Can cash transfers aid labour market recovery?
Evidence from South Africa's special COVID-19 grant

By Timothy Köhler and Haroon Bhorat

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TIM KÖHLER
tim.kohler@uct.ac.za

HAROON BHORAT
haroon.bhorat@uct.ac.za

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Abstract
As part of the South African government's response to the adverse economic effects of the COVID-19 pandemic, the country's system of social assistance was temporarily expanded. On the extensive margin, a special COVID-19 grant was introduced to provide support to a large, previously unreached group – unemployed adults – and therefore address a notable hole in the social safety net. Given the grant's distinct target group, it is plausible that its labour market effects may vary from those of pre-existing grants. In this paper, we provide a quantitative, descriptive analysis on COVID-19 grant receipt as well as causal estimates of the receipt of the grant on labour market participation by adopting a quasi-experimental econometric approach. First, we find that not only did the grant bring millions of previously unreached adults into the system, but application for and receipt of the grant was relatively pro-poor, and it was relatively well-targeted to the unemployed. We estimate that in the grant's absence poverty would have been over 5% higher among the poorest households, and household income inequality 1.3% to 6.3% higher. Second, contrary to the common concern that grant programs may discourage work, our preferred causal estimate suggests that COVID-19 grant receipt increased the probability of job search by more than 25 percentage points. This highlights the grant's important role in reducing inactivity, enabling participation, and ultimately aiding labour market recovery.

JEL codes:
D04, D31, C54, H53, J48, J68

Keywords:
South Africa, labour market, COVID-19, pandemic, grants, social assistance, poverty, household incom inequality

Corresponding authors

Tim Köhler (Junior Researcher and PhD candidate)
Development Policy Research Unit, School of Economics, Faculty of Commerce, University of Cape Town.
tim.kohler@uct.ac.za

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Contents

1. Introduction

Most governments around the world have implemented lockdowns which have imposed restrictions on social mobility and interaction in response to the COVID-19 pandemic. Such policy has afforded many countries time to produce the necessary infrastructure and ultimately delay and minimise the spread of the virus. However, these policies have always been expected to lead to substantial short and long-term losses in livelihoods, particularly among vulnerable groups. Several estimates indicate that the crisis will likely result in the first increase in global extreme poverty since 1998.[1] Latest estimates suggest that between 119 and 124 million people could be pushed into extreme poverty in 2020 (effectively eradicating progress made since 2017) and concerningly, more than a third of the new poor are projected to be in Sub-Saharan Africa (Mahler et al., 2020). Extreme poverty is expected to increase by 2.7 percentage points for the region — equivalent to the 2011 regional poverty level (Valensisi, 2020).

In response to the adverse effects of the pandemic on low-income households, social protection systems have expanded significantly all around the world. By the middle of May 2021, over 220 countries or territories had over 3 300 planned, introduced, or adapted social protection measures in place, from 103 measures in 45 countries approximately one year earlier (Gentilini *et al*., 2021). 55% of these programs take the form of non-contributory social assistance, with cash transfers accounting for nearly half of these programs. Such an expansion of social assistance was included in the South African government's package of relief measures on both the intensive and extensive margins. From May to October 2020, the amounts of every existing unconditional cash transfer (hereafter referred to as social grants) were increased and a special COVID-19 Social Relief of Distress (SRD) grant of R350 per month (about $25 at the time of writing) was introduced, with the latter being extended to January and later to April 2021.

The COVID-19 grant is distinct in South Africa's social grant system considering it is the first in the post-Apartheid era to target unemployed adults – a group who had previously been largely unreached by the system. All other existing grants predominantly target the disabled, elderly, and children in low-income households. This is because prior to the pandemic the country's social assistance system presumed prime-aged, able-bodied individuals would be able to support themselves through the labour market (Ferguson, 2015). However, such a view neglects the widespread, structural unemployment which plagues South Africa. It can therefore be said that the introduction of the COVID-19 grant at least partially addressed this hole in the country's social safety net. The addition of the grant, together with pre-existing grants, had the potential to reach 36 million individuals, or approximately 63% of the South African population (Bhorat et al., 2021). Towards the end of 2020, the grant had brought over 6 million previously unreached individuals into the system (Baskaran et al., 2020) – exceeding the growth of the system in the last decade – costing the state nearly R20 billion by March 2021 (SASSA, 2021). Given that this grant has a distinctly different target group, it is plausible that its effects on labour market participation – a common question of concern to policymakers around the world – may vary.

Our aim in this paper is two-fold. First, we provide a comprehensive, descriptive, quantitative analysis of application for and receipt of South Africa's special COVID-19 grant using representative, longitudinal household survey data collected during the national lockdown. We focus on between-group variation in receipt, the determinants of experiencing successful receipt conditional on applying, the progressivity of the grant relative to other grants, and estimated poverty and inequality effects. We find that by October 2020, the grant brought 5.2 million previously unreached adults – mostly non-employed, young men – into the system. Moreover, one third of adults in South Africa co-

[1] Defined as the number of individuals living on less than $1.90 per day.

reside with a recipient. We show that the grant was relatively well-targeted with close to 60% of recipients being non-employed, and the remainder mostly being informally employed. In a multivariate context, we find significant heterogeneity in the probability of successful receipt conditional on applying. Significantly, the chronic non-employed were 51% more likely to receive the grant relative to other groups. We further show that application for and receipt of the grant was relatively pro-poor, with the progressivity of household-level receipt resembling that of the Child Support Grant (CSG) – the grant with the lowest income means test. This latter finding is in line with our fiscal incidence analysis which suggest notable poverty and inequality effects; namely, that in the grant's absence poverty would have been over 5% higher among the poorest households, and household income inequality 1.3% - 6.3% higher depending on the measure.

Second, given that the grant is distinct in South Africa's social assistance system and hence labour market effects may vary from that of existing grants, we make use of an alternative dataset to estimate the causal effect of COVID-19 grant receipt on labour market outcomes among the non-employed by adopting a quasi-experimental econometric approach. To our best knowledge, this is the first paper to provide any evidence on causal effects of receipt of this grant. Our preferred estimate suggests that COVID-19 grant receipt increased the probability of job search by more than 25 percentage points relative to comparable non-recipients – significant at the 1% level. This finding suggests that the COVID-19 grant has played an important role in reducing labour market inactivity and enabling participation – ultimately aiding the recovery of the labour market. Our findings are thus contrary to the common concern that social grant programs may discourage work, in line with the empirical literature in developing countries (Banerjee et al., 2017), developed countries (Marinescu, 2018), and South Africa for other existing grants (Woolard et al., 2011). These findings have clear implications for policymaking going forward.

The remainder of this paper proceeds as follows. Section 2 provides an overview of South Africa's system of social assistance and its COVID-19-induced changes. Section 3 describes our data and in Section 4 and 5 we present and discuss our descriptive and econometric results. Thereafter, we conclude in Section 6.

2. Pandemic-induced changes to South Africa's social assistance system

South Africa's contemporary system of social assistance primarily consists of tax-financed, unconditional, and means-tested (except for the Foster Care Grant) cash transfers that primarily empower vulnerable children, the elderly, and the disabled. Since democratization, social assistance has expanded significantly with nearly 18 million beneficiaries (or one in every three South Africans) as of 2019/20, at a cost of 3.4% of Gross Domestic Product (South African Social Security Agency (SASSA, 2020a). Social spending in South Africa is widely documented to be relatively well-targeted towards the poor, which is largely attributable to the use of means testing as a targeting device (Van der Berg, 2014).

Table 1 provides information regarding the evolution of the number of grants distributed by grant type over the last decade. The CSG constitutes the largest grant in the system in terms of number of grants distributed, accounting for 71% (or nearly 13 million) of total grants distributed in 2019/20. As of the end of June 2020, more than three in every five children (64.2%) in South Africa had a caregiver receive a CSG on their behalf.[2] The grant's large take-up is largely attributable to gradual increases in the age eligibility threshold and a less stringent means test. The overwhelming majority of CSG recipients (and every other grant type with the exception of the War Veteran's Grant) are women. As of the end of June 2020, of the 7.2 million CSG recipients (not beneficiaries), just 166 000 (or 2.3%)

[2] Based on data from SASSA (2020a) of nearly 13 million CSGs distributed, and StatsSA's 2020 mid-year population estimate of just under 20 million children under the age of 18 years.

were men (SASSA, 2020a). The Older Persons Grant (OPG, formerly the Old Age Pension) and Disability Grant (DG, the only grant intended for working-age adults – until the introduction of the COVID-19 grant) were the second and third largest grants, collectively accounting for more than one in every four recipients. More than one in every two South Africans live in a household that receives income from either the CSG or OPG (Bassier et al., 2021). Although both the OPG and DG are means-tested, the benefits are more than four times larger than the CSG.

Table 1: Distribution of social grants by grant type, 2009/10 versus 2019/20.

	2009/10			2019/20			
	Monthly amount (nominal Rands)	Thousands	% of total	Monthly amount (nominal Rands)	Thousands	% of total	Growth in recipients (%)
Child Support Grant	240	9 381	68.08	440	12 777	71.00	36.20
Older Persons Grant*	1 010	2 491	18.08	1 860	3 655	20.31	46.73
Disability Grant	1 010	1 299	9.43	1 860	1 058	5.88	-18.55
Foster Care Grant	680	489	3.55	1 040	350	1.94	-28.43
Care Dependency Grant	1 010	119	0.86	1 860	155	0.86	30.25
Total		13 779	100.00		17 996	100.00	30.60

Source: National Treasury (2011, 2020). Authors' own calculations.
*Notes: [1] * Includes War Veterans' Grant recipients whose grant amounts to R1 880 in 2019/20 and R1 030 in 2009/2010, for the 2019/20 financial year the monthly amount here refers to that for individuals between 60 and 75 years of age, and the Older Persons Grant is R1 880 for individuals over 75 years of age. [2] Recipients per grant may not sum to total recipients due to rounding. [3] Grant-in-Aid and Social Relief of Distress grant recipients are excluded here.*

Despite the relatively comprehensive reach of South Africa's social safety net through social assistance, there are still large holes in the net with little provision for the working-aged unemployed (Moore and Seekings, 2019). This is rooted in the fact that, as in Latin America and elsewhere, the structure of South Africa's social protection system relies on the assumption that only 'dependent' categories (such as the elderly, disabled, and children) are in need of support. Prime-aged, able-bodied individuals are presumed to be able to support themselves through the labour market and have therefore been excluded from receiving social assistance (Ferguson, 2015). However, such a view neglects the widespread, structural unemployment which plagues South Africa. As of the fourth quarter of 2020, nearly three in every four (72% or approximately 5.2 million) of the work-seeking unemployed have been so for more than a year.[3] In this light, the introduction of the special COVID-19 grant has played an important role in addressing this gap through targeting the working-aged unemployed population.

Following the onset of the pandemic, the South African government acted swiftly to introduce a national lockdown shortly followed by a package of targeted relief measures amounting to over R500 billion (or approximately 10% of GDP) of which R50 billion was initially allocated to an expansion of social assistance. Initial economic relief measures of government primarily focused on tax-registered individuals and firms in the formal sector. However, there were several vocal calls for the expansion of social assistance to support low-income households (Bhorat et al., 2020). These calls largely advocated for specifically supplementing the CSG on the intensive margin (i.e. increasing the amount of an existing cash transfer). Analysis using pre-crisis survey data suggested that in the absence of such targeted interventions, the extreme poverty rate amongst vulnerable households may have almost tripled.[4]

The realised expansion of social assistance took the form of top-ups to the amounts of every existing social grant as well as the introduction of the special COVID-19 grant for an initial period of six months. The latter grant was later extended to January 2021, and later again to April 2021. Table 2 presents

[3] Own calculations using Statistics South Africa's 2020 Quarter 4 Quarterly Labour Force Survey microdata.
[4] https://theconversation.com/south-africa-can-and-should-top-up-child-support-grants-to-avoid-a-humanitarian-crisis-135222.

an overview of these changes to the system. With the exception of the CSG, every existing grant was increased on the intensive margin by R250 per month (equivalent to a relative increase of 13% - 24%) from May to October 2020. On the other hand, the CSG was increased by R300 *per grant* for May (a nearly 70% increase attributable to a relatively low pre-COVID-19 level of R440) but R500 *per caregiver* (regardless of the number of eligible children) from June onwards. As such, the benefit of this chosen policy varies by a primary caregiver's number of eligible children. Although caregivers with one child will benefit relatively more from June relative to May, those with two or more children benefit relatively more in May relative to June onwards. Köhler and Bhorat (2020) however show that the per-child CSG top-up is more pro-poor than the per-caregiver top-up, but only marginally, primarily because more than two-thirds of recipient households receive more than one CSG. Despite this, the authors also show that the per-child top-up is substantially more expensive than the chosen policy. As such, this decision by the Department of Social Development was presumably taken partly because it was accompanied by the introduction of the new COVID-19 grant as well as increases to all other existing grants.

Table 2: Changes to South Africa's system of social grants, May to October 2020.

Grant	Pre-COVID-19 amount (Rands per grant per month)	Absolute (Rands per grant per month) and relative (%) increase		COVID-19 amount(Rands per grant per month, unless indicated otherwise)	
		May 2020	June-October 2020	May 2020	June-October 2020
Older Persons Grant*	1 860	250 (13.44%)	250 (13.44%)	2 110	2 110
War Veterans Grant	1 880	250 (13.30%)	250 (13.30%)	2 130	2 130
Disability Grant	1 860	250 (13.44%)	250 (13.44%)	2 110	2 110
Care Dependency Grant	1 860	250 (13.44%)	250 (13.44%)	2 110	2 110
Foster Child Grant	1 040	250 (24.04%)	250 (24.04%)	1 290	1 290
Child Support Grant	440	300 (68.18%)	500 per caregiver	740	440 per grant + 500 per caregiver
COVID-19 Grant**	NA	NA	NA	350	350

Source: Government Gazette No. 43300 dated 9 May 2020. Authors' own compilation.
*Notes: [1] * The grant amount of R1 860 is for individuals aged 60 to 75 years, which increases to R1 880 for individuals older than 75 years of age. [2]* ** COVID-19 grant later extended to April 2021.

By simulation, Bhorat et al. (2021) find that the chosen social assistance policy appears to cost more and is slightly less progressive relative to only increasing the CSG by R500 per grant, however it brings many previously unreached households into the system through the introduction of the COVID-19 grant, ultimately leading to the largest reduction in poverty over six months. Similarly, Bassier et al. (2021) found that the expansion of the CSG is complimentary to the introduction of the COVID-19 grant, and that "this combined policy intervention performs best out of the options considered". In practice however, there were both initial and further delays in the processing of applications and payment of the COVID-19 grant, largely owing to the setting up of relevant processes and systems, the late verification of recipient banking details, and issues which SASSA experienced in gaining access to the correct databases from other state organisations for verification purposes (Auditor-General, 2020). Despite these delays, payments of the COVID-19 grant began towards the end of May 2020, and by March 2021 the state had spent nearly R20 billion distributing the grant to over 6 million previously unreached individuals (SASSA, 2021).

3. Data

3.1. The National Income Dynamics Study: Coronavirus Rapid Mobile Survey (NIDS-CRAM)

For our descriptive analysis, we make use of data from the latest (at the time of writing, third) wave of the NIDS-CRAM, conducted via Computer Assisted Telephone Interviewing (CATI) in the preferred South African language of the respondent from 2 November to 13 December. The NIDS-CRAM is a broadly representative, individual-level panel survey which started with 7 000 South African adults that will be repeated over several months. Conducted as a collaborative research project by several South African universities, the aim of the survey is to provide frequent, representative data on key socioeconomic outcomes in South Africa during the COVID-19 pandemic and national lockdown. The survey instrument includes a wide array of questions on income and employment, household welfare, and COVID-19-related knowledge and behaviour.

In order to be representative while simultaneously adhering to public health protocol and lockdown regulations, the mobile phone numbers of existing sample participants needed to be obtained. In this light, the NIDS-CRAM sample frame consists of individuals resident in South Africa, aged 18 years or older at the time of fieldwork in April 2020, and who were surveyed in Wave 5 of the National Income Dynamics Study (NIDS) conducted in 2017.[5] The NIDS is a nationally representative, panel, face-to-face household survey conducted approximately every two years from 2008 to 2017 and has followed the same 28 000 South African individuals over five waves. Considering attrition across the NIDS-CRAM panel, of the 7 073 individuals who were successfully interviewed in Wave 1, 5 676 were successfully interviewed in Wave 2 and 4 508 in Wave 3. Due to the roughly 19% attrition between he first two waves, the sample was replenished with a top-up sample of 1 084 individuals, resulting in a final Wave 3 sample of 6 130 observations. Because individuals who attrite tend to be systematically different to individuals who remain in the panel, all estimates for all periods are weighted using the relevant sampling weights and account for the NIDS-CRAM complex survey design to address non-response and ensure representativity.

3.2. Representivity of the NIDS-CRAM

We believe our estimates come with important caveats due to unavoidable imprecision that render them still approximations. We discuss these caveats here. First, it is important to note that because the NIDS-CRAM sample is drawn from a representative sample of individuals in NIDS Wave 5 (conducted in 2017), the weighted estimates are not necessarily representative of the South African adult population in 2020. Rather, the weighted NIDS-CRAM estimates are only representative of the outcomes in 2020 of those aged 15 years and older in 2017 who were followed up 3 years later – hence ‘broadly’ representative. Second, because respondents were surveyed telephonically and that the survey instrument is substantially shorter (and thus less detailed) than face-to-face household surveys, caution should be exercised when making comparisons between the NIDS-CRAM and alternative household surveys. Third, the NIDS-CRAM is an individual-based survey as opposed to being household-based, which presents complications for deriving household-level variables from individual-level variables, unless explicitly included in the survey instrument. There remain, however, important advantages of the NIDS-CRAM data that make it incredibly valuable for understanding the current context in South Africa. For instance, because the survey is designed as a panel, it can provide a substantial amount of information about the dynamics of sampled individuals as the pandemic and lockdown unfolds. At the time of writing there was no comparable existing dataset which can be used

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[5] Sample members in the NIDS could be Continuing Sample Members (CSMs) or Temporary Sample Members (TSMs). CSMs were interviewed in every wave of the NIDS, whereas TSMs were interviewed in a given wave only if they were a co-resident of a CSM.

to analyse these dynamics. The interested reader is referred to Ingle et al. (2021) for more information pertaining to the survey design.

3.3. Social grants data in the NIDS-CRAM

The NIDS-CRAM data allows us to estimate personal receipt of any grant, as well as household-level[6] receipt of select grants. On the personal-level, individuals were asked if they personally received any social grant in a given month and if so, which grant(s) they received. From Wave 2, an additional item pertaining to the special COVID-19 grant was included; that is, whether or not individuals had applied for the grant and what the outcome of their application was (no explicit reference period). This was a notable addition given that it allows us to analyse not only variation in receipt of this grant, but also variation in the probability of applying for the grant and experiencing either a successful, unsuccessful, or pending application. On the household-level, individuals were asked how many people in their household received the COVID-19 grant, the CSG, and the OPG in a given month. If they did not report an exact number, they were asked if anyone in their household received the relevant grant.[7] It is important to note that the estimates of receipt for some grants in the data appear to be lower than that of official SASSA records. We do not discuss these estimates here, but the interested reader is referred to Köhler and Bhorat (2020) for a detailed discussion. We encourage the reader to keep these concerns in mind throughout the paper; however, this need not be of critical concern for our purposes here given that estimates for COVID-19 grant receipt closely match that of official records.

3.4. Adjustments to household income data

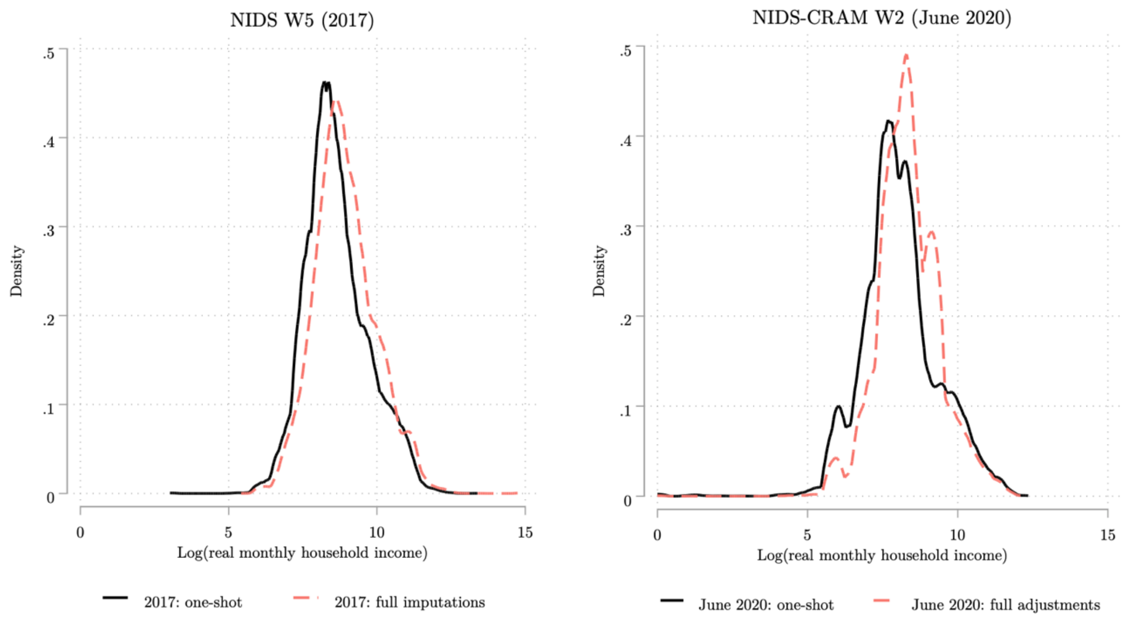
The NIDS-CRAM includes data from a single (or 'one-shot') question on monthly after-tax household income in April 2020 for Wave 1 and June 2020 for Wave 2. The relevant question was not included in Wave 3, and as such we make use of the June 2020 household income data when relevant throughout this paper. The 'one-shot' nature of this question has important implications for the accuracy of the raw household income data. As such, we make several adjustments to the NIDS-CRAM household income data and discuss these adjustments here. First, unlike NIDS-CRAM, the NIDS has both a 'one-shot' question as well as individual household income item-responses that can be aggregated. Importantly, the distribution of 'one-shot' household income is lower than the distribution of household income aggregated from individual items. As shown in Figure 1 using the NIDS Wave 5 data for adults in the NIDS-CRAM sample, the left panel shows that the distribution of 2017 one-shot household income is substantially lower than the distribution of 2017 household income derived from the individual items.[8] Second, every respondent in NIDS-CRAM was asked about their household income, whereas in the NIDS, the oldest women or most knowledgeable person in the household (where possible) were asked. There is also no NIDS-CRAM household roster identifying individuals who are in the same household. These first two characteristics of the data may imply that the NIDS-CRAM household income data is underestimated.

[6] For household-level receipt, given that the NIDS-CRAM is not a household-based survey, we cannot directly observe whether sampled individuals co-reside with other sampled individuals who report being grant recipients. Rather, the questionnaire includes a question on how many people in the respondent's household received a particular grant in the reference month.

[7] If individuals reported that they did not know the number, they were then asked if at least one person received the grant. This option allows us to include these observations being categorized as those who "live in COVID-19 SRD recipient households". We can also analyse how many of these grants are received within each household. Although imprecise, we choose to assume such reports of "I don't know, but at least one" imply one person in the household receives the grant. This affects 53 observations.

[8] Every observation in the NIDS-CRAM Wave 2 data had non-missing household income data in the NIDS Wave 5 data. Furthermore, most (75.3%) report living in the same household at the time of the NIDS-CRAM Wave 2 survey as they did when they were surveyed for NIDS Wave 5 in 2017.

Figure 2: Distribution of real monthly household income in 2017 and June 2020: one-shot items versus full imputations and adjustments



Source: NIDS Wave 5 and NIDS-CRAM Wave 2. Authors' own calculations.
Notes: [1] Samples in both waves are restricted to NIDS-CRAM Wave 2 respondents. [2] NIDS Wave 5 data are weighted using relevant post-stratification weight, while NIDS-CRAM Wave 2 data are weighted using (i) the relevant sampling weight for the one-shot item, and (ii) computed bracket weights for the adjusted item.

Third, a significant number of respondents (36.9% in Wave 2) did not report household income. Such missing data may not be missing at random, resulting in biased estimates (Ardington, 2020). We estimate a probit model through Maximum Likelihood Estimation (MLE) to predict the probability of a sampled individual having missing household income data and find that individuals who live in larger households are statistically significantly more likely to have missing household income data (not shown here but available upon request). If respondents did not report household income in monetary terms, they were requested to report the bracket within which their household income could be categorised. Of the respondents who did not report their household income in monetary terms in Wave 2, 57.6% responded with bracket information.

To address these issues, we make several adjustments. First, for individuals who reported bracket information, we assign the within-bracket median household income in monetary terms. Second, we use the limited earnings data available to replace household income values with a lower-bound estimate (constructed as the sum of three individual items: household-level grant receipt, personal grant receipt, and individual earnings) if the latter exceeded the former. Third, there may be selection into responding with bracket information. Simply ignoring the bracket responses incorrectly ignores responses that may come from the top end of the income distribution. To address this, we construct bracket weights similar to those constructed in the Post-Apartheid Labour Market Series (PALMS) version 3.3 dataset.[9] These are calculated as the inverse of the probability of responding with an actual Rand amount in a particular bracket, multiplied by the sampling weight for each individual. This process weights up individuals whose reported incomes are in brackets where the proportion of actual monetary responses are lower, relative to brackets where such a response is high.[10] The results of the aforementioned two adjustments and the use of bracket weights are summarised in the right panel

[9] Available here: https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/434
[10] For example, if we observe 95% of individuals within the bracket R1 000 - R2 000 gave actual Rand responses, then these individuals will get revised weights equal the sampling weight divided by 0.95. On the other hand, individuals within the bracket R20 000 – R30 000 where 35% gave actual Rand responses will get revised weights equal the sampling weight divided by 0.35. The latter will be weighted up relative to individuals in the lower bracket.

of Figure 1 above. Similar to NIDS, it is clear that the distribution of one-shot household income is substantially lower than the distribution of imputed household income in June 2020. These adjustments resulted in a significant reduction of the sample with missing household income data from 2 094 observations (36.9% of the sample) to 888 observations (15.6% of the sample). We encourage the reader to keep these adjustments in mind. All income data were inflated to January 2021 Rands.

4. Descriptive results

4.1. Between-group variation in receipt

We estimate that six months into its roll-out in October 2020, the COVID-19 grant reached over 5.2 million individuals directly, or nearly 11.3 million individuals indirectly if one considers the grant as a source of household income for all residents. We observe significant heterogeneity in receipt across varied groups of individuals. By gender, nearly two in every three recipients (63%) were male. In this light, the grant has brought a large, previously unreached group of individuals into the system – unemployed men. At the household-level on the other hand, a statistically similar number of women and men (5.9 million and 5.4 million respectively – a statistically insignificant difference) lived in a household which received the grant. Despite a similar level of household-level receipt, the observed gender disparity in personal receipt is concerning considering that in the same month, women accounted for the majority (60%) of the unemployed by the broad definition. This gender gap in receipt is likely explained by the COVID-19 grant's eligibility criterion that other grant recipients are not eligible – most of whom are women (85% as of December 2020). Arguably, unemployed women who receive the CSG on behalf of a child have been unfairly excluded from receiving the COVID-19 grant as a means of support for themselves, disadvantaged by their childcare (Casale and Shepherd, 2020). It has therefore been argued that the COVID-19 grant ought to be allowed to be held concurrently with the CSG as a means of targeting support to unemployed men and women. At the time of writing, this amendment had yet to be addressed by government.

Table 3: Variation in COVID-19 grant receipt by demographic group, October 2020

	Personal receipt		Household receipt	
	Absolute	% of total recipients	Absolute	% of total recipients
Total	5 240 858	100.00	11 286 416	100.00
Gender				
Male	3 315 276	63.26	5 406 987	47.91
Female	1 925 582	36.74	5 879 429	52.09
Age				
18-34	3 128 211	59.69	5 463 289	48.41
35-59	2 029 582	38.73	4 787 647	42.42
60+	83 065	1.58	1 035 481	9.17
Population group				
African/Black	4 816 849	91.91	10 328 543	91.51
Coloured	274 883	5.24	678 601	6.01
Indian/Asian	106 056	2.02	163 620	1.45
White	43 070	0.82	115 652	1.02
Education				
Up to primary	486 250	9.29	1 776 831	15.86
Up to secondary	2 504 460	47.83	4 625 425	41.3
Complete secondary	1 255 463	23.98	2 546 034	22.73
Tertiary	989 864	18.9	2 252 157	20.11

Authors' own calculations. Source: NIDS-CRAM Wave 3.
Notes: [1] Estimates weighted using relevant sampling weight after accounting for complex survey design. [2] Household receipt refers to living in a household with at least one COVID-19 grant recipient.

Considering other demographic characteristics, most COVID-19 grant recipients are young (60%), African/Black (92%), and have a highest level of formal education up to matric (81%). Similar relative levels hold when considering the household-level receipt. The observed high levels of receipt amongst the youth is particularly notable, considering that the group accounts for more than half (55%) of the broad unemployed.

As previously stated, the COVID-19 grant was intended to provide support to unemployed adults who received no other form of government assistance. As a simple analysis of targeting efficacy, in Table 4 we analyse the extent of receipt across varying labour market groups. We find that the majority (nearly 60%) of the grant's recipients in October 2020 were non-employed.[11] The observation that the remainder of recipients were employed need not be of major concern of inclusion error, considering that the majority of employed recipients were informally employed – proxied by them not have a written contract with their employer (70%) or being engaged in casual work or self-employment (76%).[12] Furthermore, by exploiting the panel nature of the data, we can examine variation in receipt amongst job-losers, job-retainers, job-gainers, and the chronically non-employed. We estimate that the highest share of receipt was accounted for by the chronically non-employed (42%) – one indicator of targeting efficacy. On the other hand, just over 14% of recipients were job-losers, and over one in every four (26%) job-retainers. We emphasise again that the observed receipt amongst the employed here need not be interpreted as inclusion error; rather, the grant seems to have provided relief to both the unemployed and the informally employed, the latter of which is by nature difficult to effectively target.

Table 4: Variation in COVID-19 grant receipt by labour market status, October 2020

	Personal receipt		Household receipt	
	Absolute	% of total	Absolute	% of total
Labour market status				
Employed	2 157 628	41.53	4 789 405	42.94
Non-employed	3 037 573	58.47	6 365 187	57.06
Labour market transition				
Job-losers	749 576	14.11	1 474 519	12.97
Chronically non-employed	2 232 885	42.03	4 860 577	42.76
Job-retainers	1 385 263	26.07	3 279 994	28.86
Job-gainers	945 295	17.79	1 751 408	15.41

Authors' own calculations. Source: NIDS-CRAM Waves 1 and 3.

Notes: [1] Estimates weighted using relevant sampling weight after accounting for complex survey design. [2] Panel estimates weighted using sampling weight which excludes the Wave 3 top-up sample. [3] Household receipt refers to living in a household with at least one COVID-19 grant recipient. [4] Job-losers, gainers, retainers, and the chronically non-employed derived by using data on labour market status in February 2020 (pre-lockdown) and October 2020 (during level 1 lockdown).

4.2. Modelling successful receipt conditional on application

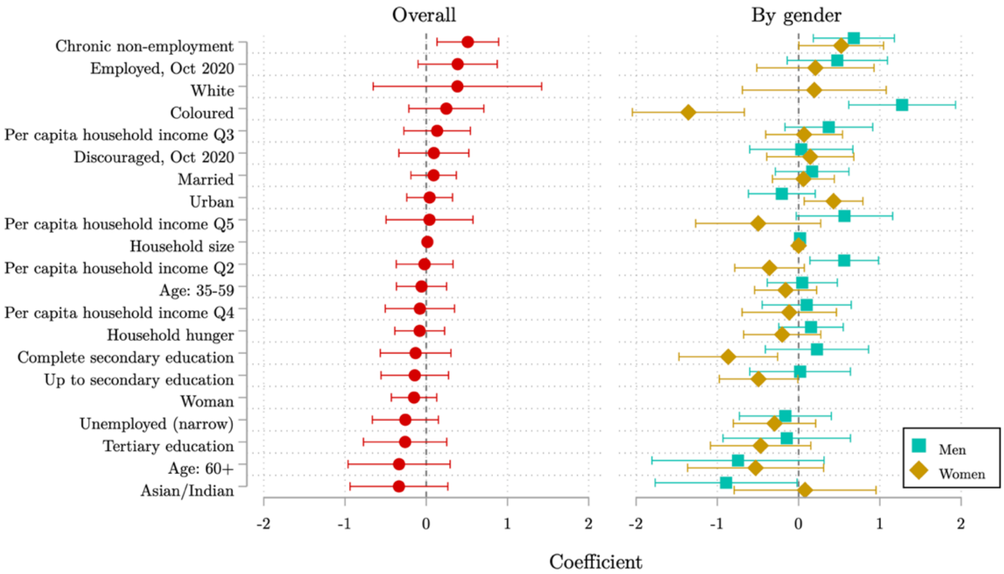
Considering the above observed variation in receipt of the COVID-19 grant across groups of individuals of varying demographic and labour market characteristics, it is plausible that such variation in receipt can be explained by other characteristics. This begs the question: what are the determinants of an individual experiencing a successful COVID-19 grant application, conditional on applying? To analyse this, we use Maximum Likelihood Estimation (MLE) to estimate several multivariate probit models of the likelihood of experiencing a successful application, conditional on applying, on a vector of observable covariates including age, gender, race, labour market status, and per capita household income. The results are interpreted as a change in the probability of receiving the grant (conditional on applying) for a given individual/household characteristic, assuming all else constant. The complete results of these models are presented in Table A1 in the Appendix, while we summarise the results in a coefficient plot in Figure 3 below.

[11] We utilise non-employment as a broad category here as opposed to unemployment by either the narrow or broad definition to include the searching job-seekers, the discouraged, as well as the economically inactive.

[12] Due to data limitations, we are unable to identify the informally employed in any alternative way.

It is clear that conditional on applying, certain individuals are more likely than others to obtain a successful COVID-19 grant application. Notably, we find that chronically non-employed individuals were 51% more likely to experience a successful grant application relative to other labour market groups, more so for men (68%) but also for women (53%). We do not observe any significant correlation between successful receipt and individual characteristics such as age, gender, race, highest level of education, marital status, household hunger, or household income overall. However, when we separately estimate our models by gender, we find significant associations between successful receipt and two distinct characteristics amongst not men, but women. Specifically, women who reside in urban areas were more than 43% more likely to experience successful receipt than women in rural areas. Lastly, we find a steep, negative education gradient, with women with primary-level education or less being significantly more likely to experience successful receipt than those with an incomplete or complete secondary education.

Figure 3: Coefficient plot of probit model estimates for the probability of successful receipt of the COVID-19 grant conditional on applying



Authors' own calculations. Source: NIDS-CRAM Waves 1 and 3.
Notes: [1] Estimates weighted using relevant panel sampling weights which exclude the Wave 3 top-up sample, after accounting for complex survey design. [2] Estimates of average marginal effects (AME) presented and obtained after probit estimation. [3] Dependent variable expressed as a binary variable equal to one if a respondent reports having successfully applied for the COVID-19 grant at the time of the survey in November/December 2020, and zero if their application was rejected. [4] 95% confidence intervals presented as capped spikes. [5] All models additionally control for province fixed effects which are omitted for brevity. [6] Chronic non-employment refers to being non-employed in February and October 2020. [7] Reference groups for categorical variables as follows: Economically inactive, African/Black, Per capita household income Q1, Age: 18-34, Up to primary education, Men. [8] Complete model estimates presented in Table A1 in the Appendix.

4.3. Progressivity of the COVID-19 grant

Before analysing the distribution of the COVID-19 grant amongst individuals of varying levels of household income, we first briefly examine the adequacy of the grant relative to other existing grants – the CSG and OPG. Overall, the R350 per month COVID-19 grant is equivalent to just under 40% of the median per capita monthly household income in June 2020 – slightly lower than the R440 CSG (50%) and R1 860 OPG (211%). Although on aggregate the transfer amount may seem inadequate, below we show that the COVID-19 grant is relatively pro-poor, so it is important to consider adequacy across the household income distribution. Expectedly, the adequacy of the grant is larger for poorer households relative to richer ones. Specifically, the grant is nearly 1.4 times that of the median per capita monthly household income amongst the poorest 20% of households, but just 6% of that of the richest 20%. Despite this, the grant of course exhibits lower adequacy relative to other grants across the whole household income distribution.

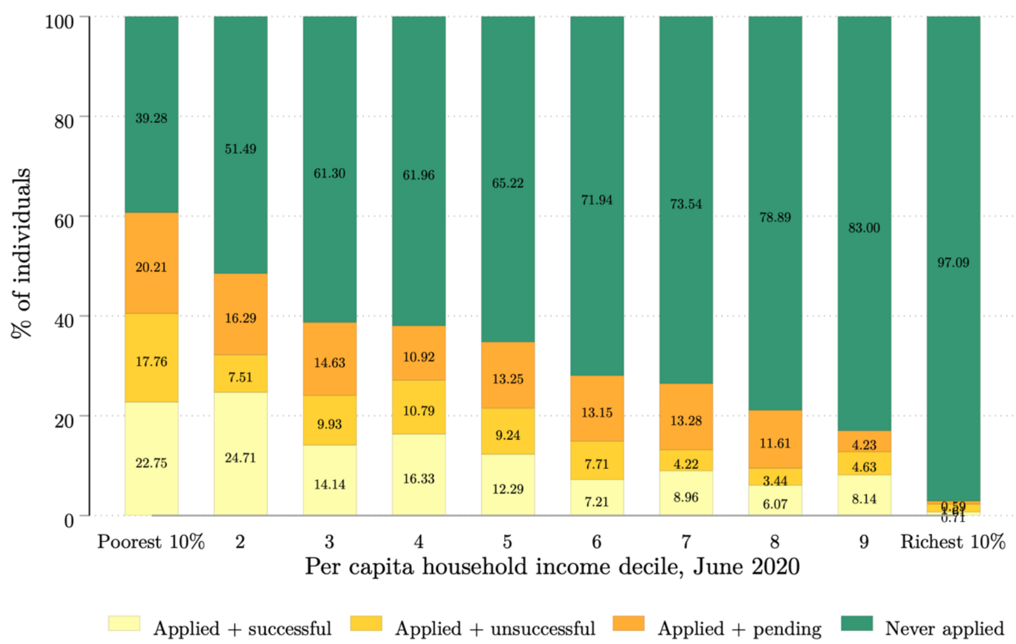
Table 5: Adequacy ratios of the COVID-19 grant against other grants by household income quintile, June 2020

Per capita household income quintile	Median per capita monthly household income (Jan 2021 Rands)	Adequacy ratios (%)		
		COVID-19 grant	Child Support Grant	Old Age Penson
1	256.09	136.67	171.81	726.30
2	503.22	69.55	87.44	369.62
3	883.88	39.60	49.78	210.43
4	1 843.86	18.98	23.86	100.88
5	5 736.47	6.10	7.67	32.42
Total	880.96	39.73	49.95	211.13

Authors' own calculations. Source: NIDS-CRAM Wave 2.
Notes: [1] Estimates weighted using computed bracket weights. [2] Household income expressed on a monthly, after tax and deductions basis in January 2021 Rands. [3] Adequacy ratios computed as the ratio between a given grant amount and median per capita household income, expressed in percentages. [4] Grant values as follows: COVID-19 grant = R350, Child Support Grant = R440, Old Age Pension = R1 860.

We find that application for and receipt of the COVID-19 grant has been relatively pro-poor. We estimate that in November/December 2020, of the 11.9 million individuals who reported applying for the grant, over 6 million (51%) were successful. The remaining 5.9 million individuals either report a pending (1.5 million) or rejected (4.4 million) application. As shown in Figure 4, most individuals who applied for the grant, and were successful in their application, are based in the lower and middle parts of the June 2020 household income distribution. Conditional on applying, 23% of individuals in the poorest 10% of households were successful, in contrast to 0.71% in the richest decile. Pending applications do not vary considerably across the distribution, and nearly all individuals in the richest decile (97%) never even applied, in contrast to 40% of those in the poorest decile.

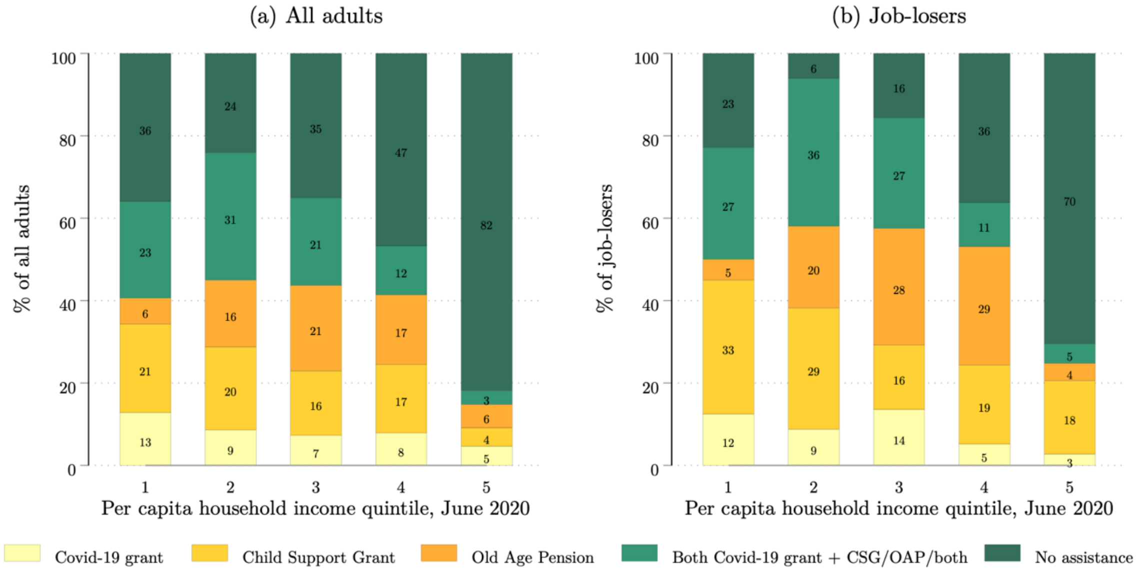
Figure 4: Application for the COVID-19 grant across the household income distribution, November/December 2020



Authors' own calculations. Source: NIDS-CRAM Waves 2 and 3.
Notes: [1] Estimates weighted using computed bracket weights.

In Figure 5, we investigate the distribution of social assistance (grant) receipt across the household income distribution for (1) all adults and (2) job-losers at the household-level.[13] About 80% of job-losers (70% of all adults) lived in a household which received some form of social assistance in October 2020, and this support appears relatively progressive. Nearly 80% of job-losers in the poorest 20% of households received support, in contrast to 30% of those in the richest 20%. Amongst those job-losers in the poorest households, support came largely through the COVID-19 grant and CSG. A third of these individuals lived in a CSG household; however, a further 27% lived in a household which received a combination of the COVID-19 grant and CSG or OPG or both, and a further 12% lived in a COVID-19 grant household.

Figure 5: Household-level receipt of social assistance in October 2020 across the household income distribution

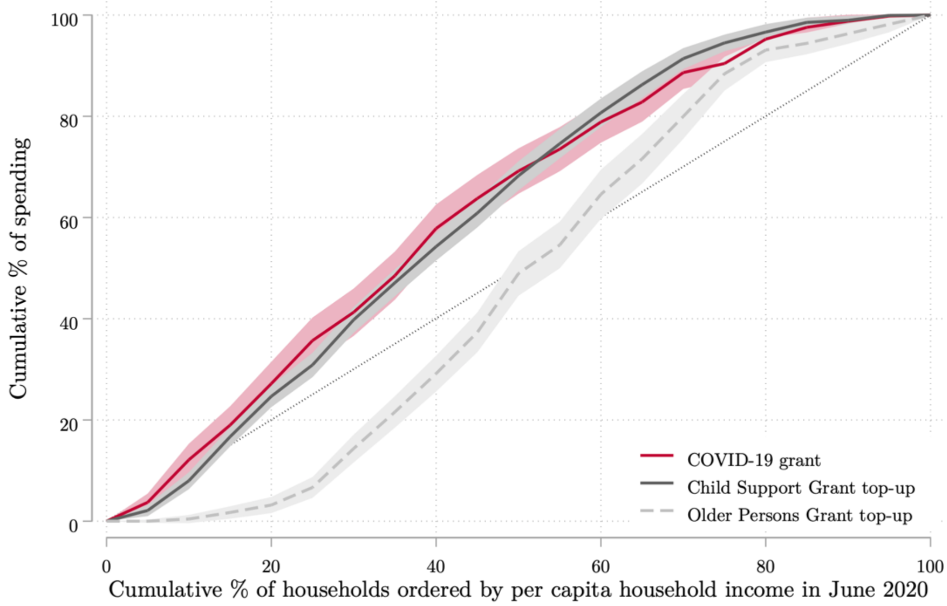


Authors' own calculations. Source: NIDS-CRAM Waves 1,2, and 3.
Notes: [1] Estimates weighted using computed bracket weights.

In order to compare the progressivity of the COVID-19 grant relative to that of other grants, in Figure 6 we present several estimated concentration curves of COVID-19 grant expenditure against that of the CSG and OPG top-ups at the household level. That is, we plot the cumulative share of expenditure for each grant against the cumulative share of households ordered from poorest to richest. Again, we find that COVID-19 grant expenditure is pro-poor. About 80% of spending on the COVID-19 grant in October 2020 was accounted for by the poorest 60% of households. Additionally, we find that the grant exhibits a level of progressivity similar to that of the CSG – the grant with the lowest income means test.

[13] Job-losers defined as those who were employed in February 2020 (pre-lockdown) but not in October 2020 (during lockdown).

Figure 6: Concentration curves of COVID-19 grant expenditure in October 2020 against other grant top-ups



Authors' own calculations. Source: NIDS-CRAM Waves 2 and 3.
Notes: [1] Estimates weighted using computed bracket weights. [2] Estimates refer to grant income received by grant recipient household members in total. [3] Child Support Grant top-up equivalent to R500 per caregiver in June 2020; due to data limitations on the number of caregivers per household, our estimates assume one caregiver (and therefore one top-up) per household. [4] Older Persons Grant top-up equivalent to R250 per grant in June 2020.

4.4. Poverty and inequality effects

To adequately estimate the effects of the COVID-19 grant on an outcome of interest, one would need to use data from a randomised experiment where the grant was allocated to a treatment group of recipients and a comparable control group of non-recipients – simply put. Alternatively, subject to several conditions, researchers may use quasi-experimental econometric techniques on observational data to estimate the effects of grant receipt. We leave this work for the future, but to explore poverty and inequality effects in this descriptive paper, we make use of fiscal incidence analysis (FIA), which is typically used to examine the distributional impacts of taxes and transfers. Essentially in this case, FIA consists of allocating public spending (cash transfers in this case) to individuals so that one can compare incomes excluding the transfer with incomes including the transfer. An important assumption of this approach then is that, in the counterfactual scenario, of zero COVID-19 grant receipt, households would exhibit their reported household incomes minus their income from the COVID-19 grant. Of course, this need not be the case, given that households may have received incomes from other sources in the absence of COVID-19 grant income. Additionally, because household income in the NIDS-CRAM is derived from a one-shot question, it is likely under-reported as discussed in Section 3.4, so subtracting COVID-19 grant income may be artificially large, so in this case the difference between actual and non-COVID-19 grant household incomes may be overstated, as would the poverty-reducing effect (Jain et al., 2020). In this light, the poverty and inequality effects provided here may be biased to some extent, and are thus treated as tentative and descriptive in nature.

As shown in Table 6 and Figure 7, we find that the COVID-19 grant played a significant role in reducing poverty, particularly amongst the poorest individuals. Specifically, using StatsSA's Food Poverty Line (FPL), we estimate that the grant reduced poverty by 2 percentage points, or 5.3%, relative to the counterfactual. In other words, in the absence of the grant, we estimate that poverty would have been

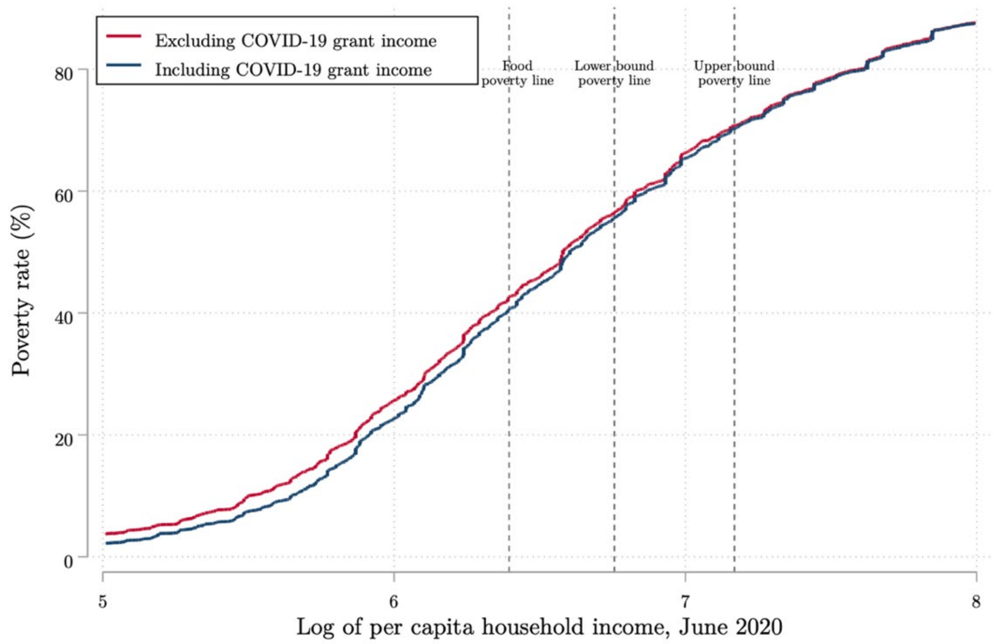
2 percentage points higher. This is in line with Jain et al.'s (2020) findings who employ a similar methodology. When using higher poverty lines, the poverty-reducing effect remains negative but expectedly becomes smaller, reflecting the progressivity of the grant. Considering household income inequality, we find that the grant reduced inequality by 1.3% - 6.3% relative to the counterfactual, depending on the inequality measure. Despite these observed positive effects on both poverty and inequality, it is important to note that both outcomes remain high, regardless of the inequality measure or poverty line used.

Table 6: *Ex ante* poverty and inequality effects of the COVID-19 grant, June 2020

	Household income excl. COVID-19 grant	Household income incl. COVID-19 grant	Change in inequality or poverty (%)
Inequality measures			
Gini coefficient	0.693	0.684	-1.282
Theil index	1.036	1.010	-2.447
Atkinson index	0.634	0.591	-6.726
Poverty measures			
StatsSA FPL (%)	38.430	36.380	-5.334
StatsSA LBPL (%)	50.040	49.250	-1.579
StatsSA UBPL (%)	62.010	61.570	-0.710

Authors' own calculations. Source: NIDS-CRAM Wave 2.
Notes: [1] Estimates weighted using computed bracket weights. [2] Per capita household income and poverty lines inflated to January 2021 Rands. [3] Poverty measures refer to the percentage of individuals who live in households with per capita household incomes less than the stipulated poverty line. [4] FPL = food poverty line of R598.74 per person per month, LBPL = lower bound poverty line of R859.72 per person per month, UBPL = upper bound poverty line of R1 297.77 per person per month. [5] Inequality aversion parameter of the Atkinson index = 1.

Figure 7: Cumulative density functions of per capita household income with and without COVID-19 grant income, June 2020



Authors' own calculations. Source: NIDS-CRAM Wave 2.
Notes: [1] Estimates weighted using computed bracket weights. [2] Household income and poverty lines inflated to January 2021 Rands. [3] Poverty lines as per the StatsSA 2020 poverty lines.

5. Quasi-experimental results

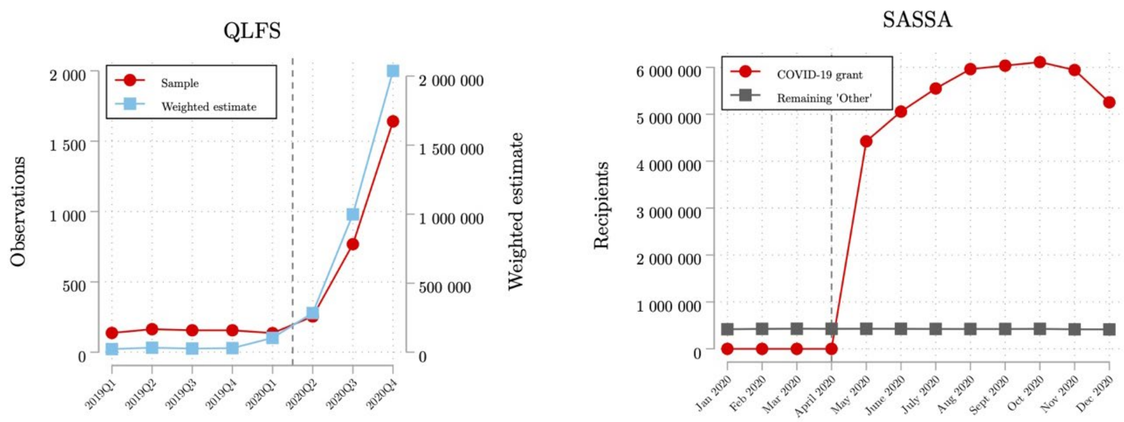
To the authors' best knowledge, research has yet to be conducted on the causal effects of receipt of the COVID-19 grant. An analysis on the effects of such receipt, particularly on labour market outcomes, may be of particular importance to policymakers, given that it relates to a common concern that social grant programs may discourage work. Although there is little to no systemic evidence that such programs discourage work amongst the working-aged in developing countries (Banerjee et al., 2017), developed countries (Marinescu, 2018), and South Africa for other existing grants (Woolard et al., 2011), it is plausible to believe the effects of the COVID-19 grant may differ because it is the first grant in South Africa to target the unemployed. In this section, we describe our identification strategy to estimate the causal effect of COVID-19 grant receipt on labour market outcomes by employing a quasi-experimental econometric technique on observational household survey data, outlined in more detail below.

5.1. Identification strategy

To estimate the causal effect of COVID-19 grant receipt, we make use of representative labour force data – the Quarterly Labour Force Survey (QLFS) – and employ a propensity score matched differences-in-differences (PSM-DiD) approach. Use of the NIDS-CRAM data here is inadequate given that the first wave was collected in the post-law period. In essence then, the causal effect is estimated by comparing outcomes between observationally comparable, non-employed COVID-19 grant recipients and non-recipients over time. This approach requires allocating sampled individuals into relevant treatment and control groups; that is, recipients and non-recipients of the grant. One issue here relates to the fact that the QLFS survey instrument does not include a question which specifically asks about receipt of the COVID-19 grant, but only the Child Support Grant (CSG), Foster Care Grant (FCG), Old Age Pension (OAP), and Disability Grant (DG) amongst the non-employed. However, the survey does include a question of receipt of 'other' welfare grants, which by process of elimination refers to the the War Veteran's Grant, Care Dependency Grant, Grant-in-Aid, or the COVID-19 grant. As presented in the left panel of Figure 8, the number of respondents who answered 'Yes' to this question increased substantially from the pre-law period (less than 100 observations in 2020Q1) to the post-law period (more than 1 500 observations in 2020Q4). These numbers are reflected by official administrative data from the South African Social Security Agency (SASSA) which, as shown in the right panel, which suggests that such an increase in 'other' grant recipients in the QLFS is most likely explained by the introduction of the COVID-19 grant, given that the number COVID-19 grant recipients increased from zero in April 2020 to 4 million – 6 million in the average month from May 2020 onwards, but the collective number of War Veteran's Grant, Care Dependency Grant, and Grant-in-Aid recipients was relative constant throughout 2020.[14]

[14] Figure 14 shows that although the QLFS and SASSA trends in recipients are similar, the magnitude of recipients in the latter is larger than the former. This is likely because COVID-19 recipients in the SASSA data refers to the number of recipients paid *for* a given month, but not necessarily *within* the same month. In the roll-out of the grant, there were discrepancies in this regard. For instance, SASSA (2020b) reports that R7.9 million was spent on the grant in May 2020, equivalent to nearly 23 000 recipients, despite 4.4 million recipients being eventually paid for May 2020.

Figure 8: **Number of 'other' social grant recipients over time, by dataset**



Author's own calculations. Source: QLFS 2019Q1 – 2020Q4 (StatsSA), SASSA (2020a), and SASSA (2020b).
Notes: [1] QLFS sample restricted to respondents who reported receipt of 'other' grants, which by process of elimination refers to the the War Veteran's Grant, Care Dependency Grant, Grant-in-Aid, or the COVID-19 grant. [2] QLFS estimates weighted using sampling weights. [2] COVID-19 recipients in the SASSA data refers to the number of recipients paid for a given month, but not necessarily within the same month.

Together with data on eligibility criteria, we argue that this item can be used to create a proxy variable which provides plausible identification of COVID-19 grant recipients in the post-law period. Specifically, we assign individuals to the treatment group if they report receipt of a 'other' grant and they do not receive any other social grant or UIF benefits (as per the eligibility criteria), and the control group if they neither receive a 'other' grant nor any other social grant or UIF benefit. Considering that the benefits of other social grants like the CSG and OAP were additionally increased during the post-law period, our approach of ensuring both treatment and control groups do not include recipients of any other grant attempts to account for this possible source of bias. The sample is restricted to the non-employed, given that items relating to grant receipt were only asked of this group in the survey. Furthermore, we only include individuals in the working-age population (15-64 years) who were not attending an education institution at the time of the survey. Given that payments of the COVID-19 grant were made from the end of May 2020, 2020Q1 and April and May in 2020Q2 serves as the pre-law period, and June in 2020Q2 to 2020Q4 the post-law period. Considering the distribution of COVID-19 grant receipt is non-random, we estimate the DiD on a propensity score matched (PSM) sample to address selection bias and obtain observationally comparable treatment and control groups. We further control for individual fixed effects (FE) to account for time-invariant observables and unobservables, given that changes to the QLFS interview mode have resulted in a longitudinal sample for 2020.

The PSM-DiD model is estimated using Ordinary Least Squares (OLS) as follows:

$$y_{it} = \beta_0 + \beta_1 Treatment_i + \beta_2 Post_t + \beta_3 Treatment_i \times Post_t + \beta_4 \boldsymbol{X}_{it} + \gamma_i + \varepsilon_{it},$$

where y_{it} is the outcome of interest for individual i in time period t, $Treatment_i$ is the binary grant receipt variable, $Post_t$ is a binary variable equal to one for the post-treatment period and zero otherwise, and ε_{it} is the regression error term. Given the panel nature of the data, standard errors are clustered at the individual-level. The applied PSM procedure to obtain the matched sample is as follows. Through Maximum Likelihood Estimation (MLE), we employ a logit model to estimate the probability of treatment on a vector of pre-treatment observable covariates as follows:[15] $Pr(z_i) \stackrel{\text{def}}{=} Pr(Treatment_i = 1 \mid \boldsymbol{X}_i)$. We then use the estimated coefficients to predict each observation's propensity score. Each observation in the treatment group is then matched to an observation in the

[15] As per DuGoff et al. (2014), the logit model is estimated as unweighted but the QLFS sampling weight is included as a covariate as it may contain important information pertaining to observations, especially considering the fact that StatsSA adjusted the sampling weights from 2020Q2 onwards to account for bias introduced by differences between contactable and non-contactable households.

control group using nearest-neighbour matching with a relatively small caliper of 0.02 (that is, observations are only considered a match if the difference in their estimated propensity scores is less than 0.02). The sample sizes of the relevant treatment and control groups for the PSM-DiD models are presented in Table 7, which expectedly shows two notable characteristics of the data: (i) the magnitude of the treatment group is considerably smaller in the pre-law period relative to the post-law period (despite the reduction of the QLFS sample from 2020Q2 onwards), and (ii) the matching approach results in the magnitude of the matched sample being smaller than the unmatched sample.

Table 7: Sample sizes of treatment groups, by period and matched sample

Sample:		Unmatched			Matched	
Period:	Pre	Post	Total	Pre	Post	Total
Control	18 459	16 631	35 090	1 983	1 253	3 236
Treatment	162	1 952	2 114	162	1 952	2 114
Total	18 621	18 583	37 204	2 145	3 205	5 350

Author's own calculations. Source: QLFS 2020Q1 – 2020Q4 (StatsSA).
Notes: [1] Propensity scores estimated using a logit model and nearest-neighbour matching with a caliper of 0.02.

Finally, we estimate the main specification above on the matched sample, weighting the regression using a constructed weight equal to the product of the PSM weight and QLFS sampling weight as suggested by DuGoff et al. (2014).[16] Even though PSM accounts for pre-existing observational differences between individuals in the treatment and control groups, and the matched DiD approach controls for pre-existing unobservable differences (under the parallel trend assumption) and time-variant observational differences, we further control for a vector of pre-existing individual-level characteristics, $\boldsymbol{X_{it}}$ to improve (i) the plausibility of the DiD identifying assumption and (ii) the efficiency of our estimates. Finally, we exploit the panel nature of the data to control for individual fixed effects (FE), represented by γ_i. β_3 is the main coefficient of interest, reflecting the estimated causal effect of COVID-19 grant receipt – the average difference in outcomes between recipients and non-recipients in the post-treatment period relative to the pre-treatment period.

The combination of FE, PSM, and DiD attempts to account for several sources of bias. Overall, the causal effect is estimated by comparing outcomes between observationally comparable, non-employed COVID-19 grant recipients and non-recipients over time. Given that the survey only included grant receipt items for the non-employed, the dependent variables of interest are restricted to this group's outcomes. As such, employment effects cannot be considered. Despite this, and although employment effects would serve as an important outcome, this analysis specifically estimates effects on the probability of job search – an arguably important outcome which speaks to the effects of the grant on combatting economic inactivity and enabling labour market participation.

5.2. Model results

The PSM-DiD model results of the estimated causal effects of COVID-19 grant receipt are presented in Table 8. Two outcomes are explored here: the probability of job search and the probability of wanting to work. The preferred estimates in models (6) and (8) are those which are restricted to the matched sample and control for a vector of covariates as well as individual FE's. The DiD estimate of interest in model (8) suggests that receipt of the COVID-19 grant increased the probability of job search by a notable amount. Specifically, the estimate suggests that receipt of the COVID-19 grant

[16] The PSM weight is a frequency weight defined as follows. For observations in the treatment group, the PSM weight = 1. For observations in the control group, the PSM weight = the number of observations in the treatment group for which the observation is a match. If a treatment observation does not have a match, the weight is set to missing, so the unmatched sample is automatically omitted from the regression.

increased the probability of job search by more than 25 percentage points relative to comparable non-recipients – significant at the 1% level. Importantly, the estimated effect does not appear to be a consequence of specification, given that similar estimates are obtained using the larger, unmatched sample or when individual FE's are not controlled for. This suggests that the COVID-19 grant has played an important role in reducing labour market inactivity and increasing participation. In 2020Q2, inactivity was 33% higher and the number of jobseekers over 40% lower than one year prior. In 2020Q4, however, inactivity decreased to being just 15% higher than one year prior, while the number of jobseekers recovered to pre-pandemic levels. Our results suggest that the COVID-19 grant played a significant role in this regard.

Table 8: **Difference-in-difference estimates of COVID-19 grant receipt on non-employed labour market outcomes**

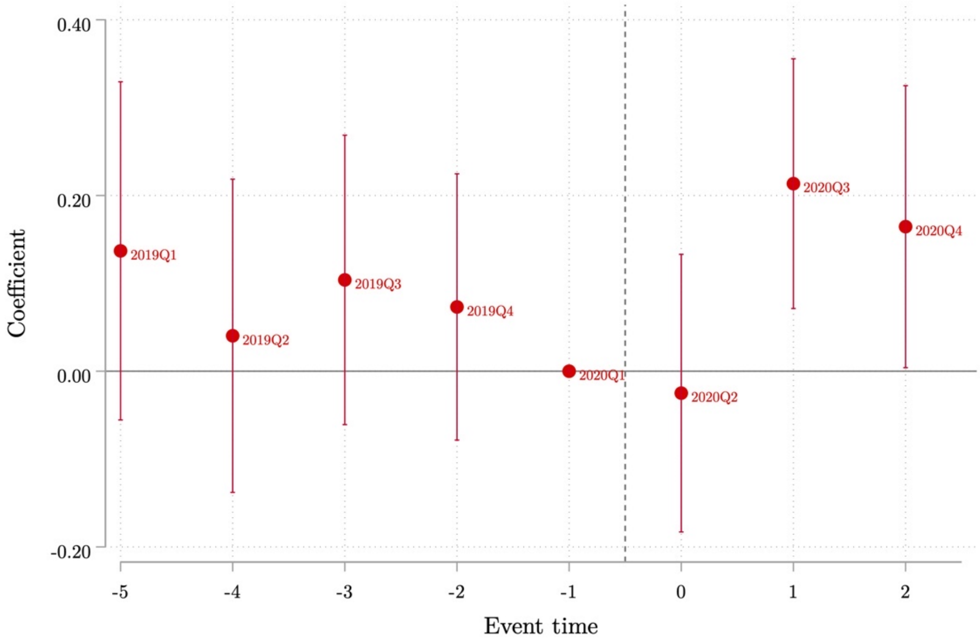
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sample:	Unmatched				Matched			
Dependent variable:	Probability of wanting to work		Probability of looking for work		Probability of wanting to work		Probability of looking for work	
Treatment	-0.064	0.038	-0.096***	-0.154*	-0.079	0.039	-0.163***	-0.180**
	(0.052)	(0.061)	(0.037)	(0.083)	(0.056)	(0.059)	(0.040)	(0.075)
Post	-0.029***	0.012	0.027***	0.044***	-0.008	0.027	-0.002	0.007
	(0.007)	(0.010)	(0.005)	(0.008)	(0.022)	(0.027)	(0.017)	(0.020)
Treatment x Post	0.227***	0.042	0.199***	0.204**	0.168***	0.037	0.259***	0.254***
	(0.054)	(0.064)	(0.039)	(0.083)	(0.060)	(0.067)	(0.043)	(0.078)
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Fixed effects	N	Y	N	Y	N	Y	N	Y
Constant	0.329***	0.505**	0.442***	0.433**	0.407***	1.093***	0.639***	0.695**
	(0.043)	(0.216)	(0.033)	(0.181)	(0.153)	(0.419)	(0.105)	(0.300)
Observations	22 158	22 158	37 204	37 204	3 025	3 025	5 350	5 350
R^2	0.124	0.848	0.111	0.710	0.155	0.781	0.128	0.651
Adjusted R^2	0.123	0.650	0.111	0.436	0.147	0.586	0.123	0.454

Author's own calculations. Source: QLFS 2020Q1 – 2020Q4 (StatsSA).
Notes: [1] Estimates weighted using relevant sampling weights and constructed 'matched' weights equivalent to the product of the sampling weight and PSM weight. [2] Standard errors clustered at the individual-level. [3] Controls include gender, race, age, marital status, highest level of education, province, and area type. [4] Propensity scores estimated using a logit model and nearest-neighbour matching with a caliper of 0.02.

Given the importance of the parallel trends assumption in identifying causal effects in a DiD design, we estimate and present event study plots to examine whether the treatment and control groups were comparable on dynamics in the pre-treatment period. This is done by estimating the above PSM-DiD regression model but including treatment leads and lags as opposed to an aggregate post-law dummy. Including leads and lags in the model allows one to check both the degree to which the post-treatment treatment effects were dynamic, and whether the two groups were comparable on outcome dynamics pre-treatment (Cunningham, 2020). Here, we make use of the 2019Q1 – 2020Q4 QLFS data,[17] and post-estimation, we plot the estimated coefficients of the interaction between period and COVID-19 grant receipt on the probability of job search with 95% confidence intervals on the leads and lags in Figure 9. Firstly and importantly, all of the pre-treatment coefficients are not statistically significant from zero, implying that individuals in the treatment group did not statistically significantly differ from those in the control group on average. Secondly, post-treatment the probability of job search increases beyond 20% and is statistically significantly different from zero in both 2020Q3 and 2020Q4. The insignificant coefficient in 2020Q2 is likely driven by the fact that the COVID-19 grant was only rolled out towards the end of the quarter from the end of May 2020.

[17] Because the 2019 QLFS data is used, we are unable to additionally control for individual FE's in this instance.

Figure 9: **Event study plot of the estimated effect of COVID-19 grant receipt on the probability of job search**



Author's own calculations. Source: QLFS 2019Q1 – 2020Q4 (StatsSA).
Notes: [1] Figure reports coefficients and 95% confidence intervals from the estimation of the PSM-DiD equation of the effect of COVID-19 grant receipt on the probability of job search, excluding controlling for individual FE's. [2] Estimates weighted using constructed 'matched' weights equivalent to the product of the sampling weight and PSM weight. [3] Standard errors clustered at the individual-level. [4] The coefficients represent the change in outcomes for grant recipients relative to non-recipients in the five quarters before and three quarters after the introduction of the grant, as compared to the quarter immediately prior to the introduction.

6. Conclusion and discussion

Before the onset of the COVID-19 pandemic, South Africa's social assistance system presumed prime-aged, able-bodied individuals would be able to support themselves through the labour market and have therefore been excluded from receiving social assistance (Ferguson, 2015). However, such a view neglects the widespread, structural unemployment which plagues South Africa. This hole in the country's social safety net was partially addressed through the introduction of the new COVID-19 Social Relief of Distress grant – a core component of the government's expansion of social protection as a response to the pandemic. The COVID-19 grant is the first grant in South Africa which specifically targets unemployed adults, with other existing grants predominantly targeting the disabled, elderly, and children in low-income households. By the end of 2020, the grant had brought over 6 million previously unreached individuals into the system (Baskaran et al., 2020) – exceeding the growth of the system in the last decade – at a cost of nearly R20 billion to the state by March 2021 (SASSA, 2021).

This paper's aim was two-fold. First, we have sought to provide a descriptive, quantitative analysis of the distribution of receipt of the COVID-19 grant across and within several groups of individuals using representative, longitudinal household survey data collected during South Africa's national lockdown. In addition to coverage, we examine adequacy, progressivity, correlates of receipt, and the grant's effects on poverty and inequality. We show that the grant brought millions of previously unreached adults – mostly non-employed, young men – into the system, and that the grant was relatively well-targeted with close to 60% of recipients being non-employed, and the remainder mostly being informally employed. In our multivariate modelling, we find that the chronic non-employed were 51% more likely to receive the grant relative to other groups. Application for and receipt of the grant has been relatively pro-poor, resembling similar levels of progressivity to that of the Child Support Grant

– the grant with the lowest income means test. This latter finding is in line with our fiscal incidence analysis which suggest that the grant reduced poverty by 5.3% amongst the poorest households, and household income inequality by 1.3% - 6.3% depending on the measure.

Second, we have sought to estimate the causal effect of COVID-19 grant receipt on labour market outcomes among the non-employed. The COVID-19 grant is distinct in South Africa's social assistance system, given that it is the first grant in the country to target the unemployed. As such, labour market effects of the grant may vary from that of existing grants which predominantly target children, the elderly, and the disabled in low-income households. To our best knowledge, this is the first paper to provide evidence on any causal effects of receipt of this grant. Our preferred estimate suggests that receipt of the COVID-19 grant increased the probability of job search by more than 25 percentage points relative to comparable non-recipients – significant at the 1% level, after accounting for several sources of possible confounders. Our results suggest that the COVID-19 grant has played an important role in reducing labour market inactivity and increasing participation – ultimately aiding the recovery of the South African labour market. Our findings are also contrary to the common concern that social grant programs may discourage work, in line with the empirical literature in developing countries (Banerjee et al., 2017), developed countries (Marinescu, 2018), and South Africa for other existing grants (Woolard et al., 2011).

Our analysis has implications for policymaking as the South African economy recovers. Any consideration for income support through social protection policy going forward ought to consider the changing dynamics of the labour market. The partial labour market recovery observed over the course of 2020 is welcomed, but uneven. By the fourth quarter, although the number of job-seekers has returned to pre-pandemic levels, employment remained significantly lower and inactivity significantly higher, with only one third of jobs lost in the informal sector having been regained. Our evidence here suggests that the COVID-19 grant has been an important, effective means of providing progressive income relief to the unemployed and informally employed, and that it has ultimately aided the labour market recovery by combatting inactivity by increasing the probability of participating in the labour market. Depending on the fiscus and the trajectory of the pandemic and the labour market, policymakers ought to consider further extending the availability of the COVID-19 grant in the short- or long-term. Such an extension could either be temporarily in place conditional on the recovery of the labour market, or permanently made part of the country's social assistance system as a means of filling the hole in the safety net and providing regular support to the transient and chronically unemployed. Lastly, any extension ought to consider altering the eligibility criteria of the grant to allow primary caregivers to concurrently hold the CSG with the COVID-19 grant as a means of supporting themselves.

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Appendix

Table A1: Average marginal effect estimates from probit model of the probability of successful COVID-19 grant receipt

Sample	Overall (1)	Men (2)	Women (3)
Woman	-0.150		
	(0.142)		
35-59 (relative to 18-34)	-0.059	0.045	-0.160
	(0.157)	(0.219)	(0.194)
60+ (relative to 18-34)	-0.334	-0.745	-0.529
	(0.319)	(0.538)	(0.425)
Coloured (relative to African/Black)	0.247	1.275***	-1.356***
	(0.235)	(0.334)	(0.350)
Asian/Indian (relative to African/Black)	-0.336	-0.892**	0.079
	(0.306)	(0.444)	(0.443)
White (relative to African/Black)	0.383	n.e.	0.194
	(0.528)	n.e.	(0.450)
Up to Secondary (relative to up to primary)	-0.142	0.019	-0.493**
	(0.212)	(0.315)	(0.245)
Complete secondary (relative to up to primary)	-0.132	0.227	-0.865***
	(0.221)	(0.322)	(0.309)
Tertiary (relative to up to primary)	-0.260	-0.145	-0.467
	(0.261)	(0.398)	(0.314)
Urban	0.041	-0.206	0.431**
	(0.143)	(0.209)	(0.184)
Eastern Cape	0.258	0.234	0.489
	(0.303)	(0.519)	(0.515)
Northern Cape	0.700**	-0.199	2.145***
	(0.351)	(0.595)	(0.611)
Free State	0.272	0.377	0.622
	(0.333)	(0.520)	(0.566)
KwaZulu-Natal	0.391	0.598	0.485
	(0.290)	(0.465)	(0.465)
North West	0.776**	0.748	1.239**
	(0.389)	(0.621)	(0.518)
Gauteng	0.607**	0.707	0.612
	(0.274)	(0.465)	(0.482)
Mpumalanga	0.241	0.268	0.569
	(0.333)	(0.500)	(0.485)
Limpopo	0.495	0.501	0.834*
	(0.307)	(0.517)	(0.503)
Married	0.091	0.167	0.060
	(0.142)	(0.230)	(0.193)
Household size	0.014	0.018	0.000
	(0.024)	(0.031)	(0.031)
Household hunger	-0.081	0.153	-0.202
	(0.156)	(0.202)	(0.241)
Discouraged (relative to economically inactive), Oct 2020	0.094	0.034	0.144
	(0.219)	(0.322)	(0.272)
Unemployed (narrow) (relative to economically inactive)	-0.257	-0.163	-0.296
	(0.207)	(0.287)	(0.258)
Employed (relative to economically inactive)	0.386	0.477	0.207
	(0.248)	(0.313)	(0.366)
Per capita household income quintile 2, June 2020 (relative to Q1)	-0.021	0.562***	-0.358
	(0.178)	(0.215)	(0.218)
Per capita household income quintile 3, June 2020 (relative to Q1)	0.134	0.372	0.068
	(0.208)	(0.274)	(0.240)
Per capita household income quintile 4, June 2020 (relative to Q1)	-0.078	0.100	-0.115

Sample	Overall (1)	Men (2)	Women (3)
	(0.217)	(0.279)	(0.295)
Per capita household income quintile 5, June 2020 (relative to Q1)	0.040	0.565*	-0.497
	(0.272)	(0.302)	(0.391)
Chronic non-employment	0.511***	0.681***	0.525**
	(0.193)	(0.253)	(0.265)
Constant	-0.424	-1.066*	-0.266
	(0.499)	(0.613)	(0.659)
Observations	1 040	513	526
F statistic	1.16	2.35	2.45
P-value	0.2628	0.0003	0.0001

Authors' own calculations. Source: NIDS-CRAM Waves 1, 2, and 3.

*Notes: [1] Estimates weighted using relevant panel sampling weights which exclude the Wave 3 top-up sample, after accounting for complex survey design. [2] Estimates of average marginal effects (AME) presented and obtained after probit estimation. [3] Dependent variable expressed as a binary variable equal to one if a respondent reports having successfully applied for the COVID-19 grant at the time of the survey in November/December 2020, and zero if their application was rejected. [4] Chronic non-employment refers to being non-employed in February and October 2020. [5] * p<0.1, ** p<0.05, ***p<0.01.*

Development Policy Research Unit
University of Cape Town
Private Bag, Rondebosch 7701
Cape Town, South Africa
Tel: +27 21 650 5701
www.dpru.uct.ac.za