LM-EM User Guide

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About LM-EM

Establishing a credible institutional mechanism for skills planning is a key goal of the third National Skills Development Strategy (NSDS III). The main objective of the joint REAL-ADRS project was to support the NSDS III and policymaking in general at the Department of Higher Education and Training (DHET) by increasing the Department's capacity, as well as that of the Sector Education and Training Authorities (SETAs), to anticipate trends in the demand for and supply of skills from the education and training sector.

The Linked Macro-Education Model (LM-EM), a forecasting tool for strategic decision-making, is the end product of the joint REAL-ADRS project. Specifically, LM-EM enables users to design economic and education policy scenarios, quantify their impact, and project future trends in economic indicators and the demand for and supply of educational qualifications.

To capture the interactions between macro- economics and the education sector, LM-EM was created by linking the Applied Development Research Solutions (ADRS) multi-sector Macro- Economic Model of South Africa (MEMSA) to models of supply and demand for occupations and educational qualifications.

The macroeconomic basis of LM-EM provides users with insight on the working of the economy and its direct and indirect connections to the education sector. By accessing the model, users can introduce policy parameter changes and/or shocks, and LM-EM will instantly simulate the impact of the scenario on the South African economy and the education sector. LM-EM provides foresight through its comprehensive and consistent forecasts of economic indicators, demand for occupations, and demand and supply of educational qualifications.

Overall, as a tool for skills forecasting and planning, LM-EM projections of important economic and skills demand and supply indicators offer the necessary intelligence for detailed and systematic decision making. The model produces forecasts in six principle categories: macroeconomic and industry indicators, employment, demand/supply of educational qualifications, demand for occupations, skills (im)balances by educational qualifications, and(im)balances in the labour market.

1 Getting Started

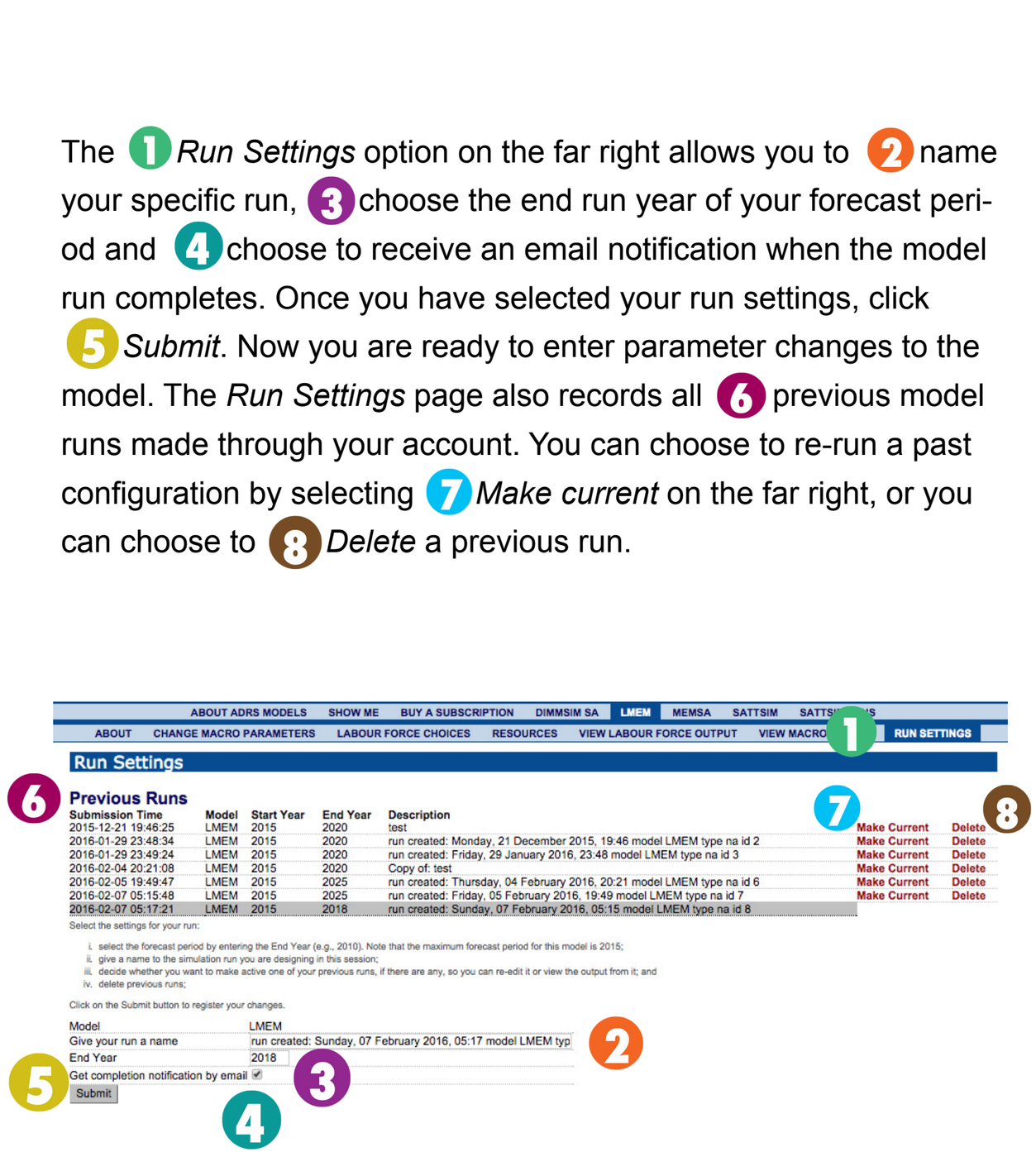
Accessing LM-EM

To start using LM-EM, first log-in from the home page at adrs-global.com using your username and password. Once logged in, choose 1 *Economic Models*, then 2 *LMEM*. The 3 *About* page will appear as the default to provide some basic information regarding the model before getting started.

1 Getting Started

Adjusting Run Settings

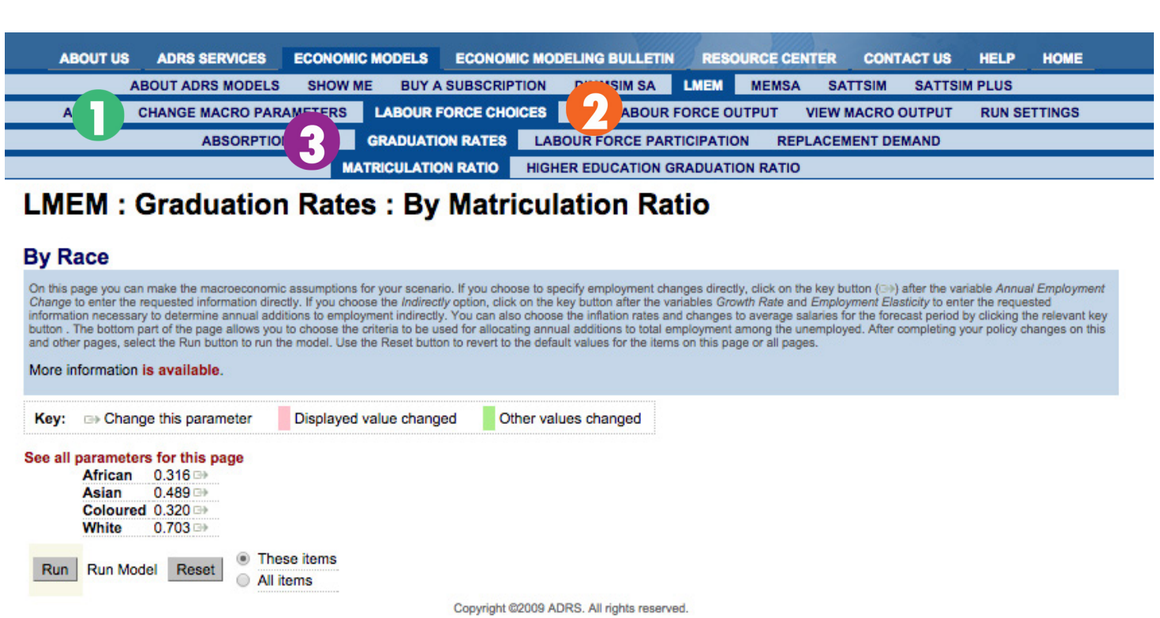
The 1 *Run Settings* option on the far right allows you to 2 name your specific run, 3 choose the end run year of your forecast period and 4 choose to receive an email notification when the model run completes. Once you have selected your run settings, click 5 *Submit*. Now you are ready to enter parameter changes to the model. The *Run Settings* page also records all 6 previous model runs made through your account. You can choose to re-run a past configuration by selecting 7 *Make current* on the far right, or you can choose to 8 *Delete* a previous run.



2 Making Changes

Navigating the Menu

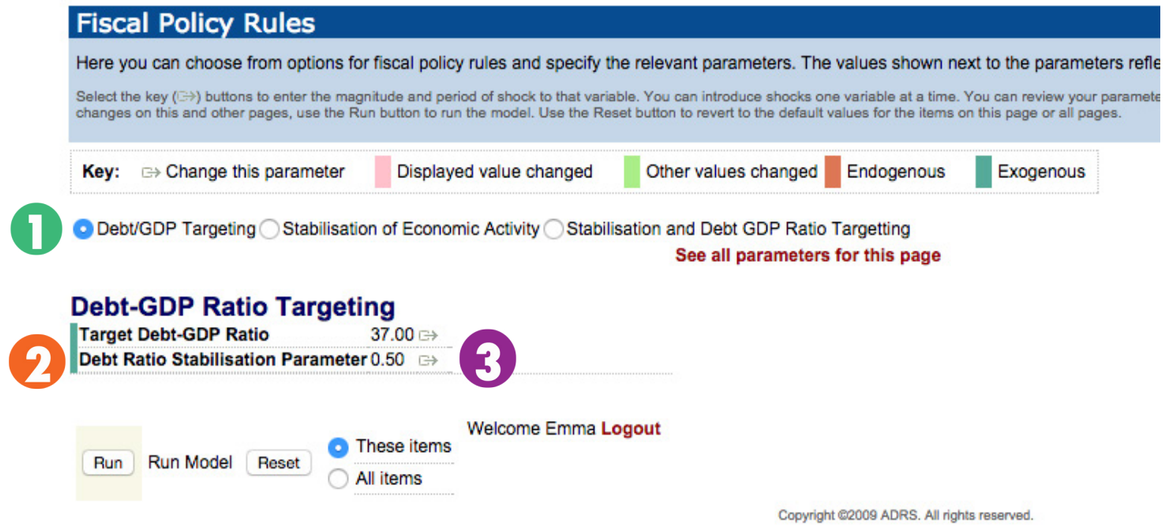
There are two categories of changes you can make to the model, 1 macroeconomic parameter changes and 2 labour force parameter changes. Both types of changes can be made in the same run. (Note: Changes only need to be made to parameters specific to your scenario, all other parameters will be run on the default value.) Each category has various subcategories of parameters that appear in a 3 second tier menu after choosing 1 or 2.



2 Making Changes

Identifying Parameters

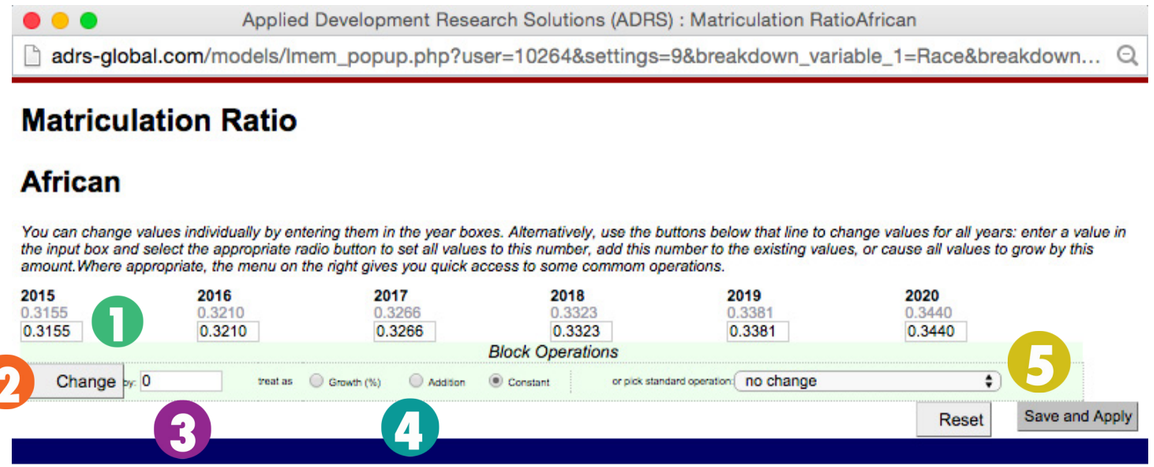
Some pages have 1 secondary parameter options available. Once you locate the 2 specific parameter you would like to change, click the 3 small arrow icon to the right. This will open up a new window.



2 Making Changes

Making Changes to Parameters

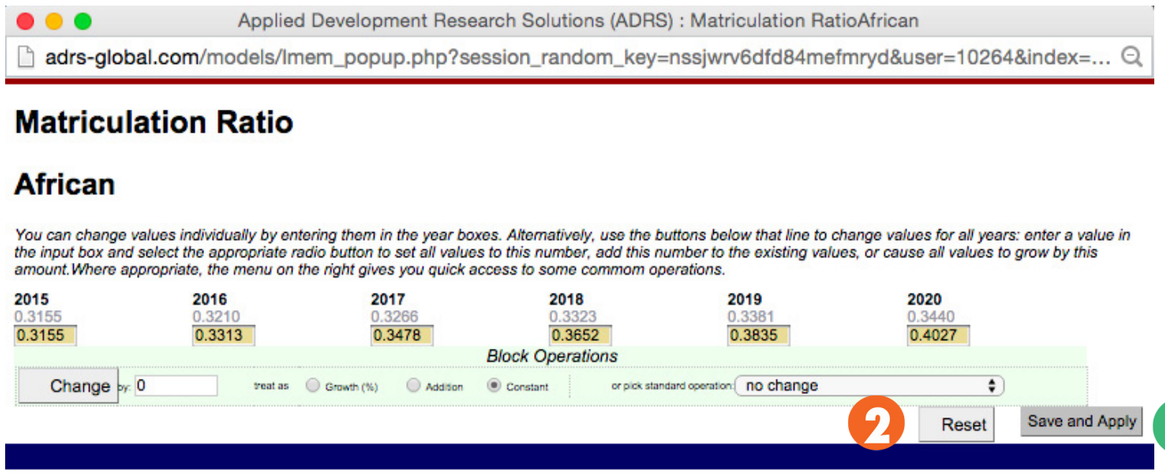
In the small pop-up window, there are three ways to change the parameter values. You can change each year's value manually in the 1 value boxes. You can also use the 2 *Change* by option under the *Block Operations*. To do so, enter a value in the 3 box and choose the corresponding 4 *treat as* option (either growth, addition, or constant). You can also change a parameter value by choosing a 5 standard operation under *Block Operations*. The second and third options will be applied to all year values.



2 Making Changes

Applying Changes

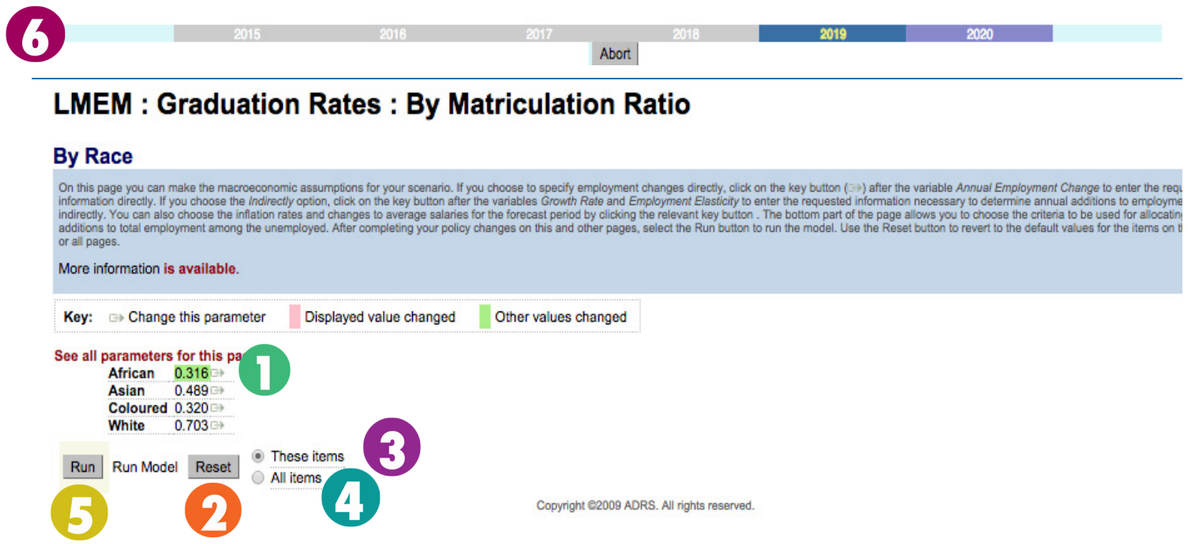
After the correct changes have been selected, choose 1 *Save and Apply*. If necessary, the 2 *Reset to Defaults* option will reset all year values with no effect on other parameters. Once you have chosen 1 *Save and Apply*, the values in the pop-up window will turn gold to register the changes. If the values are correct, you can click out of the separate window.



2 Making Changes

Running the Model

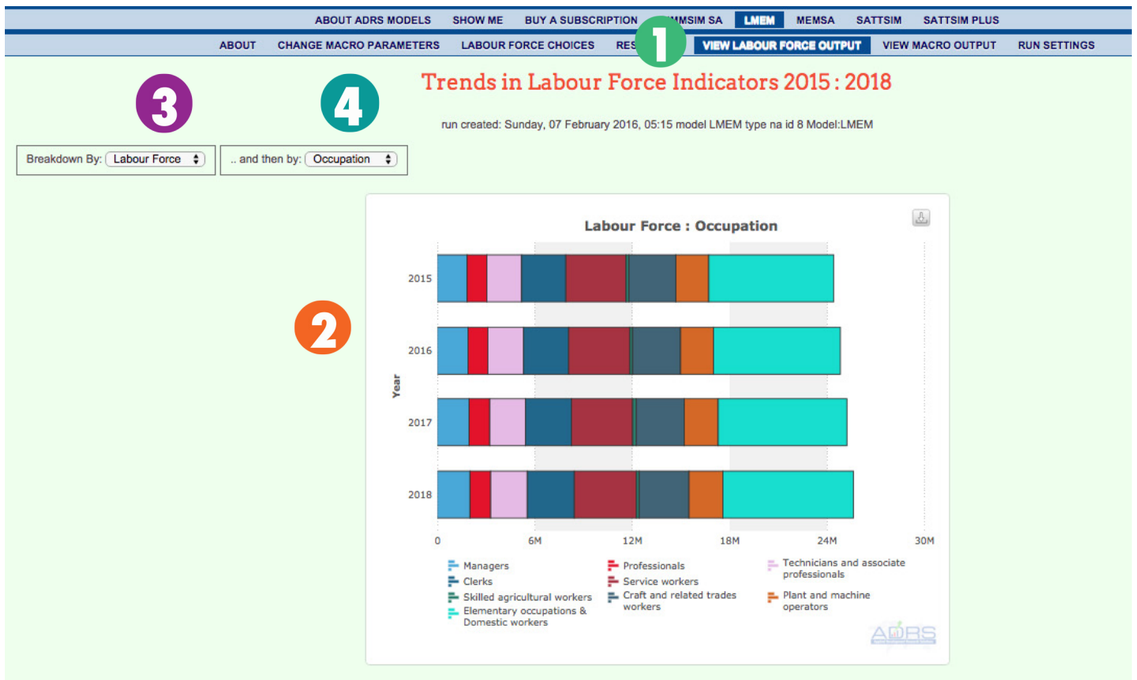
After modifying a parameter, the 1 value will appear highlighted in green on the parameter page to indicate it has been successfully changed. The 2 *Reset* option at the bottom of each parameter page allows you to either reset the parameter values for 3 *These items*, meaning only the parameters on this specific page, or for 4 *All items*, meaning all parameters in the model. Once you have made all your desired changes to both macroeconomic and labour force parameters, choose 5 *Run* at the bottom of any of the parameter change pages to run the model. This will initiate a 6 processing bar at the top of the page indicating that the model is being run.



3 Viewing Results

Viewing Labour Force Output

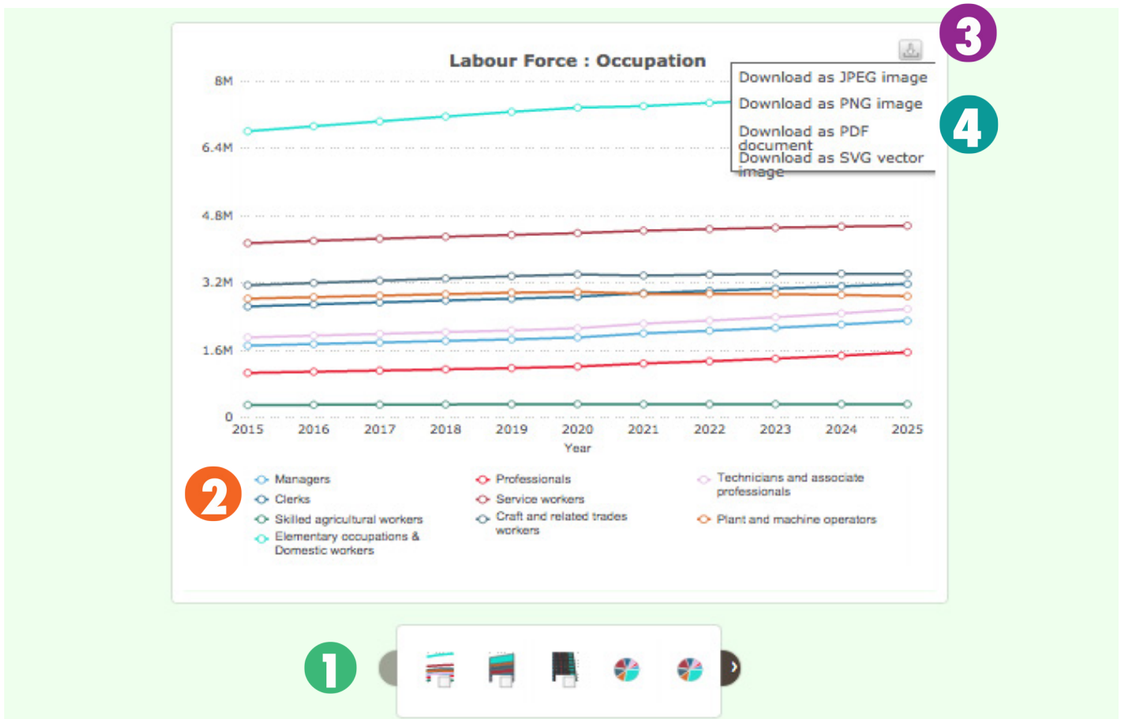
Once the model has finished running your scenario and parameter changes, you will be automatically brought to the 1 *View Labour Force Output* page. This page displays the education results in both 2 graph and table form. The results can also be broken down by different indicators and categories. To see different types of model results in the Labour Force output, click the 3 drop down menu and choose an indicator. You can then further customize the results by clicking the 4 secondary drop down menu and selecting a second category by which to break down the forecasting projections. For some categories, third and fourth break down options are available.



3 Viewing Results

Customizing Charts

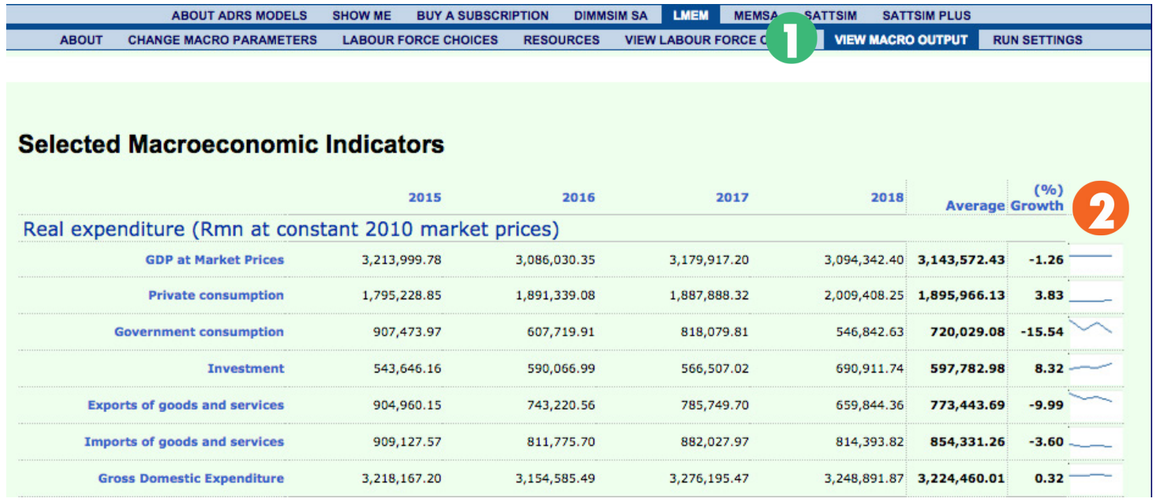
The graph type can be changed by clicking the different options in the 1 carousel below the graph. The graphs can then be further tailored by clicking on the 2 legend entries to exclude certain sets. You can export the desired chart by clicking the 3 small square icon in the upper right corner, prompting you to choose between 4 JPEG, PNG, PDF, and SVG vector file types for the download. The table represents the same data that is graphed in the chart and can be highlighted with your cursor to be copied and pasted into any document.



3 Viewing Results

Viewing Macroeconomic Output

You can also choose to 1 *View Macro Output* in the menu bar, which will bring you to a page of selected macroeconomic indicators. Charts for each individual indicator can be viewed by clicking the 2 chart icon to the right of the table. The whole table or portions of the table can be copied and pasted into any document by highlighting the desired sections with your cursor.



4 Accessing Support

Finding More Resources

Finding More Resources

For additional resources regarding the Linked Macro-Education Model, including a glossary of terms, technical reports on the individual modules, and examples of model application, see the *Model resources* page. If you can't find the answer to your question, feel free to contact us at info@adrs-global.com!