ECONOMIC POLICY CHOICES FOR THE INDLULAMITHI SCENARIOS

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The primary objective of modelling support for the Indlulamithi scenarios is to use economic modelling techniques to develop policy scenarios and projections of key economic and development indicators that support and strengthen the economic underpinning of Indlulamithi project scenarios. With the help of the ADRS's Dynamically Integrated Macro-Micro Simulation Model of South Africa (DIMMSIM™), we used the three Indlulamithi scenarios to design and simulate relevant policy scenarios.

DIMMSIM™ is a multi-sector macroeconometric model of South Africa that also contains a full household micro-simulation model of the country. It captures the dynamic interactions between macroeconomic performance and household welfare. Simulations and projections of the model use various inputs that are exogenous to the model. These inputs include population data, policy parameters and other national and international parameters. Annexure B provides a brief non-technical description of DIMMSIM™.

iSbhujwa: An Enclave Bourgeois Nation

iSbhujwa Economic Policy Framework and Measures

Under the iSbhujwa scenario, **the policy status quo is retained** after the 2019 election. Consequently, the economic outlook for the future of South Africa basically resembles its recent performance. Microeconomic policy reforms are aimed propelling the economy onto a significantly higher macroeconomic performance, namely a path of higher growth and higher employment. Therefore, policies that are adopted and implemented are essentially supply-side measures aimed at reforming institutions, the regulatory frameworks and agencies in order to improve efficiencies in market. This is expected to produce the growth necessary to yield high employment in South Africa.

Government fiscal and monetary policy continues to follow the current austerity approach to macroeconomic policy, composed of fiscal austerity, a flexible exchange rate and strict inflation targeting. The new Minister of Finance implements budget cuts aiming to decrease the deficit so that a business-friendly environment which attracts

[11] This report was commissioned by the Mapungubwe Institute for Strategic Reflection (MISTRA). The views expressed in this report are those of the author and do not necessarily represent those of the MISTRA.

investment is created, thereby raising GDP and employment. Therefore, through the Medium-Term Strategic Framework (MTSF) and Medium-Term Expenditure Framework (MTEF), fiscal policy continues to prioritise lowering the debt-GDP ratio through expenditure measures. Furthermore, monetary authorities will continue setting the interest rate to enforce strict adherence to inflation targeting, with a 6% inflation rate ceiling. The Scenario Box provides a brief overview of key policy measures under the iSbhujwa scenario.

Economic Performance Under the iSbhujwa Scenario

With the iSbhujwa scenario, the real size of the economy (in 2010 prices) is projected to grow by approximately40%, from R3,144 billion in 2018 to R4,415 billion in 2030, which translates to a compound annual growth rate (CAGR) of 2.86% over the next 12 years (i.e. 2019–2030). The real per capita GDP is expected to increase from R55,600 in 2018 to reach R67,900 by 2030. Total employment in the economy will increase to 21.3 million by 2030, thus adding a little more than 5 million jobs to the economy over the projection period. By 2030, the unemployment rate is expected to decline from 27.5% in 2018 to 23.63% in 2030, and the poverty rate is projected to gradually decline to 27% from 38% in 2018.

The iSbhujwa scenario leaves a significant gap between the likely future performance of the economy and government targets for 2030. The gap shows that while there will be some progress under the scenario's trickle-down path, relative to the targets for 2030 the scenario will significantly under-deliver. For example, under the iSbhujwa scenario, by 2030 the unemployment rate will still be approximately four times higher than the NDP target of 6%. The per capita GDP will reach only approximately60% of its target, and more than one-fourth of the population will still live in poverty. At the same time, as the debt-GDP ratio is projected to rise under this scenario, fiscal austerity is expected to continue to restrict government's ability to expand social services to the growing population.

iSbhujwa
An Enclave Bourgeois Nation

Macroeconomic Policy:

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

Social Policy:

- Phase 4 of EPWP is introduced in 2019 with no changes to the number of job opportunities or remuneration rates of Phase 3.
- The social security programme remains unchanged, with grant amounts adjusting by 6% annually.
- No new major social policy measures are introduced over the next 12 years.

Microeconomic reforms:

- Tourism sector exports expand by an additional 8% to 10% annually over the medium term (between 2019 and 2021). Thereafter, the positive shock to the sector exports is expected to gradually settle to 5% by 2020.
- Output of the Trade, Catering and Accommodation Services sector, which includes tourism, grows by an additional 2% to 4% over the next three years. Thereafter, the positive shock to the sector's growth is expected to gradually decline, reaching 1.4% by 2030.
- Export from the agriculture sector grows by an additional 1% in 2019 and by an additional half a percent every year thereafter.
- The price of the transport, storage and communication sector declines over the next 12 years by 5% to 10% initially (between 2019 and 2021) and then by an additional 5% annually.
- Labour productivity especially increases in the following sectors: transport, storage and communication, agriculture, food, basic chemicals, iron and steel, and trade, catering and accommodation services. Labour productivity in these sectors grows annually by an additional 1%.
- Increases in competitiveness, which leads to the gradual lowering of mark-up by two percent initially and an additional one percent during each subsequent year, occurs for the trade, catering and accommodation services; transport, storage and communication; and financial intermediation, insurance, real estate and business services sectors.

External Environment:

- The level of foreign direct investment in South Africa increases to 0.05% of GDP.
- The gold price annually increases by 1%.
- The nominal value of total world import grows annually by 6%.

Nayi le Walk: A Nation in Step with Itself

Nayi le Walk Economic Policy Framework and Measures

In this scenario past austerity-focused macroeconomic policy gives way to a growth-oriented approach. This enables policymakers to consider fiscal and monetary policy tools for a more robust response to the country's developmental imperatives. Therefore, under the Nayi le Walk scenario, general government investment in economic infrastructure is pegged to increase from R87 billion in 2018 to close to R420 billion in 2030. Similarly, government investment in social infrastructure increases from R40.1 billion in 2018 to R196 billion by 2030, while economic services increase from around R30 billion to R143 billion during the same period. At the same time, investment by public corporations gradually increases from R184 billion in 2018 to R578 billion by 2030. The increased public investment provides for the allocation of significantly higher investment funds for building roads, bridges, railways, schools, hospitals, public housing, R&D and other economic and social infrastructure needs of the country.

Thus, the Nayi le Walk scenario expands government final consumption expenditure from a little more than R1 trillion in 2018 to R3.67 trillion by 2030, which means that between 2019 and 2030, it spends R3.61 more than the iSbhujwa scenario on the delivery of individual and collective social services.

Under the Nayi le Walk scenario, interest rate and credit extension policies are adjusted to lower the cost of borrowing, while easing access to credit by the private sector (business and households). The pursuit of these policies is mainly to support government's stated objectives of promoting black-owned businesses, properties and the growth of small and medium-sized enterprises in general.

With the rising demand for skilled labour, government realises that there is little or no chance that the private sector alone will generate jobs for 6 million unskilled unemployed workers in South Africa. In addition to the expanded Special Economic Zones and township industrial parks as well as an intensified programme to support small and micro enterprises, government decides to revamp the EPWP to become the Employer of Last Resort (ELR) for the unskilled-unemployed.

Under the Nayi le Walk scenario, trade and industrial policy centres on a social contract between the public sector and business. Corporations get extra resources to grow bigger and more innovative and in return these corporations are expected to create good-paying jobs in the country and focus on sectors that promise the greatest social returns. Because the manufacturing sector has relatively larger spill-over effects, government focuses on this sector for public procurement and local content policies, industrial financing and other measures. At the same time, the Public Investment Corporation (PIC), which is expected to contribute to the broader socio-economic

development of the country, significantly increases its investment in the manufacturing sector. Finally, the Public-Private Growth Initiative (PPGI), which is established with the goal of aligning strategic planning between the private sector and government to improve economic growth, invests at least R500 billion, mainly in manufacturing, over the next 12 years. This is assisted by a gradual increase in FDI. The Policy Box provides more details on policy choices under the Nayi le Walk scenario.

Economic Performance Under the Nayi le Walk Scenario

A well-coordinated annual increase in government current and capital spending boosts aggregate demand through the fiscal multiplier and increases aggregate supply overtime as the productive capacity of the economy increases. Combined with this is the virtuous cycle of rising consumer demand deriving from larger numbers of employed and self-employed people. With a more growth-focused monetary policy, demand effects are stronger and economic performance is significantly enhanced. These measures especially provide SMMEs with much needed life support and accentuate the decline in debt-GDP ratio by engendering stronger growth.

The ELR provides millions with a form of income while the manufacturing sector grows significantly leading to the gradual reversal of negative trends in its share of total output and employment during the next decade. Other important outcomes of the Nayi le Walk include:

a. an average growth rate of 5.74% for the period 2019–2030, which will more than double the size of the GDP;
b. an 80% increase in the real per-capita GDP;
c. an increase in the average investment-GDP ratio to 28%;
d. a debt-GDP ratio of 30.4% by 2030;
e. an average deficit-GDP ratio of -3.2% during the twelve-year period;
f. an increase in the available government funding for major government programmes such as the NHI, the land reform, free higher education, greening the economy, and other important social and economic services;
g. a reduction in the unemployment rate by more than half, from the current 27.5% to 12.3% by 2030; and
h. a reduction in the poverty rate by approximately two-thirds, from the current 38% to 13% in 2030.

Nayi le Walk
A Nation in Step with Itself

Microeconomic reforms:

- Tourism sector exports expand by an additional 8% to 10% annually over the medium term (between 2019 and 2021). Thereafter, the positive shock to the sector exports is expected to gradually settle to 5% by 2020.
- Output of the Trade, Catering and Accommodation Services sector, which includes tourism, grows by an additional 2% to 4% over the next three years. Thereafter, the positive shock to the sector's growth is expected to gradually decline, reaching 1.4% by 2030.
- Export from the agriculture sector grows by an additional 1% in 2019 and by an additional half a percent every year thereafter.
- The price of the transport, storage and communication sector declines over the next 12 years by 5% to 10% initially (between 2019 and 2021) and then by an additional 5% annually.
- Labour productivity especially increases in the following sectors: transport, storage and communication, agriculture, food, basic chemicals, iron and steel, and trade, catering and accommodation services. Labour productivity in these sectors grows annually by an additional 1%.
- Increases in competitiveness, which leads to the gradual lowering of mark-up by two percent initially and an additional one percent during each subsequent year, occurs for the trade, catering and accommodation services; transport, storage and communication; and financial intermediation, insurance, real estate and business services sectors.

Trade and Industrial Policy:

- Industrial policy measures, such as various industrial financing incentives, succeed in directly and indirectly increasing total annual investment in the manufacturing sector by R10 billion during the next 12 years.
- Trade and industrial policy measures, such as the SEZ and African integration programmes, succeed in increasing total exports by an additional 1.5% after 2020.
- The government's Proudly SA and localisation policies succeed in gradually reducing the import dependency ratios of some sectors by 20% over the next 12 years.

Macroeconomic Policy:

- Government and public corporations systematically increase their investment in economic infrastructure (e.g. roads, bridges, dams, electricity and water supply), social infrastructure (e.g. schools, hospitals, parks and administrative services) and economic services (e.g. business enterprises) by 10% annually over the next 12 years, which is 4% above the iSbhujwa scenario.
- Relative to theiSbhujwa scenario, the government's annual current expenditure is raised by an additional 3% in order to provide more financial support for the delivery of social services over the next 12 years.
- The Reserve Bank acts to use monetary policy tools to contribute to the goal of achieving a growth target of 6% with a higher target for the upper limit of the inflation rate.
- Monetary authorities adopt necessary measures to raise the annual growth of the credit extension to the private sector to 15%.

Social Policy:

- With many unemployed people being absorbed in various economic activities, including SEZs, industrial parks as well as small and micro-enterprises, government gradually begins to make public works the employer of last resort for the unskilled unemployed in South

Africawho are still left out. It originally caters for 70% of the unskilled unemployed before expanding the service to all unskilled unemployed after 2027. The daily remuneration rate for those involved in public works is significantly increased, and it is adjusted upward by 6% annually.

- The DSD introduces a new caregiver grant, for family members that take care of a child who receives either a child support grant or a care dependency grant. The programme is designed to allocate only one caregiver grant per family. The initial value of the grant is R300 per month which will increase by 6% annually.

PIC and Private Sector Investment:

- Through the Public-Private Growth Initiative (PPGI), the private sector increases investment in the South African economy by R500 billion over the next 12 years.
- To contribute to the broader socio-economic development of the country, the Public Investment Corporation (PIC) increases its investment in the South African economy by R100 billion by annually investingR20 billion in the manufacturing sector between 2019 and 2023 (5 years).

External Environment:

- The level of foreign direct investment in South Africa gradually increases from 0.05% to 0.13% of GDP between 2019 and 2030.
- The gold price annually increases by 2% and platinum group metals (PGM) as well as manganese also perform well, on the back of stationary and mobile applications of fuel cell technology and electricity batteries respectively.
- The nominal value of total world imports grows annually by 8%.

Gwara Gwara: A Floundering False Dawn

Gwara Gwara Economic Policy Framework and Measures

The election of 2019 did not bring about major changes in economic policy. The general perception within the government was that the poor economic performance was merely linked to the corruptions that had stemmed from the "state capture" saga. Therefore, the new government's main focus was on uprooting the "state capture" as a way to also reignite the economy.These efforts flounder in the face of resistance and poor capacity in state law-enforcement agencies At the same time, there were new calls for large fiscal adjustments to close the deficit and stabilise debt through the reduction of the wage bill, privatising core State Owned Enterprises (SOEs), dropping the implementation of commitments such as the NHI and subsidised higher education. Overall, the trickle-down path of the economy, with its supply-side measures, continued after 2019, with even less income and wealth trickling down to the masses as the MTEF's austerity-focused approach imposed annual cuts in real spending on social services and government transfers.

By the election of 2024, proponents of the extreme austerity akin to Structural Adjustment Programmes blamed the poor economic performance on incomplete implementation of their proposed supply-side microeconomic policies for structural reform. Under a coalition government, there were increasing talks of "shock therapy" from some key cabinet members. Consequently, in line with this thinking, measures were adopted to withdraw state subsidies, cut public works programmes, reduce the real value of social grants, privatise more of the SOEs, abandon Buy South Africa and localisation policies, cut taxes and adopt a more restrictive inflation targeting approach. As outcomes of these measures started to show, the country had moved to an **immiserising growth path**, with the rich getting richer and the poor getting poorer.

Economic Performance Under Gwara Gwara Scenario

Under the Gwara Gwara scenario, the average economic growth dropped to below 2% and the official unemployment rate remained extremely high at 26% and above. The real per capita income thus improved slowly, by an average of 1.1% annually over the period, from approximatelyR55,000 in 2018 to R62,000 in 2030. The high rate of unemployment and the scenario's austerity on steroids approach restricted the growth of demand in the economy and, with it, the growth of output (supply). The real gross domestic expenditure, which measures total real demand in the economy, experienced the lowest CAGR during this period at 2.1% compared to 3.6% for 2002–2017. Similarly, the CAGR of economic output dropped to 2.1% compared to 2.7% for 2002 to 2017. Contrary to the predictions of the proponents of the new policy, further privatisation and

liberalisation of the economy did not yield a higher investment-GDP ratio by the end of the 2020s. In fact, the average investment-GDP ratio for the period was 6% lower than the corresponding average for 2002–2017. By 2030, approximately one-third of the population remained in poverty. The slow rate of per capital income growth and the worsening of inequality under the Gwara Gwara scenario significantly reduced the share of the poor from the economic pie, making the scenario an immiserising growth path for the country's poor.

GwaraGwara
A Floundering False Dawn

Microeconomic reforms:

- Tourism sector exports expand by an additional 8% to 10% annually over the medium term (between 2019 and 2021). Thereafter, the positive shock to the sector exports is expected to gradually settle to 5% by 2020.
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Trade and Industrial Policy:

- Industrial policy measures, such as subsidies on products and production and various industrial financing incentives are discontinued.
- The government's Proudly SA and localisation policies are phased out.

Macroeconomic Policy:

- Fiscal austerity continues to restrict annual increases in nominal general government investment to 5.5% and nominal general government final consumption expenditure to 6%.
- The household income tax rate for brackets 4 to 7 is reduced by 2%
- Investment by public corporations annually increases by 5.5%.
- Monetary policy continues to strictly adhere to inflation targeting with the ceiling for the inflation rate reduced to 4%.

Social Policy:

- The annual number of EPWP job opportunities is halved for the Phase 4 of the programme.
- The annual adjustment of the amount of all social grants is limited to 3%.

External Environment:

- The level of foreign direct investment in South Africa gradually declines from 0.05% of GDP in 2018 to 0.005% of GDP.
- The gold price annually increases by 1%.
- The nominal value of total world import grows annually by 6%.

Appendix

BASIC STRUCTURE AND FEATURES OF ADRS' DYNAMICALLY INTEGRATED MACRO-MICROECONOMIC SIMULATION MODEL OF SOUTH AFRICA (DIMMSIM)

Over the last 15 years, ADRS has built a suite of 10 proprietary South African economic models which include two core models and eight specialised models. The two distinct core models were built using fundamentally different modelling techniques. The ADRS multi-sector Macroeconomic Model of South Africa (MEMSA) is a large multi-sector macroeconometric model built as a tool for designing, forecasting and conducting impact analyses of macroeconomic and industry policy scenarios. Its construction utilised time-series data and analysis. The ADRS South African Tax and Transfer Model (SATTSIM) is a microsimulation model built using household-level survey data. It is a tool for designing, forecasting and conducting impact analyses of policies related to direct and indirect taxes, social security, public works, poverty and inequality.

DIMMSIM integrates MEMSA and SATTSIM to capture the dynamic interactions between the macroeconomic performance and the poverty and income distribution at household level. Following is a brief non-technical introduction to the DIMMSIM and its features.

DIMMSIM's Macroeconomic Component

The ADRS MEMSA is one of the two modules of DIMMSIM. It allows design and analyses of macroeconomics and industrial policies and produces projections of the paths of key indicators related to the economy and its economic sectors under various domestic and international contexts and policy options.

MEMSA is a bottom-up model with more than 3200 equations that capture the structure of the National Income and Product Account (NIPA) at sector and aggregate levels and produces projections that are consistent with various national accounting identities in nominal and real terms. The model includes more than 400 estimated equations that analytically and empirically capture the behaviour of the private and household sectors as part of capturing the working and dynamics of the economy from its production, expenditure and income perspectives. MEMSA's analytical approach is in the tradition of pluralism of heterodox economics and uses modern time-series specification and estimation methods to estimate the parameters of the model's behavioural equations. MEMSA's equation system can be broken down into a number of blocks that include:

- **The Final Demand Block** encompasses 769 equations. It includes sets of estimated equations that capture the behaviour of the private sector as it relates to sectoral-level investment, exports and imports in 45 sectors; households in terms of expenditure on 27 categories of consumption goods and services; and the public sector in terms of final consumption expenditure and investment. The expenditure block of equations therefore produces projections of various components of aggregate demand in the economy that facilitate the model's projection of real and nominal GDP from the expenditure side.

- **The Production Block** includes 712 equations that represent sector and aggregate production-related activities in the economy. It includes sets of equations that produce projections of sector outputs, potential outputs, capital stock and capital productivity, all in nominal and real terms. Private sector decisions on how much to produce in various sectors of the economy are captured through 40 estimated equations that link the decisions to various demand, supply and price factors in the economy. Therefore, the equations of the production block generate consistent projections of nominal and real values for sector and aggregate outputs, namely value added at basic prices. The aggregate of sectoral value added at basic prices plus the net taxes and subsidies on products provide the model's annual projections of GDP from the production side.

- **The Price and Wage Block** is comprised of 413 equations that include time-series estimated behavioural equations for sector output prices (45), consumer prices (30) and investment prices (45). It also includes equations for sector import and export prices, sector- and economy-wide inflation rates and 45 estimated equations for the sector-level real wage rate (i.e. average remuneration rates) and 45 calculated sectoral-level nominal wage rates.

- **The Labour Market Block** is comprised of 186 equations that include 40 estimated equations that capture factors that determine short- and long-term demand for sector-level employment. In addition, this block includes equations for sectoral labour productivity, labour force, unemployment rate and other labour market indicators.

- **The Income, Expenditure and Savings Block** includes 569 equations that capture a detailed breakdown of income, expenditure and savings of households, incorporated businesses and government, in both nominal and real terms. A combination of variables from this block, the labour market block, the price and wage block and the production block provides forecasts of the real and nominal GDP from the income side.

- **The Financial Block** embodies 88 equations for indicators related to the financial and monetary side of the economy, such as the interest rate, exchange rates, money supply, credit extensions, household financial assets and liabilities, and foreign direct and portfolio investments. The financial block variables are especially important determinants of variables in other equation blocks and include policy variables and time-series estimated variables.

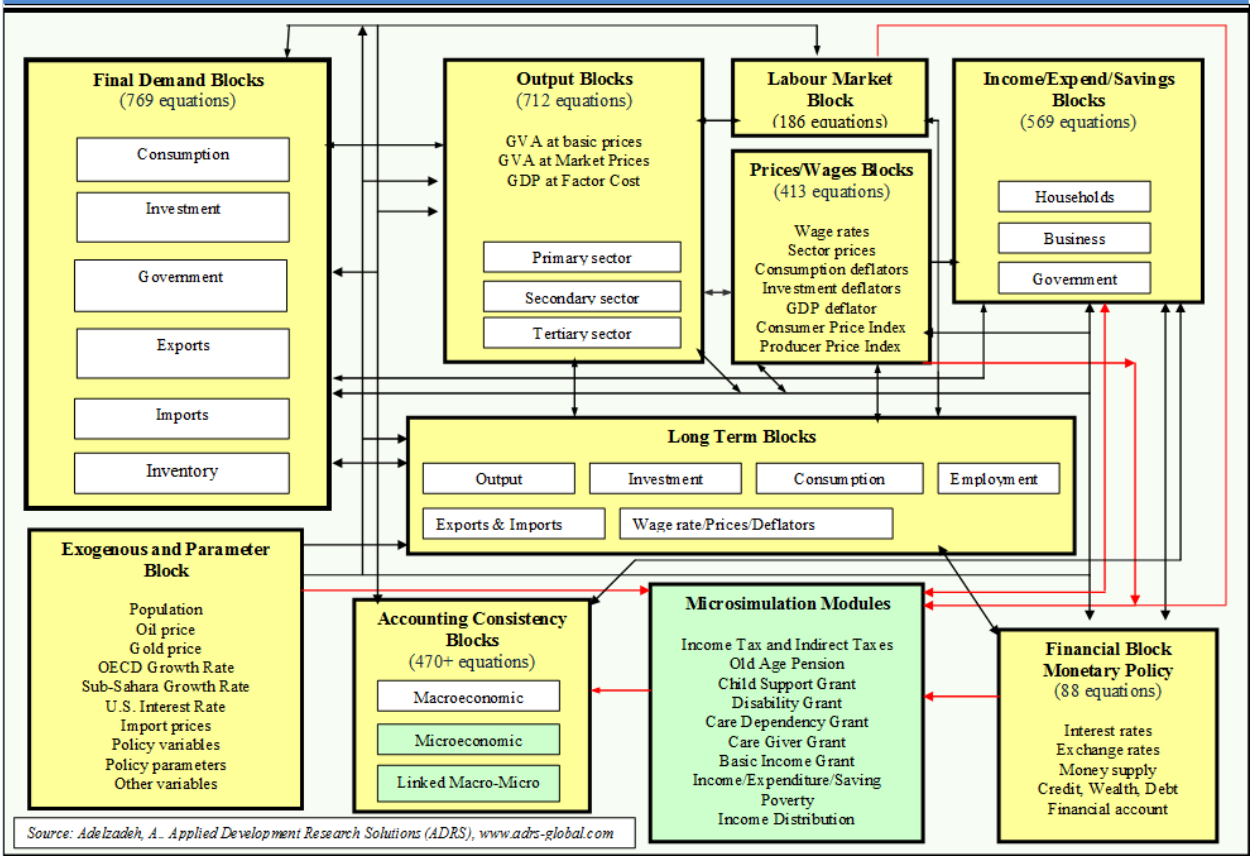
- **The National Account Block** incorporates more than 470 equations. This block of equations is responsible for ensuring consistency and enforcing NIPA relationships within the economic system captured by the model. For example, it ensures that in the model, the calculation of GDP, both real and nominal, from the income, production and expenditure sides are comprised of relevant NIPA components and are consistent with each other at aggregate and sector levels, in nominal and real terms.

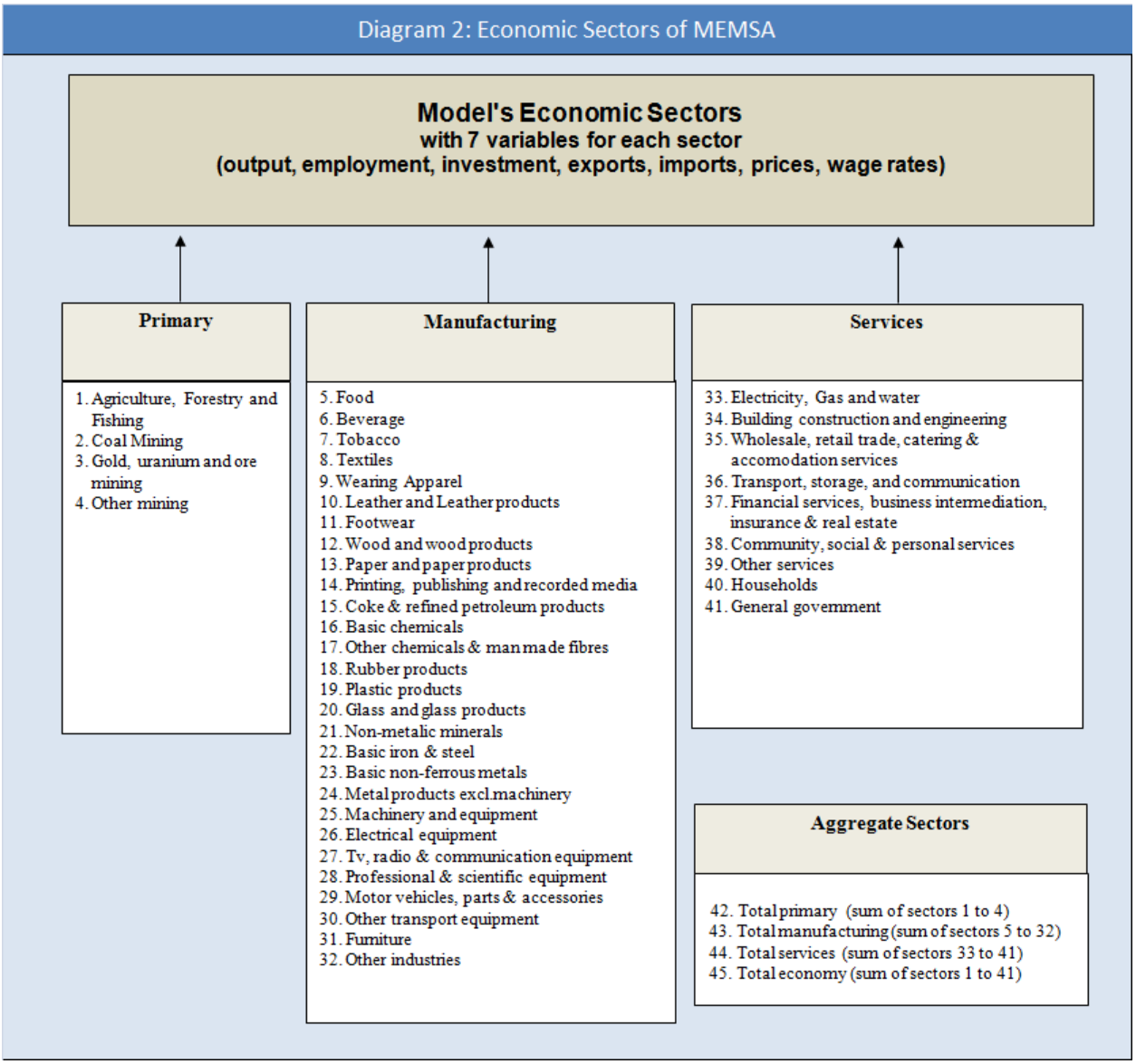
MEMSA's list of exogenous variables includes a number of domestic and international variables. Among exogenous inputs to the model are:

- General government and public corporation investment
- Monetary and fiscal policy rules
- Government current spending
- Tax and subsidy rates
- Population
- Oil prices
- Gold prices
- Annual growth rates of world and regional import demands
- U.S. interest and inflation rates

DIMMSIM's flowchart and economic sectors are presented in Diagrams 1 and 2.

Diagram 1 : Dynamically Integrated Macro-Micro Model of South Africa (DIMMSIM)





The macroeconomic module of DIMMSIM generates annual forecasts of a relatively large number of aggregates and sector-level, nominal and real variables and indictors. It includes indicators related to production, labour market, prices, wages, financial variables and incomes and expenditures of households, business and government. The model projections are consistent across aggregation levels, both in nominal and real terms. The model's key outputs include:

- Projection of key macroeconomic indicators
- Projection of demand for employment (expansion demand) for 45 sectors of the economy
- Projection of output, investment, exports, imports, wages and prices for 45 economic sectors
- Financial indicators such as the interest rate, credit extensions and money supply
- Trade indicators

- Income and expenditure indicators
- Sustainability indicators
- Labour market indicators
- Production indicators
- Demand (expenditure) indicators

DIMMSIM's Microsimulation Component

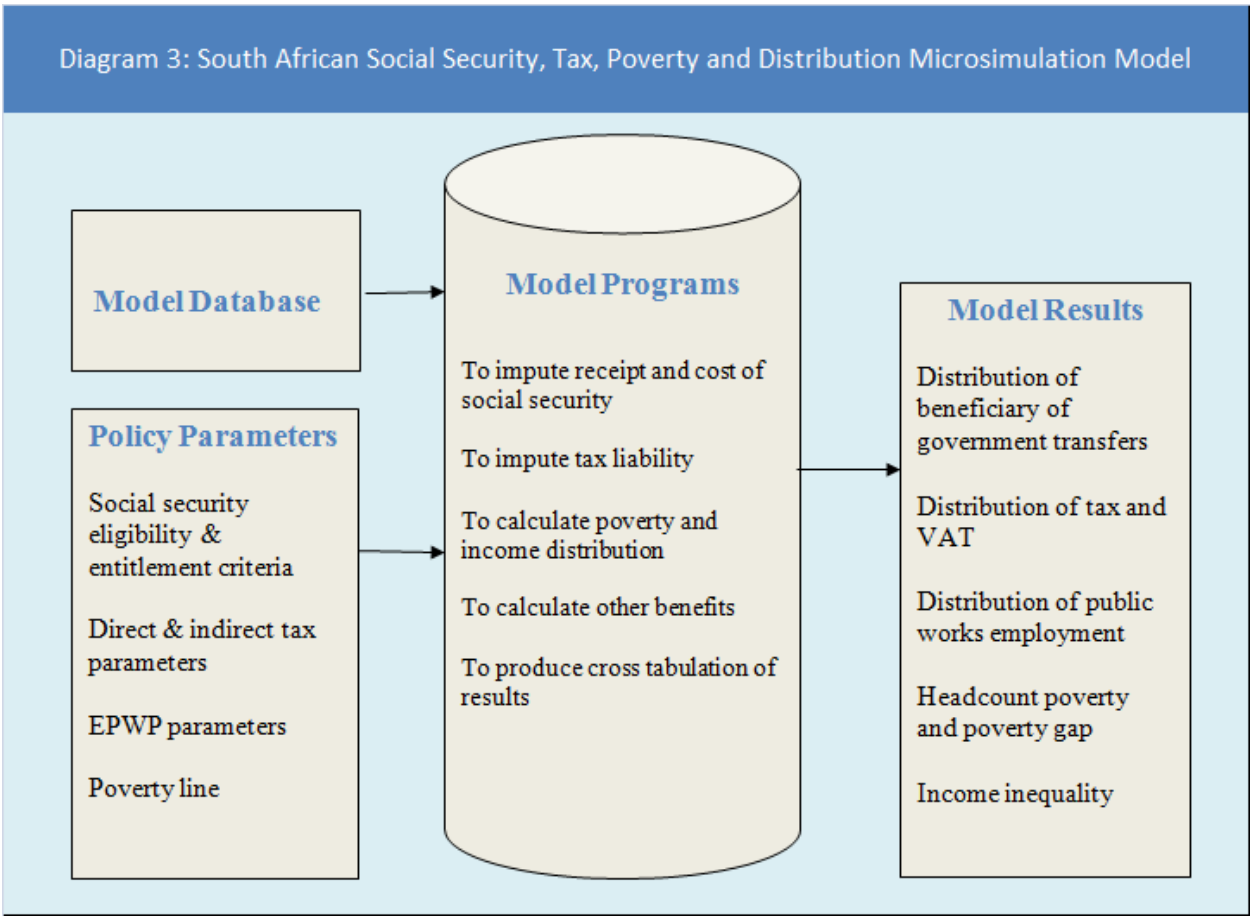
In DIMMSIM, the macroeconomic module is linked to a full microsimulation model of individuals and households to capture the interactions between macroeconomics, industrial structure, household poverty and income distribution in South Africa.

The modelling principle employed to build the South African household model is the microsimulation technique, whose application to socio-economic modelling was pioneered by Guy Orcutt in the United States in the late 50s and early 60s. The South African microsimulation model, originally built as a static model (Adelzadeh, 2001), was subsequently expanded and complemented with dynamic properties to capture the interactions between the macroeconomy and the household sector.

The main components of the model are its database and its tax and social policy modules. The South African model uses a micro-database of individuals and households using official Household Survey, Income Expenditure Surveys, the Census and quarterly Labour Force Surveys, which are the main sources of countrywide economic and demographic microdata. The model's database is prepared in terms of *family units* because it relates closely to the definition of the financial unit used by many of the government tax and transfer programmes.[2] The model's database includes 125,830 individuals, making up 61,684 families or 29,800 households. The database includes weights for individuals, families and households, which are used to translate each of the three samples to their corresponding populations for a given year. Each unit record includes more than 400 columns of information for each individual in the family – including demographic, labour force, marital status, housing, income and expenditure information. Diagram 4 presents the flow chart of the model.

The South African microsimulation model includes three modules for government's taxation policies (i.e. personal income tax, excise tax and value-added tax), six modules for transfer programmes (i.e. old age grant, child support, disability grant, care dependency grant, caregiver support and the basic income grant), a public works module for government's Expanded Public Works Programme (EPWP)and two modules for poverty and inequality.

[2] Since the South African national surveys use 'households', the construction of the unit record of the South African model on the basis of family unit required a substantial amount of programming. The relational codes in the October Household Survey were used to break households into the appropriate number of families.



Interactions Among Modules of DIMMSIM

The model establishes two-way interactions between its macro and micro components such that (a) changes in macroeconomic variables (e.g. changes in prices, employment, wage rates, benefits and transfers) influence welfare of individuals and families; and (b) changes in household-level economic conditions (e.g. poverty, inequality, consumption, taxes, eligibility for social grant) influence macroeconomic outcomes. The Gauss-Seidel's iterative method is mainly used to solve the overall system. The procedure runs the two models for a number of interactions, allowing interactions between the macro and micro parts of the model before it converges and generates the final results for each year of the forecast period. This ensures that each period's results reflect convergence of the macroeconomic variables and household-level variables at the aggregate level. Therefore, the two models are dynamically integrated and generate time-based results that reflect the actual process of policymaking and evaluation.

For more information on DIMMSIM, visit ADRS website or send you enquires to adelzadeh@adrs-global.com.

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ADRS offers expertise in economic modelling, policy research, advisory services, training and capacity building to assist our clients in government, non-governmental organizations, development agencies, and the private sector. ADRS services in economic analysis, policy analysis, economic modelling, innovative web-based modelling interface, and capacity building equip policymakers and others with the tools to design policies that go to the heart of development challenges. To date, ADRS has built economic models for more than 60 countries, exemplifying expertise that enables users to design and test the effectiveness of wide-ranging policy choices.

In South Africa, ADRS has extensive experience in economic research, policy analysis, economic model building and capacity building. Since 1994, ADRS members have worked closely with the South African government at national and provincial levels. ADRS has exclusively built ten web-based user-friendly economic models for South Africa, at national, provincial and municipal levels, that researchers and policy analysts use to design macroeconomic, industrial, poverty, income distribution, education, social security, and energy-emissions policies.

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