



# The Bridge

AN ADRS SIMULATION POLICY BRIEF

ISSUE 7 | MAY 2021

## Fiscally Neutral Basic Income Grant Scenarios: Economic and Development Impacts

### Key questions

#### What if:

- All the Unemployed receive a BIG?
- All adults receive a BIG?
- All South Africans receive a BIG?
- BIG is equivalent to the Food Poverty Line?
- BIG is equivalent to the Lower Bound Poverty Line?
- BIG is equivalent to the Upper Bound Poverty Line?

#### Who will be or what will be:

- The main beneficiaries of a BIG?
- The impact of a BIG on poverty, inequality, and jobs?
- The impact of a BIG on household income, economic growth and government finances?

### Key findings

- Depending on the scenario, a BIG programme can significantly lower income inequality, eradicate poverty, and have a positive impact on growth and employment. It is undoubtedly a pro-poor social policy programme.
- Given the government's antipathy towards debt financing, the main challenge to introducing a BIG programme in South Africa is whether the state is willing to adopt a set of tax measures that increases the overall tax liability of the top quintiles (i.e., the non-poor) in order to recoup the overall cost of a BIG programme that is designed to benefit the poor.

#### Thoughts from the author:

*"Our fiscally neutral BIG scenarios show that it is possible to address the extensive poverty and inequality in South Africa even under an austere policy regime."*



South Africa was hit by the COVID-19 pandemic at a time when the country was already in the midst of an economic crisis. Since returning to the pre-coronavirus economic recession is not the most desirable option, current policy challenges go beyond short-term COVID-19 mitigation measures.

To help identify actionable policy options in our earlier assessment of the impact of COVID-19, we proposed a Six-Pillar policy framework that includes reforms of South Africa's social grant programme as a pillar. In this issue of *The Bridge*, we further consider options for a BIG as an anti-poverty and redistributive measure that can be designed as a fiscally neutral programme.

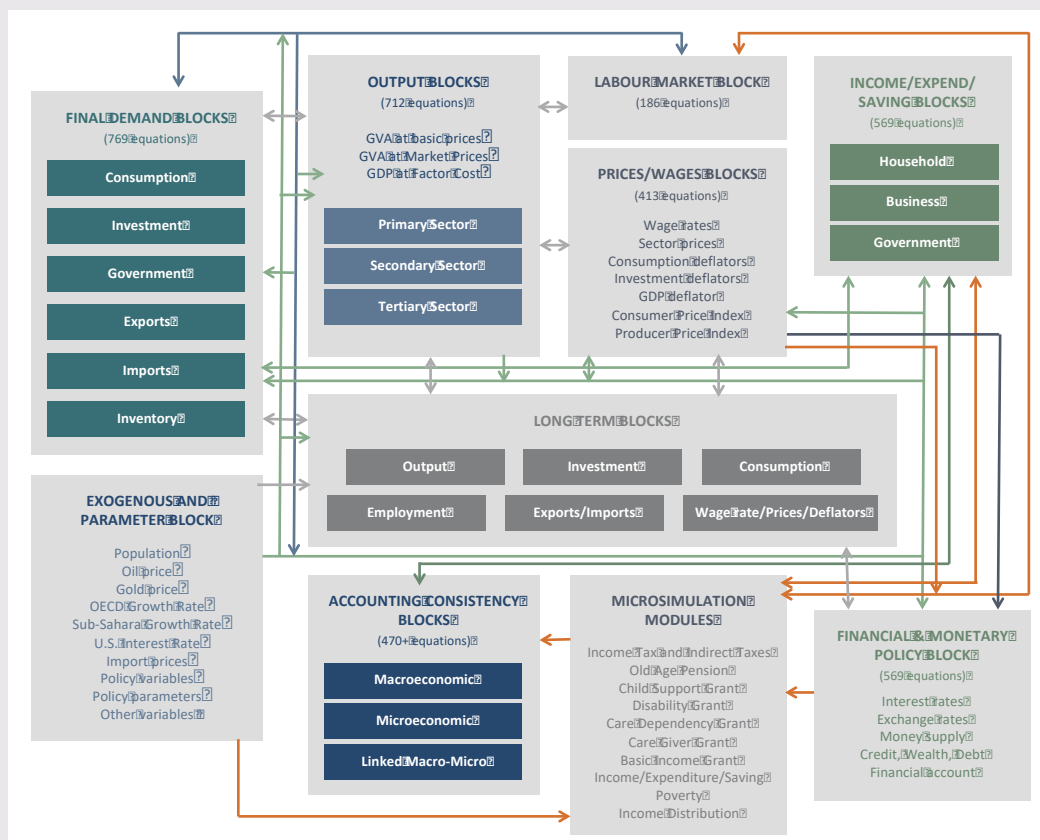
### Our approach

*is to design BIG scenarios and use the ADRS linked macro-micro economic model of South Africa (DIMMSIM™) to simulate their economic and development impact over the next five years.*

# SCENARIOS & ASSUMPTIONS

## ADRS' Dynamically Integrated Macro-Micro Simulation Model of South Africa (DIMMSIM™)

ADRS has built a suite of SA models over the last 20 years. The model that we have used for this project is called Dynamically Integrated Macro and Micro Simulation Model (DIMMSIM). DIMMSIM integrates ADRS' Macro-econometric Model of South Africa (MEMSA) with its household microsimulation model of the country (SATTSIM) to capture the dynamic interactions between the macro-economic performance and the poverty and income distribution at household level.



DIMMSIM has a broad heterodox theoretical foundation and utilises modern time series estimation methods for building the model's system of equations. DIMMSIM's microsimulation component includes three of government's taxation policies (i.e., personal income tax, excise tax and value-added tax) and six transfer programmes (i.e., old age grant, child support, disability grant, care dependency grant, care giver support and the basic income grant).

For a more detailed description of DIMMSIM, please read: [A Technical Introduction to DIMMSIM](#) or visit the ADRS website under the Resources tab.

## Specifications of Scenarios: The Baseline Scenario

The Baseline Scenario includes the impact of COVID-19 and assumes that the recent past economic policies will continue during 2021-2025. Key features of the scenario include:

### Covid-19 Economic Shocks:

- Pandemic related domestic and international spillover shocks impact the economy, including household welfare, as captured by [Adelzadeh et al \(2021\)](#).

### Macroeconomic Policy:

- Fiscal policy limits annual increases in general government investment to 6% and general government final consumption expenditure to 7.5%.
- Investment by public corporations annually increases by 6%.
- Monetary policy continues to strictly adhere to inflation targeting.

### Social Policy:

- Phase 4 of EPWP will include no changes to the number of job opportunities or remuneration rates of Phase 3.
- The social security programme remains unchanged, with grant amounts annually adjusting by inflation.
- No new major social policy measures are introduced over the next 5 years.
- No changes are made to the current income and wealth tax and the value-added tax policies over the next 5 years.

## Specifications of Scenarios: BIG Scenarios

### UNEMPLOYED BIG

Three scenarios are designed for all those who are broadly defined as unemployed in the economy. The scenarios are similar in terms of their eligibility conditions and differ in terms of their entitlement conditions.

#### Eligibility Requirements:

- Should be 18 to 59 years old.
- Should fall under Stats SA's "broadly unemployed" category.
- Should not receive any other grants.
- Should not be in school.
- All current grants will continue as they are.

#### Entitlement Conditions:

- The three unemployment grants pay equivalent of the Stats SA's Food Poverty Line (FPL), the Lower Bound Poverty Line (LBPL) and the Upper Bound Poverty Line (UBPL) respectively.
- The grant will go into effect in 2021.
- The grant amounts adjust annually by 5%.
- All current grants also adjust annually to inflation.

### ADULT BIG

The model has been used to simulate the impact of three Adult BIG scenarios with following eligibility and entitlement conditions.

#### Eligibility Requirements:

- Should be 18 to 59 years old.
- All current grants will continue as they are.

#### Entitlement Conditions:

- The three Adult Basic Income grants pay equivalent of the Stats SA's Food Poverty Line (FPL), the Lower Bound Poverty Line (LBPL) and the Upper Bound Poverty Line (UBPL) respectively.
- The grant will go into effect in 2021.
- The Adult BIG amounts adjust annually by 5%.
- All current grants also adjust annually to inflation.

### UNIVERSAL BIG

The model has been used to simulate the impact of three Universal BIG scenarios with following eligibility and entitlement conditions.

#### Eligibility Requirements:

- The entire population of South Africa, as estimated by the Stats SA, will be eligible.
- All current grants, except the Child Support Grant, will continue as they are.

#### Entitlement Conditions:

- The three Universal Basic Income grants pay equivalent of the Stats SA's Food Poverty Line (FPL), the Lower Bound Poverty Line (LBPL) and the Upper Bound Poverty Line (UBPL) respectively.
- The grant will go into effect in 2021.
- The Universal BIG amounts adjust annually by 5%.
- All current grants, except the Child Support grant that will be discontinued, adjust annually to inflation.

## BIG Assumptions for Government Outlays and Receipts

1. The Baseline Scenario's macroeconomic policy assumptions have been used for all the Basic Income Grant scenarios.
2. It is assumed that the main targets of the new grant scenarios are individuals and households in the bottom quintiles, and that the top quintiles are expected to bear the overall cost of the new grant. Therefore, the new grant is designed to be as fiscally neutral as possible, which is expected to be achieved through a mix of tax measures (e.g., wealth tax, land tax, financial transaction tax, income tax, export tax). Therefore, for modelling purposes, the simulations of the new grant scenarios include the following:
  - The bottom two quintiles will receive the new grant with no changes to their income and wealth tax liabilities.
  - Individuals from the third quintile that will receive the new grant will return the equivalent amount to the state through adjustments of their income and wealth tax liabilities.
  - The top two quintiles that will receive the new grant will return more than the equivalent amount to the state through adjustments of their income and wealth tax liabilities. The increase in the tax liability of the top quintiles is designed to help the state recoup not only the amount directly paid to them but also the amount paid to the bottom two quintiles.
  - Overall, the increase in government spending on the new grant is modelled to match the increase in its income and wealth tax revenue.

*"[T]he proposed Basic Income Grant Scenarios are mainly designed as anti-poverty and anti-inequality (i.e., redistributive) measures ...."*

3. Given the close equivalence between each scenario's injection into household income of the bottom two quintiles and leakage from household income of the top two quintiles, total household disposable income (i.e., gross income minus income and wealth tax and other deductions) is not expected to grow that differently across scenarios. It is therefore important to recognise that the proposed Basic Income Grant scenarios are mainly designed as anti-poverty and anti-inequality (i.e., redistributive) measures that are expected to have limited growth and employment impact.

4. Notwithstanding the previous point, the model simulations do take into account differences in the consumption behaviour of households across quintiles. Thus, DIMMSIM does quantify the extent to which the above differences lead to differential growth and employment outcomes across scenarios (i.e., the stimulus impact).

## BIG Monthly Payment Assumptions (2020-2025)

In this study, the BIG scenarios are designed to pay an amount equivalent to Stats SA’s three poverty lines, and DIMMSIM uses the Upper Bound Poverty Line for its annual projections of income poverty and the poverty gap.

The latest Stats SA’s monthly poverty line values are for 2020. To estimate the likely values of the three poverty lines over the next five years, the compound annual growth rate (CAGR) of each poverty line was calculated, using Stats SA data for 2015 to 2020. As a result, for the period after 2020, each monthly poverty line has been annually updated by 5%.

Alternative Poverty Lines and Grant Amounts (Rand, Monthly)						
Poverty Lines	2020*	2021	2022	2023	2024	2025
Food Poverty Line	R585	R614	R645	R677	R711	R747
Lower Bound Poverty Line	R840	R882	R926	R972	R1021	R1072
Upper Bound Poverty Line	R1268	R1331	R1398	R1468	R1541	R1618

Note: \*The poverty line values for 2020 are from Stats SA’s National Poverty Line 2020, Statistical Release P0310.1, 29 July 2021.  
<http://www.statssa.gov.za/publications/P03101/P031012020.pdf>

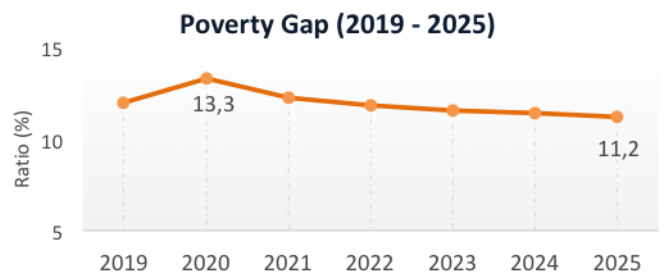
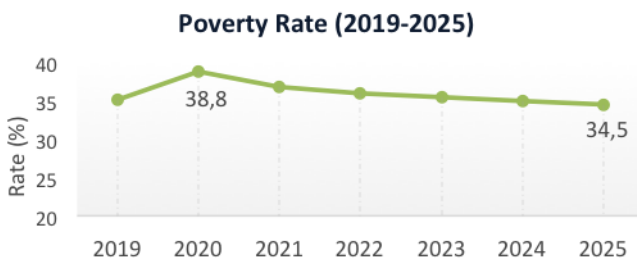
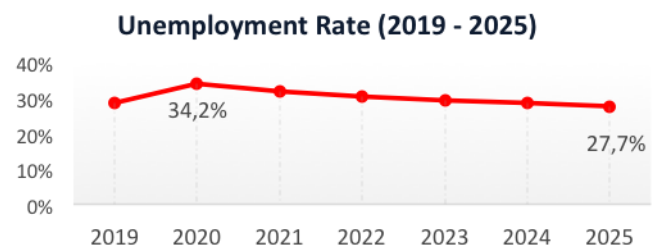


*The main targets of a BIG scenario are individuals and households in the bottom quintiles, with the top quintiles bearing its overall cost.*

# RESULTS

## SA Future Outlook with Baseline Scenario

COVID-19 is projected to have multi-year impact on the economy. Over time, economic indicators will gravitate towards pre-pandemic low economic growth and high rates of unemployment and poverty that have been associated with the policy status quo.

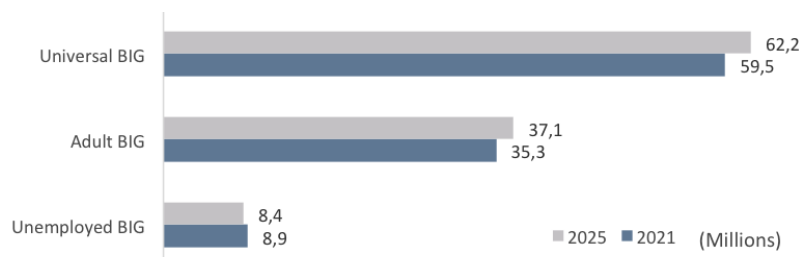


## Distribution of BIG beneficiaries

Grant Recipients	Grant Distribution (Shares of Total, %)					
	Unemployed BIG		Adult BIG		Universal BIG	
	2021	2025	2021	2025	2021	2025
South Africa	8,927,70	8,418,70	35,265,50	37,117,50	59,520,53	62,228,89
Male	40,4	38,5	49,9	50,0	48,9	48,9
Female	59,6	61,5	50,1	50,0	51,1	51,1
African	86,4	88,0	79,0	80,1	81,5	82,2
Coloured	9,9	9,4	9,5	9,3	8,7	8,5
Quintile 1	23,5	24,0	14,9	14,9	18,6	18,5
Quintile 2	20,2	20,6	17,0	17,0	18,9	19,0
Urban	58,6	57,4	61,5	61,6	54,5	54,9
Rural	41,4	42,6	38,5	38,5	45,5	45,1

Source: Asghar delzadeh, ADRS, Dynamically Integrated Macro-Micro Simulation Model of South Africa, DIMMSIM

## Estimated Number of Grant Recipients

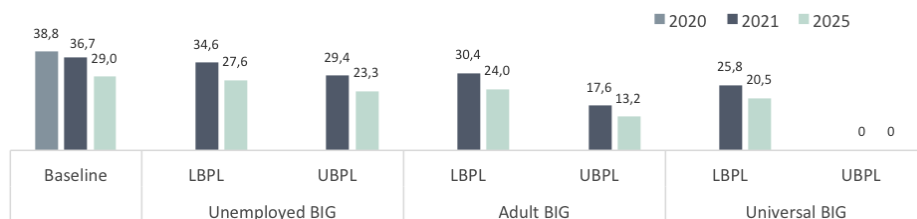


## Impact of BIG Scenarios (2021-2025)

### Poverty Rate Impact

Relative to the Baseline Scenario, the Unemployed BIG will potentially lower the poverty rate by an additional 15% points over the next five years.

The Adult BIG will be even more effective in reducing poverty rate, and the Universal BIG can potentially eradicate income poverty in South Africa, if the grant amount is set equal to the official Upper Bound Poverty Line.



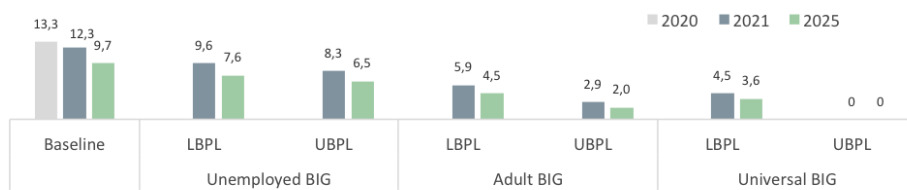
POVERTY Rate	Baseline	Unemployed BIG				Adult BIG			Universal BIG		
	2020	UBPL	FPL	LBPL	UBPL	FPL	LBPL	UBPL	FPL	LBPL	UBPL
South Africa	38,8	-25,2	-28,0	-28,8	-40,0	-34,9	-38,0	-66,0	-34,1	-47,2	-100
Male	37,4	-27,1	-30,4	-31,1	-45,3	-37,1	-39,9	-73,9	-35,6	-46,4	-100
Female	40,2	-23,6	-25,9	-26,8	-35,3	-33,0	-36,4	-59,0	-32,7	-47,9	-100
African	43,8	-23,7	-26,5	-27,3	-38,5	-33,7	-37,0	-65,1	-33,4	-46,9	-100
Coloured	22,7	-42,0	-46,5	-46,5	-59,4	-50,7	-52,4	-74,5	-38,6	-50,6	-100
Quintile 1	72,5	-13,2	-16,4	-17,8	-28,3	-25,3	-31,9	-53,5	-30,0	-51,3	-100
Quintile 2	54,4	-23,8	-28,9	-29,8	-38,4	-42,9	-48,8	-69,1	-42,5	-57,9	-100
Urban	28,6	-36,3	-39,4	-39,6	-56,6	-41,4	-42,4	-81,6	-34,7	-41,6	-100
Rural	51,0	-17,3	-19,9	-21,1	-28,4	-30,2	-34,8	-55,3	-33,3	-50,8	-100

Source: Rsgshar@delzadeh@ADRS, Dynamically Integrated Macro-Micro Simulation Model for South Africa, DIMMSIM, www.ADRS-global.com

### Poverty Gap Impact

The Basic Income Grant will significantly reduce the depth of poverty, measured by Poverty Gap.

Depending on the scenario, the poverty gap is projected to decline between 38% (Unemployed BIG FPL Scenario) and 100% (UBIG UBPL Scenario).



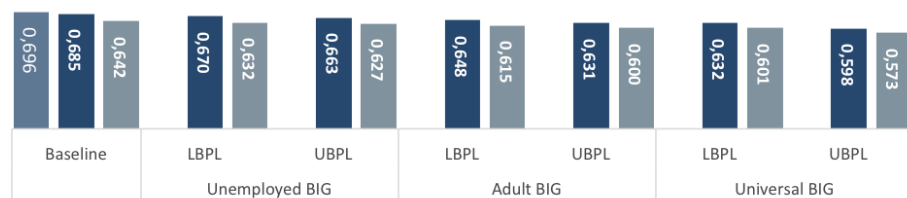
POVERTY GAP	Baseline	Unemployed BIG				Adult BIG			Universal BIG		
	2020	UBPL	FPL	LBPL	UBPL	FPL	LBPL	UBPL	FPL	LBPL	UBPL
South Africa	13,3	-27,4	-38,5	-43,2	-50,7	-55,2	-66,5	-84,6	-52,5	-73,3	-100
Male	13,8	-26,9	-39,3	-44,4	-52,9	-56,7	-68,9	-88,7	-55,2	-74,4	-100
Female	12,8	-27,8	-37,7	-41,8	-48,5	-53,7	-64,0	-80,3	-49,7	-72,1	-100
African	14,9	-25,9	-37,1	-41,8	-49,5	-54,2	-65,5	-83,9	-51,9	-73,0	-100
Coloured	7,3	-42,1	-55,5	-61,2	-70,2	-66,9	-76,3	-91,4	-54,3	-74,0	-100
Quintile 1	22,5	-20,2	-33,6	-39,1	-48,0	-50,1	-61,2	-78,2	-51,1	-75,2	-100
Quintile 2	15,6	-24,2	-35,4	-39,8	-46,9	-55,3	-66,5	-84,3	-54,4	-75,2	-100
Urban	11,0	-32,2	-44,5	-49,7	-58,2	-60,3	-72,5	-92,4	-53,3	-72,4	-100
Rural	16,1	-23,2	-33,3	-37,5	-44,4	-50,9	-61,4	-78,1	-51,7	-73,9	-100

Source: Rsgshar@delzadeh@ADRS, Dynamically Integrated Macro-Micro Simulation Model for South Africa, DIMMSIM, www.ADRS-global.com

### Inequality Impact

Relative to the Baseline Scenario, an overall economic policy scenario that includes a Basic Income Grant option will be slightly (i.e., 1-2%) or significantly (i.e., 3-10%) more effective in reducing income inequality, respectively.

Overall, since the focus of the BIG scenarios is on benefiting the bottom quintiles, the scenarios with higher grant amounts will be much more effective in reducing income inequality.



Gini Coefficient	Baseline	Unemployed BIG				Adult BIG			Universal BIG		
	2020	UBPL	FPL	LBPL	UBPL	FPL	LBPL	UBPL	FPL	LBPL	UBPL
South Africa	0,696	-7,7	-8,7	-9,2	-9,9	-10,5	-11,7	-13,7	-11,0	-13,7	-17,6
Male	0,681	-7,8	-8,6	-9,0	-9,5	-10,1	-11,0	-12,9	-11,1	-13,1	-16,2
Female	0,633	-6,0	-8,1	-8,9	-10,3	-11,5	-13,7	-17,2	-10,4	-15,3	-21,6
African	0,673	-7,1	-8,5	-9,1	-10,0	-10,9	-12,4	-15,2	-11,4	-14,6	-19,2
Coloured	0,512	-8,3	-9,4	-9,9	-10,7	-11,2	-12,5	-14,4	-10,4	-13,5	-18,2
Urban	0,684	-8,3	-9,0	-9,3	-9,8	-10,1	-10,8	-12,5	-10,5	-12,2	-15,0
Rural	0,668	-7,3	-9,1	-9,8	-11,0	-12,4	-14,3	-17,3	-12,8	-17,0	-22,4

Source: Rsgshar@delzadeh@ADRS, Dynamically Integrated Macro-Micro Simulation Model for South Africa, DIMMSIM, www.ADRS-global.com

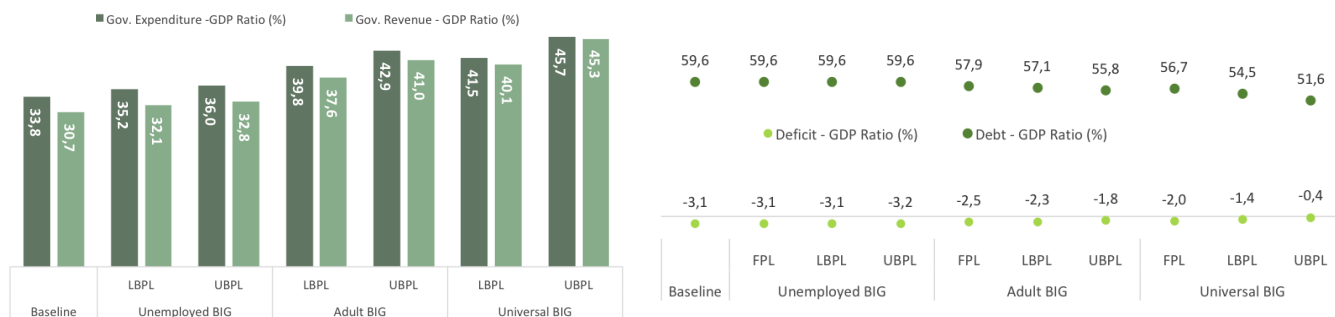
## Impact of BIG (2021-2025)

### Fiscal Impact

The requirement that the government annual spending on a BIG scenario be fully recouped through corresponding increases in income and wealth tax of the top two quintiles translates to concurrent increases of both the expenditure-GDP ratio and the revenue-GDP ratio, with no deterioration of the deficit-GDP ratio and the debt-GDP ratio.

Fiscal Impact (Average 2021-2025)										
Fiscal Indicators	Baseline	Unemployed BIG			Adult BIG			Universal BIG		
		FPL	LBPL	UBPL	FPL	LBPL	UBPL	FPL	LBPL	UBPL
Gov. Total Social Benefits Paid (Rand, Billions) (A+B+C)	R300	R369	R399	R450	R594	R723	R938	R708	R923	R1285
Gov. Current Grant Programme (Rand, Billions)	R189	R189	R189	R188	R188	R188	R187	R103	R102	R100
Gov. New Grant Programme (Rand, Billions)	R0	R70	R100	R151	R295	R424	R640	R497	R713	R1076
Gov. Other Gov. Social Benefits (Rand, Billions)	R111	R111	R110	R110	R110	R111	R111	R108	R109	R109
Gov. Taxation Income & Wealth (Rand, Billions)	R1006	R1067	R1094	R1139	R1318	R1554	R1883	R1533	R1770	R2170
Gov. Expenditure-GDP Ratio (%)	33,8	34,8	35,2	36,0	38,0	39,8	42,9	39,0	41,5	45,7
Gov. Revenue-GDP Ratio (%)	30,7	31,7	32,1	32,8	35,5	37,6	41,0	37,0	40,1	45,3
Deficit-GDP Ratio (%)	-3,1	-3,1	-3,1	-3,2	-2,5	-2,3	-1,8	-2,0	-1,4	-0,4
Debt-GDP Ratio (%)	59,6	59,6	59,6	59,6	57,9	57,1	55,8	56,7	54,5	51,6

Source: Asghar Adelzadeh (ADRS, Dynamically Integrated Macro-Micro Simulation Model of South Africa, IIMMSIM, www.ADRS-global.com)



### Macroeconomic Impact

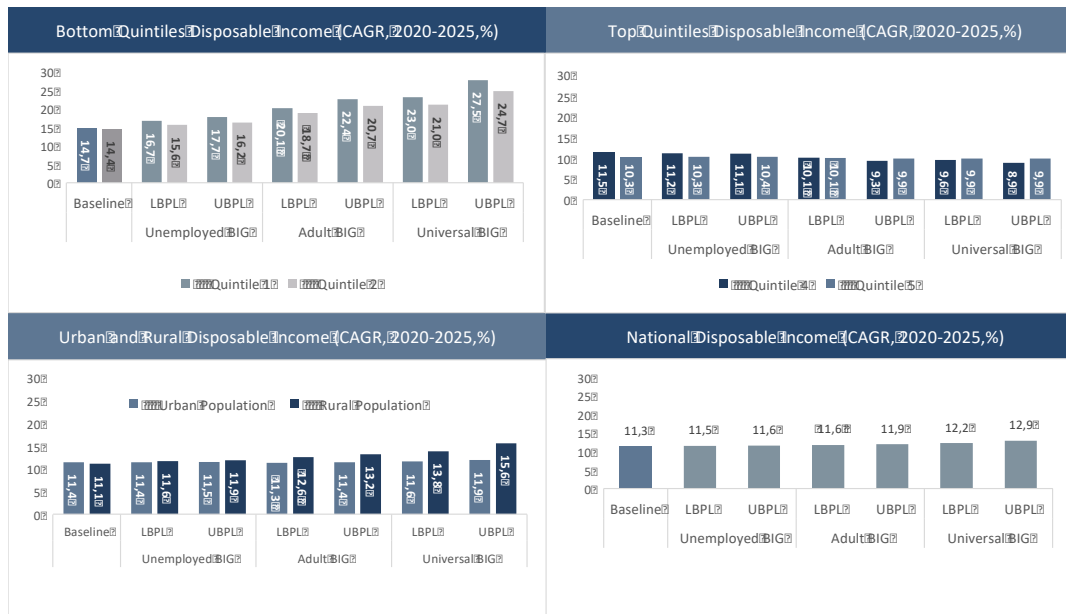
Macroeconomic Impact (CAGR, 2020-2025, %)										
Macroeconomic Indicators	Baseline	Unemployed BIG			Adult BIG			Universal BIG		
		FPL	LBPL	UBPL	FPL	LBPL	UBPL	FPL	LBPL	UBPL
<b>Household Disposable Income</b>										
National	11,3	11,4	11,5	11,6	11,5	11,6	11,9	11,7	12,2	12,9
Quintile 1	14,7	16,1	16,7	17,7	18,6	20,1	22,4	19,9	23,0	27,5
Quintile 2	14,4	15,2	15,6	16,2	17,5	18,7	20,7	18,6	21,0	24,7
Quintile 3	11,8	11,8	11,8	11,9	12,1	12,2	12,9	13,3	14,0	15,1
Quintile 4	11,5	11,3	11,2	11,1	10,5	10,1	9,3	10,0	9,6	8,9
Quintile 5	10,3	10,3	10,3	10,4	10,1	10,1	9,9	9,9	9,9	9,9
Urban Population	11,4	11,4	11,4	11,5	11,3	11,3	11,4	11,4	11,6	11,9
Rural Population	11,1	11,5	11,6	11,9	12,1	12,6	13,2	12,6	13,8	15,6
GDP Growth	3,47	3,57	3,60	3,67	3,75	3,87	4,08	3,95	4,62	5,32
Unemployment Rate (Ave.)	27,42	27,39	27,37	27,35	27,33	27,28	27,21	27,21	27,03	26,71
CPI Inflation (Ave.)	4,9	4,9	4,9	4,9	4,9	4,9	4,9	4,8	4,7	5,1
PPI Inflation (Ave.)	5,7	5,7	5,7	5,7	5,6	5,7	5,7	5,6	5,5	5,9

Source: Asghar Adelzadeh (ADRS, Dynamically Integrated Macro-Micro Simulation Model of South Africa, IIMMSIM, www.ADRS-global.com)

## Macroeconomic Impact

### Disposable Income Impact

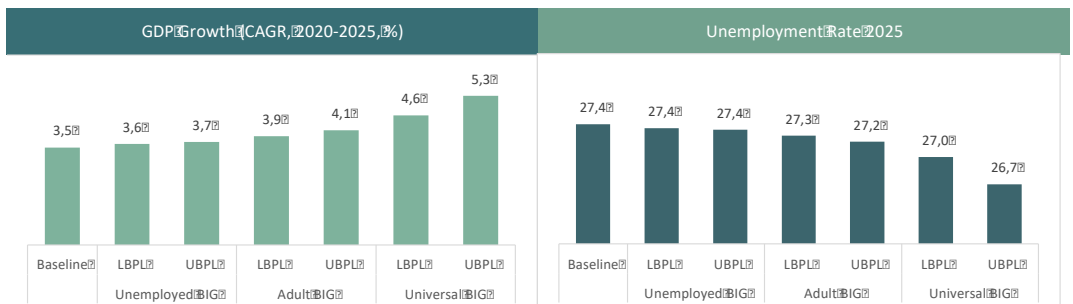
Given the requirement that government spending on a new grant be fully recouped through increases in income and wealth tax, the Basic Income Grant scenarios will only slightly raise the CAGR of *total* household disposable income. However, they significantly increase the CAGR of disposable incomes of the bottom two quintiles and rural population relative to the CAGR of disposable income of the top quintiles and urban population, respectively.



Source: Sghar Abdelzadeh (ADRS, Dynamically Integrated Macro-Micro Simulation Model for South Africa, DIMMSIM, www.ADRS-global.com)

### Growth & Employment Impact

Even though the requirement that government spending on a new grant be fully recouped means that the scenarios do not provide a new net injection into the economy, the scenarios' bias towards the poor households, with relatively higher marginal propensity to consume, have a positive impact on economic growth and employment. This outcome is especially the case under the Universal BIG scenarios.

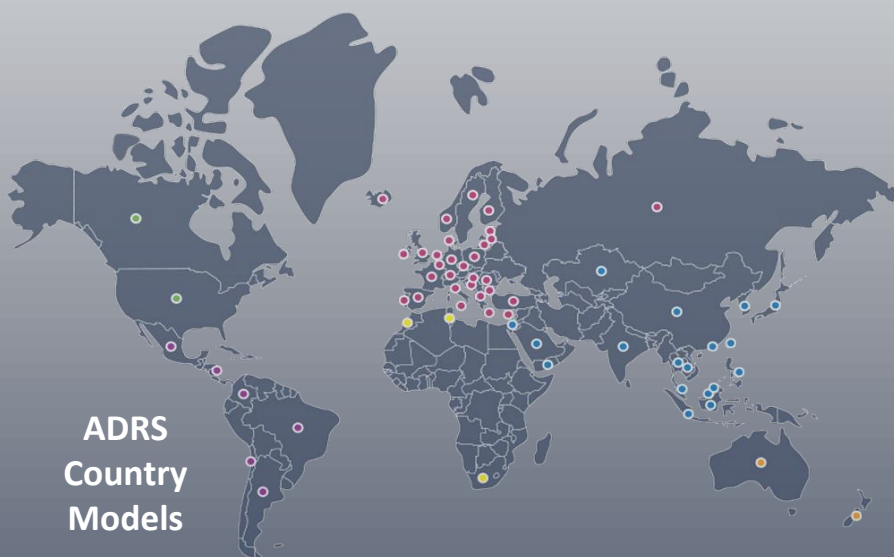


Source: Sghar Abdelzadeh (ADRS, Dynamically Integrated Macro-Micro Simulation Model for South Africa, DIMMSIM, www.ADRS-global.com)



# SUMMARY

- 1 The ADRS Dynamically Integrated Macro-Micro Simulation Model of South Africa (DIMMSIM™) was used to design new grant scenarios and to quantify their economic and development impact.
- 2 We designed 9 Basic Income Grant scenarios, simulated their impact over the next five years and compared their results.
- 3 We show that the South African government can introduce a Basic Income Grant programme that targets both poverty and inequality and that is concurrently fiscally neutral.
- 4 Depending on the choice of scenario, and relative to the Baseline Scenario, a Basic Income Grant programme can significantly lower income inequality and eradicate poverty in South Africa. It is undoubtedly a pro-poor social policy programme.
- 5 Even though by design the scenarios do not provide new net injections into the economy, the scenarios' bias towards the poor households have positive impact on growth and employment.
- 6 The main challenge to introducing a BIG programme in South Africa, given the government's antipathy towards debt financing, is whether the state is willing to adopt a set of tax measures (e.g., wealth tax, land tax, financial transaction tax, income tax) that increases the overall tax liability of the top quintiles (i.e., the non-poor) in order to recoup the overall cost of a BIG programme that is designed to benefit the bottom two quintile households (i.e., the poor).



ADRS  
Country  
Models

AFRICA	• MOROCCO • TUNISIA • SOUTH AFRICA (SUITE OF MACRO AND MICRO ECONOMIC MODELS)
ASIA	• BRUNEI • CAMBODIA • CHINA • HONG KONG SPECIAL ADMINISTRATIVE REGION OF CHINA • INDIA • INDONESIA • ISRAEL • JAPAN • KAZAKHSTAN • REPUBLIC OF KOREA • MALAYSIA • PHILIPPINES • SAUDI ARABIA • SINGAPORE • TAIWAN PROVINCE OF CHINA • THAILAND • YEMEN
EUROPE	• AUSTRIA • BELGIUM • BULGARIA • CROATIA • CYPRUS • CZECH REPUBLIC • DENMARK • ESTONIA • FINLAND • FRANCE • GERMANY • GREECE • HUNGARY • ICELAND • IRELAND • ITALY • LATVIA • LITHUANIA • LUXEMBOURG • MACEDONIA • MALTA • NETHERLANDS • NORWAY • POLAND • PORTUGAL • ROMANIA • RUSSIAN FEDERATION • SLOVAKIA • SLOVENIA • SPAIN • SWEDEN • SWITZERLAND • TURKEY • UNITED KINGDOM
NORTH & CENTRAL AMERICA	• CANADA • MEXICO • UNITED STATES OF AMERICA
SOUTH AMERICA	• ARGENTINA • BRAZIL • CHILE • COLOMBIA • COSTA RICA
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**THE BRIDGE** is an ADRS policy brief designed to present the main findings of policy simulations on key development challenges. With each issue we present the quantification of policy options in order to support evidence-based policy decision-making and to contribute to current economic policy analysis and debate.

For more information about the model used in this issue and for a detailed description of policy scenarios, Please contact the author

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