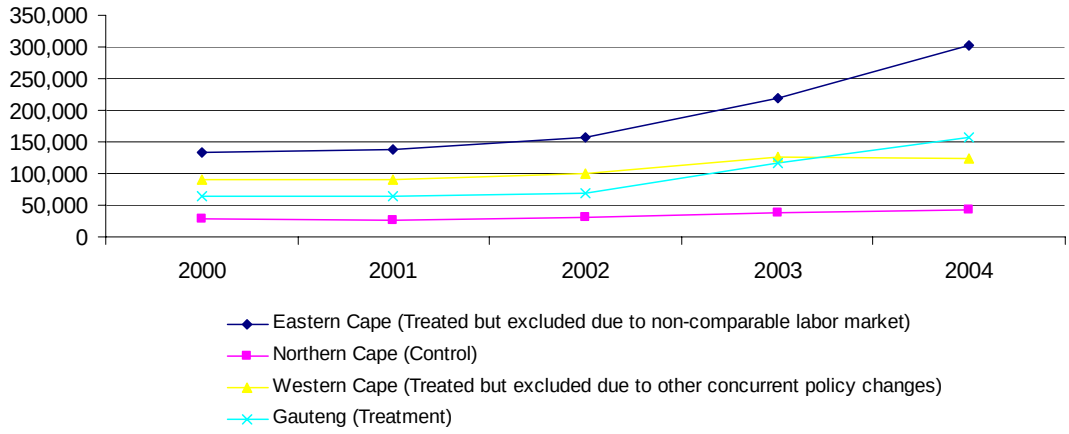
[26] In October 2003, a severe drought hit parts of the treatment and control provinces, which restricts the period of study post-policy change. In addition, I did not use both the March and September waves for 2001 and 2003 as pre and post treatment periods due to the large overlap in observations between March and September 2003 (Statistics South Africa 2006).

Figure 1: Number of Beneficiaries and Expenditures for the Disability Grant (DG)



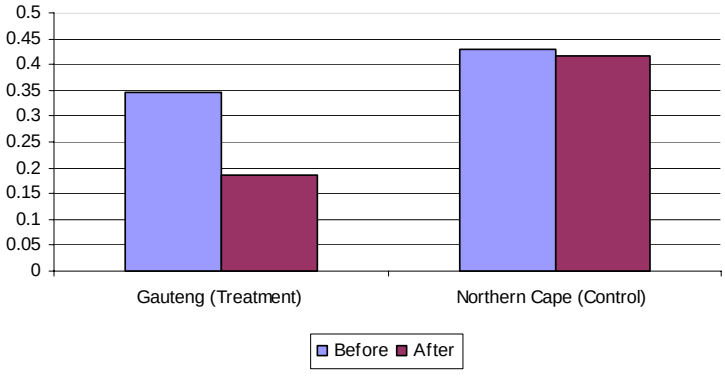
Source: The Treasury (Various years), SASSA

Figure 2: Number of DG Beneficiaries by Province



Source: SASSA

Figure 3: DG Denial Rates Before and After the Policy Reform by Province [a]



Source: SASSA

[a] The before period includes 2000 and 2001, while the after period includes 2002 and 2003.
The rejection rate is the number of rejections over the number of applications received in a given year.

Table 1: Characteristics of Disability Grant (DG) Beneficiaries compared to Non-beneficiaries [a]

	All		Africans		Coloureds		Males		Females	
	DG Beneficiaries	Non DG Beneficiaries	DG Beneficiaries	Non DG Beneficiaries	DG Beneficiaries	Non DG Beneficiaries	DG Beneficiaries	Non DG Beneficiaries	DG Beneficiaries	Non DG Beneficiaries
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Demographics										
Male	0.486	0.507	0.485	0.5	0.489	0.504	1	1	0	0
Married	0.321	0.344	0.31	0.277	0.311	0.432	0.34	0.355	0.303	0.332
African	0.813	0.766	-	-	-	-	0.812	0.754	0.814	0.777
Coloured	0.13	0.092	-	-	-	-	0.131	0.091	0.129	0.093
White	0.033	0.115	-	-	-	-	0.042	0.124	0.024	0.105
Asian	0.025	0.028	-	-	-	-	0.015	0.03	0.034	0.025
Age	48.483	41.961	48.159	41.227	48.611	42.877	48.384	42.624	48.814	41.722
	(0.320)	(0.085)	(0.355)	(0.094)	(0.866)	(0.257)	(0.467)	(0.130)	(0.439)	0.110
Aged 41 and older (up to 64 for men and to 59 for women)	0.657	0.286	0.648	0.261	0.67	0.317	0.624	0.291	0.687	0.283
Disability										
Work disability	0.756	0.026	0.760	0.030	0.746	0.024	0.803	0.024	0.711	0.029
Activity limitation disability	0.562	0.021	0.553	0.022	0.614	0.020	0.628	0.027	0.5	0.015
Disability type: [b]										
- seeing disability	0.112	0.262	0.117	0.274	0.074	0.268	0.111	0.252	0.113	0.28
- hearing disability	0.077	0.172	0.080	0.172	0.040	0.136	0.066	0.169	0.09	0.178
- speech disability	0.079	0.057	0.075	0.052	0.093	0.013	0.07	0.062	0.089	0.049
- physical disability	0.448	0.327	0.451	0.304	0.434	0.408	0.47	0.338	0.422	0.308
- mental disability	0.185	0.129	0.187	0.150	0.149	0.080	0.222	0.145	0.141	0.102
- emotional disability	0.129	0.093	0.122	0.089	0.165	0.107	0.118	0.1	0.141	0.081
- other disability	0.109	0.084	0.092	0.069	0.200	0.124	0.087	0.084	0.134	0.084
Any disability (work or activity limitation)	0.859	0.040	0.856	0.043	0.876	0.036	0.897	0.041	0.822	0.037
Labor market status and human capital										
Currently employed	0.058	0.450	0.062	0.396	0.039	0.574	0.06	0.53	0.056	0.367
Has worked before [c]	0.558	0.423	0.532	0.383	0.658	0.664	0.611	0.472	0.509	0.386
Has not worked for three years or more [c d]	0.842	0.510	0.833	0.497	0.869	0.449	0.889	0.552	0.791	0.471
Illiterate (cannot read and/or cannot write)	0.315	0.090	0.343	0.111	0.243	0.046	0.304	0.097	0.325	0.083
Years of education	5.445	9.769	5.101	9.007	5.893	9.791	5.71	9.703	5.195	9.837
	(0.109)	(0.029)	(0.117)	(0.029)	(0.260)	(0.076)	(0.100)	(0.043)	(0.148)	(0.039)
Number of observations	2,881	55,446	2,159	41,999	594	7,815	1,384	26,821	1,497	28,625

Source: Author's calculations based on the 2005 General Household Survey.
a Standard deviations are in brackets, estimates are weighted. Data is presented for DG age eligible males (aged 18 though 64) and females (aged 18 through 59)
b Disability type among persons with activity limitations.
c These questions were asked only from people who are not currently employed.
d This question was asked only from people who worked before.

Table 2: Determinants of the Probability of Receiving DG [a]

	Males	Females
Work disability	2.444 ***	2.072 ***
	(0.055)	(0.052)
	[0.120]	[0.120]
Married	0.007	-0.037
	(0.054)	(0.048)
	[0.008]	[0.001]
Coloured	0.177	0.294
	(0.111)	(0.030)
	[0.009]	[0.011]
White	-0.156	-0.069
	(0.108)	(0.116)
	[-0.003]	[-0.001]
Asian and other races	-0.018	0.316
	(0.215)	(0.141)
	[-0.002]	[0.018]
Age	0.006 ***	0.012 ***
	(0.001)	(0.002)
	[0.000]	[0.001]
Illiterate (cannot read and/or cannot write)	-0.078	0.008
	(0.090)	(0.082)
	[-0.002]	[0.004]
Years of education	-0.0445 ***	-0.066 ***
	(0.009)	(0.008)
	[-0.002]	[-0.003]
Intercept	-2.440 ***	-2.287 ***
	(0.144)	(0.134)
Number of observations	28,199	30,117

Source: Author's calculations based on the 2005 GHS.

[a] Results are included of a probit model of being a DG beneficiary. Standard errors are between brackets and marginal effects are between square brackets. Province fixed effects are included in all regressions.

Table 3: Characteristics of Households Receiving DG compared to other Households [a]

	All races		African Households		Coloured Households	
	Households with a DG beneficiary (1)	Households without a DG beneficiary (2)	Households with a DG beneficiary (3)	Households without a DG beneficiary (4)	Households with a DG beneficiary (5)	Households without a DG beneficiary (6)
Demographics and Family Structure						
Household size	5.172	3.626	5.269	3.698	5.276	4.126
	(0.072)	(0.021)	(0.083)	(0.025)	(0.167)	(0.084)
Number of children 0-17	1.99	1.4	2.105	1.498	1.872	1.534
	(0.048)	(0.014)	(0.054)	(0.016)	(0.107)	(0.053)
Male headed household	0.536	0.634	0.522	0.599	0.537	0.713
Three generations household (with a child) [b]	0.348	0.142	0.369	0.050	0.304	0.156
Skip generation [b]	0.072	0.042	0.08	0.05	0.038	0.031
Disability [c]						
Head of household has a work disability	0.38	0.022	0.391	0.026	0.337	0.019
Head of household has an activity limitation disability	0.273	0.018	0.276	0.019	0.262	0.017
Head of Household has any disability	0.446	0.034	0.454	0.037	0.42	0.03
Household includes adult(s) with work disability	0.726	0.047	0.724	0.053	0.745	0.048
Household includes adult(s) in household with activity limitation	0.561	0.034	0.552	0.036	0.624	0.039
Household includes adult(s) in household with any disability	0.825	0.066	0.82	0.071	0.86	0.07
Per capita household expenditure (Rand/month)						
Mean	2,726.527	6,640.561	1,232.181	3,434.599	1,939.365	8,197.933
	(664.481)	(542.913)	(304.875)	(511.018)	(640.933)	(2,257.140)
Median	212.15	345	175	248.889	417.167	625
Employment and human capital						
Household employment rate	0.173	0.514	0.151	0.476	0.265	0.633
Head of household is employed	0.205	0.603	0.193	0.564	0.262	0.711
Head of household has more than seven years of schooling	0.328	0.617	0.279	0.549	0.424	0.686
Food Security						
Insufficient food for children [d]	0.215	0.186	0.232	0.219	0.132	0.093
Insufficient food for adults [d]	0.218	0.167	0.244	0.201	0.14	0.097
Living conditions						
Informal dwelling	0.13	0.171	0.139	0.208	0.101	0.075
Dwelling has iron roof	0.667	0.599	0.733	0.691	0.37	0.357
Piped water in dwelling or in yard	0.711	0.788	0.661	0.747	0.933	0.919
Dwelling has flush toilet	0.236	0.367	0.13	0.231	0.628	0.696
Dwelling has electricity connection	0.775	0.798	0.737	0.749	0.933	0.943
Assets						
Number of necessities[e]	2.524	2.544	2.448	2.388	2.789	2.84
	(0.020)	(0.008)	(0.021)	(0.009)	(0.043)	(0.031)
Number of luxuries[f]	3.226	4.262	2.696	2.911	4.763	6.337
	(0.077)	(0.041)	(0.069)	(0.029)	(0.224)	(0.226)
Number of farm assets owned[g]	0.433	0.319	0.485	0.316	0.123	0.129
	(0.017)	(0.005)	(0.019)	(0.005)	(0.022)	(0.014)
Communities						
Metropolitan area	0.259	0.384	0.215	0.331	0.437	0.544
Less than 30 minutes from welfare office	0.475	0.561	0.408	0.492	0.734	0.802
Less than 30 minutes from hospital	0.377	0.482	0.309	0.406	0.889	0.886
Less than 30 minutes from clinic	0.617	0.696	0.556	0.645	0.645	0.710
Receipt of other social grant						
Receipt of any other social grant	0.546	0.354	0.582	0.401	0.445	0.3
Receipt of Old Age Pension	0.219	0.148	0.224	0.154	0.192	0.146
Receipt of Child Support Grant	0.413	0.259	0.454	0.31	0.311	0.181
Number of observations	2,688	23,008	2,058	17,830	518	2,733

Source: Author's calculations based on the 2005 GHS.

a Standard deviations are in parentheses, estimates are weighted. Statistics are not presented separately for Indian/Asian and White households due to small sample sizes.

b This is among all households the share of households with at least one child who have three generations or one generation skipped (e.g., grandparent and grandchild).

c The person with a work disability needs to be DG age eligible (18-59 for women, 18-64 for men).

d Insufficient food intake in the past twelve months.

e Necessities include bed, bicycle, radio, stove.

f Luxuries include boat, motor boat, camera, car, cell phone, computer, internet, fridge, land phone, microwave, motorbike, stereo, tv, tape recorder, satellite dish, sewing machine, vcr, washing machine.

g Farm assets include donkey cart/ox cart, grinding mill, plough, tractor, wheelbarrow.

Table 4: Exclusion and Inclusion Errors [a b]

	Inclusion error rate (%)	Exclusion error rate (%)
Based on poverty *and* disability status		
using - the work disability measure	34.40%	42.09%
- the activity limitation measure	49.92%	38.03%
- any disability measure	25.48%	45.81%
Based on disability status only		
using - the work disability measure	27.76%	43.34%
- the activity limitation measure	44.35%	42.94%
- any disability measure	17.82%	48.82%
Based on poverty status only	9.12%	88.82%

Source: Author's Calculations using 2005 GHS.

[a] Poor households have per capita household expenditures below the poverty line derived from DG's benefit formula.

[b] The inclusion error rate is the share of the non-poor and nondisabled households out of the total number of households on DG. The exclusion error rate is the proportion of poor and disabled households who are DG beneficiaries out of the total number of poor and disabled households.

Table 5: Household Characteristics across DG and Work Disability Status [a]

	Households on DG		Households not on DG	
	with a work disabled person	without a work disabled person	with a work disabled person	without a work disabled person
Demographics and Family Structure				
Household size	5.152	5.224	5.122	3.552
	(0.091)	(0.136)	(0.099)	(0.034)
Number of children 0-17	1.92	2.188	2.13	1.364
	(0.056)	(0.097)	(0.064)	(0.021)
Male headed household	0.539	0.527	0.517	0.642
Three generations household (with a child) [b]	0.356	0.327	0.310	0.134
Skip generation [b]	0.061	0.1	0.096	0.04
Disability				
Head of household has a work disability [c]	0.523	0	0.475	0
Head of household has an activity limitation disability	0.287	0.235	0.141	0.012
Head of Household has any disability	0.526	0.235	0.483	0.012
Household includes adult(s) in household with activity limitation	0.636	0.363	0.335	0.02
Per capita household expenditure (Rand/month)				
Mean	3,350.405	1,076.045	1,467.359	6,686.218
	(886.393)	(286.033)	(544.542)	(63.169)
Median	220	196.667	134.444	369.5
Employment and human capital				
Household employment rate	0.136	0.273	0.184	0.53
Head of household is employed	0.169	0.302	0.252	-0.006
Head of household has more than seven years of schooling	0.327	0.329	0.291	0.633
Food Security				
Insufficient food for children [d]	0.228	0.182	0.342	0.177
Insufficient food for adults [d]	0.23	0.186	0.352	0.158
Living conditions				
Informal dwelling	0.129	0.132	0.136	0.173
Dwelling has iron roof	0.667	0.669	0.672	0.596
Piped water in dwelling or in yard	0.724	0.677	0.723	0.791
Dwelling has flush toilet	0.239	0.228	0.217	0.375
Dwelling has electricity connection	0.796	0.719	0.747	0.801
Assets				
Number of necessities [e]	2.529	2.511	2.333	2.554
	(0.024)	(0.039)	(0.030)	(0.015)
Number of luxuries [f]	3.213	3.260	2.844	4.332
	(0.095)	0.146	(0.107)	(0.086)
Number of farm assets owned [g]	0.434	0.429	0.44	0.313
	(0.022)	(0.028)	(0.022)	(0.007)
Communities				
Metropolitan area	0.249	0.286	0.206	0.393
Less than 30 minutes from welfare office	0.469	0.490	0.433	0.567
Less than 30 minutes from hospital	0.371	0.390	0.328	0.490
Less than 30 minutes from clinic	0.606	0.645	0.582	0.701
Receipt of other social grant				
Receipt of any other social grant	0.508	0.565	0.540	0.345
Receipt of Old Age Pension	0.200	0.204	0.230	0.143
Receipt of Child Support Grant	0.370	0.441	0.420	0.251
Number of observations	1,989	699	1,345	21,663

Source: Author's Calculations using 2005 GHS.
Notes as in table 3.

Table 6: Unadjusted Difference-in-Differences Estimates [a]

	Treatment			Control			Difference-in-
	Pre	Post	Difference	Pre	Post	Difference	Differences
Older Males (40 to 64 years old)							
Nonparticipation in the broad labor force	0.1243	0.1477	0.0234	0.3486	0.3767	0.0281	-0.0047
	(0.011)	(0.011)	(0.016)	(0.027)	(0.029)	(0.040)	(0.037)
Nonparticipation in the narrow labor force	0.1596	0.1882	0.0286	0.3927	0.4143	0.0216	0.007
	(0.012)	(0.013)	(0.018)	(0.030)	(0.031)	(0.043)	(0.041)
Nonemployment	0.2903	0.3045	0.0142	0.5039	0.5338	0.0299	-0.0157
	(0.016)	(0.015)	(0.022)	(0.035)	(0.033)	(0.048)	(0.050)
Number of observations	1,302	1,318		340	319		
Younger Males (18 to 39 years old)							
Nonparticipation in the broad labor force	0.1473	0.1437	-0.0036	0.1984	0.1904	-0.008	0.0044
	(0.016)	(0.009)	(0.019)	(0.020)	(0.016)	(0.026)	(0.045)
Nonparticipation in the narrow labor force	0.1992	0.2322	0.033 *	0.3311	0.2833	-0.0478	0.0808 *
	(0.010)	(0.012)	(0.016)	(0.021)	(0.022)	(0.030)	(0.038)
Nonemployment	0.4393	0.4687	0.0294	0.573	0.5607	-0.0123	0.0417
	(0.015)	(0.014)	(0.021)	(0.030)	(0.031)	(0.043)	(0.051)
Number of observations	3,042	2,659		548	542		
Older Females (40 to 59 years old)							
Nonparticipation in the broad labor force	0.249	0.238	-0.011	0.4772	0.5154	0.0382	-0.0492
	(0.014)	(0.015)	(0.020)	(0.033)	(0.030)	(0.045)	(0.046)
Nonparticipation in the narrow labor force	0.3086	0.3138	0.0052	0.541	0.5637	0.0227	-0.0175
	(0.015)	(0.016)	(0.022)	(0.036)	(0.030)	(0.047)	(0.049)
Nonemployment	0.431	0.4405	0.0095	0.6182	0.6586	0.0404	-0.0309
	(0.016)	(0.017)	(0.023)	(0.037)	(0.030)	(0.048)	(0.051)
Number of observations	1,214	1,129		327	313		
Younger Females (18 to 39 years old)							
Nonparticipation in the broad labor force	0.1753	0.2066	0.0313	0.2321	0.2578	0.0257	0.0056
	(0.009)	(0.010)	(0.021)	(0.019)	(0.021)	(0.028)	(0.046)
Nonparticipation in the narrow labor force	0.291	0.3598	0.0688	0.4006	0.4455	0.0449	0.0239
	(0.011)	(0.013)	(0.017)	(0.022)	(0.027)	(0.035)	(0.040)
Nonemployment	0.5764	0.614	0.0376	0.6609	0.6873	0.0264	0.0112
	(0.015)	(0.014)	(0.021)	(0.025)	(0.029)	(0.038)	(0.048)
Number of observations	2,993	2,527		631	578		

Source: Author's Calculations using the Labor Force Survey (LFS).

[a] Weighted means are presented. The pre-change period includes data from September 2001; the post-change period includes data from September 2003. Standard errors are in parenthesis. The treatment province is Gauteng, the control province is Northern Cape. * $p<0.05$

Table 7: Summary Statistics

	Treatment		Control	
	Pre	Post	Pre	Post
Older Males				
African	0.624	0.71	0.345	0.418
Coloured	0.034	0.030	0.458	0.445
White	0.305	0.227	0.179	0.122
Asian and other races	0.037	0.033	0.018	0.015
Age	49.447	49.352	50.601	50.593
	(0.205)	(0.202)	(0.420)	(0.415)
Married	0.795	0.788	0.710	0.671
Elementary school or less	0.238	0.227	0.421	0.439
Junior school	0.266	0.258	0.272	0.230
Secondary school	0.417	0.435	0.267	0.311
Higher education	0.079	0.080	0.040	0.020
Number of observations	1,302	1,318	340	319
Younger Males				
African	0.752	0.797	0.417	0.452
Coloured	0.034	0.034	0.455	0.441
White	0.186	0.140	0.120	0.094
Asian and other races	0.028	0.029	0.008	0.013
Age	29.314	28.691	27.683	28.180
	(0.145)	(0.157)	(0.029)	(0.353)
Married	0.350	0.351	0.321	0.312
Elementary school or less	0.097	0.080	0.199	0.155
Junior school	0.198	0.186	0.287	0.266
Secondary school	0.645	0.678	0.490	0.565
Higher education	0.060	0.056	0.024	0.014
Number of observations	3,042	2,659	548	542
Older Females				
African	0.653	0.702	0.365	0.432
Coloured	0.040	0.045	0.448	0.429
White	0.273	0.215	0.164	0.115
Asian and other races	0.033	0.037	0.023	0.024
Age	48.476	48.32	48.943	49.077
	(0.190)	(0.170)	(0.371)	(0.278)
Married	0.583	0.573	0.545	0.558
Elementary school or less	0.226	0.208	0.476	0.437
Junior school	0.302	0.293	0.273	0.300
Secondary school	0.426	0.440	0.235	0.243
Higher education	0.046	0.059	0.016	0.020
Number of observations	1,214	1,129	327	313
Younger Females				
African	0.735	0.770	0.432	0.432
Coloured	0.039	0.041	0.459	0.469
White	0.193	0.157	0.092	0.088
Asian and other races	0.034	0.032	0.017	0.011
Age	29.296	28.390	28.268	28.050
	(0.139)	(0.135)	(0.314)	(0.309)
Married	0.404	0.406	0.393	0.354
Elementary school or less	0.079	0.064	0.214	0.155
Junior school	0.191	0.159	0.257	0.289
Secondary school	0.668	0.729	0.513	0.534
Higher education	0.062	0.048	0.016	0.022
Number of observations	2,993	2,527	631	578

[a] Weighted means are presented based on data from the LFS. Standard deviations are in parenthesis.

Table 8: Adjusted Difference-in-Differences Estimates [a]

	Non-participation (broad)	Non-participation (narrow)	Non-Employment
Older males (40-64 age group)	0.175	0.203	-0.019
	(0.246)	(0.236)	(0.224)
Younger males (18-39 age group)	-0.216	0.311	0.094
	(0.235)	(0.232)	(0.205)
Males, Grade 7 or less	-0.123	0.126	0.137
	(0.219)	(0.231)	(0.238)
Older females (40-59 age group)	-0.193	-0.037	-0.112
	(0.238)	(0.226)	(0.225)
Younger females (18-39 age group)	-0.036	0.023	-0.112
	(0.192)	(0.172)	(0.179)
Females, Grade 7 or less	-0.204	-0.237	-0.460
	(0.195)	(0.202)	(0.242)

Source: Author's Calculations using the Labor Force Survey (LFS).

[a] Table entries represent coefficient estimates from a logistic model. The table contains the estimated coefficient of the *PostxTreat* variable and standard errors (in parentheses). The LFS has a stratified design with clusters, and standard errors are adjusted accordingly. Specifications also include age, marital status, and education (four categories), a dummy for *Post* and a dummy for *Treat*.

APPENDIX 1: Pre-Trends in Labor Market Outcomes

	Males			Females		
	1997	2001	% change	1997	2001	% change
Employment rate [a]	(000)	(000)		(000)	(000)	
Northern Cape	125	136	9%	78	93	19%
Eastern Cape	414	629	52%	327	628	92%
Gauteng	1461	1587	9%	963	1156	20%
Unemployment rate (Narrow) [b]						
Northern Cape	15%	22%	49%	26%	31%	21%
Eastern Cape	27%	31%	17%	32%	33%	4%
Gauteng	19%	25%	32%	27%	33%	21%
Unemployment rate (Broad) [c]						
Northern Cape	21%	32%	52%	37%	47%	29%
Eastern Cape	47%	45%	-3%	56%	51%	-9%
Gauteng	26%	29%	11%	40%	41%	2%

Sources: LFS Statistical Release (2001), OHS Statistical Release (1997)

a The employment rate is the percentage of the working age population who works for pay.

[b] The narrow unemployment rate is calculated based on the *narrow* labor force, which includes the employed, those who do not work but want and are available to work and have taken active steps to find work in the four weeks prior to the interview. It does not include discouraged workers (i.e., persons who are not employed, want and are available to work but have not taken active steps to find work in the four weeks prior to the interview). The narrow unemployment rate is the share of the narrow labor force who are not employed and looking for work.

[c] The broad unemployment rates is based on the *broad* labor force, which includes, the employed, the not employed who are searching for work as well as discouraged workers. The broad unemployment rate is the share of the broad labor force who are not employed, whether they are seeking work or are discouraged workers.

APPENDIX 2: Trends over the Study Period

	2001	2003	% Change 2001-2003
Economic Growth rate			
Northern Cape (Control)	1.3%	1.8%	38.5%
Gauteng (Treatment)	2.3%	2.9%	26.1%
Total AIDS sick			
Northern Cape (Control)	1,955	3,562	82.1%
Gauteng (Treatment)	62,611	108,678	73.6%
Total AIDS deaths			
Northern Cape (Control)	1,549	2,506	61.8%
Gauteng (Treatment)	45,818	71,748	56.6%

Sources: ASSA2003 model and Stats South Africa (2004)