higher education & training
Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

DHET Occupations/Skills Forecasting
LM-EM
Linked Macro-Education Model

DHET SKILLS PLANNING TOOL

Achieving Evidence-Based Skills Planning with LM-EM

"What is needed is knowledge and planning instruments for the system and research-based intelligence for strategic decision-making for the post school system."

-Dr. Nzimande
Minister of Higher Education and Training
March 2010 Budget Speech

The Linked Macro-Education Model (LM-EM) is a forecasting tool for strategic decision-making. 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.

*LM-EM is a tool designed to provide the DHET with **insight** into the relationship between macro-economic performance and the education sector, and **foresight** by projecting future demand and supply of occupations and educational qualifications. The evidence-based tool offers intelligence for **better decisions**.*

Better insight.

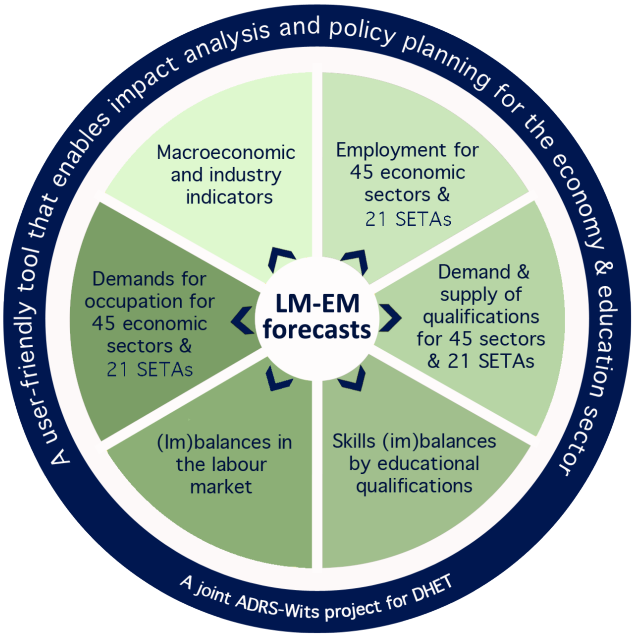
Better foresight.

Better decisions.

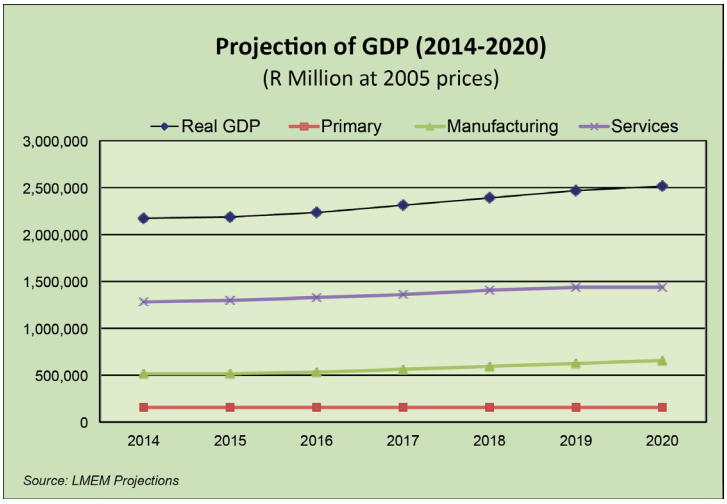
LM-EM Projections

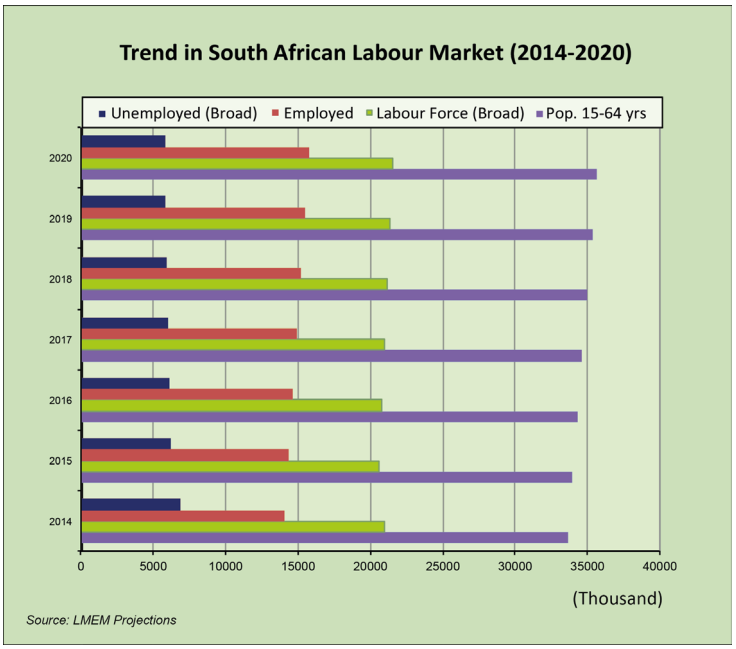
LM-EM produces forecasts in six principle categories. The graphic below illustrates these categories which include: macroeconomic and industry indicators, employment, demand/supply of educational qualifications, demand for occupations, skills (im)balances by educational qualifications, and (im)balances in the labour market. The next pages provide examples of LM-EM projections from each category for a hypothetical economic and education scenario. The hypothetical scenario forecasted entails: no change in fiscal and monetary policies; annual 8% nominal increase in government current consumption expenditure; gradual increase in public investment that will reach R360 billion by 2020 in nominal terms; and other domestic and international assumptions.

LM-EM Forecasting Capabilities



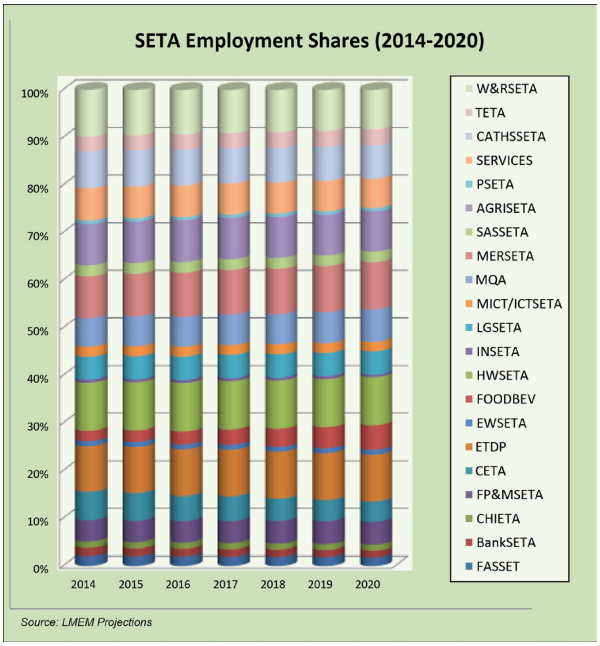
Macroeconomic Trends

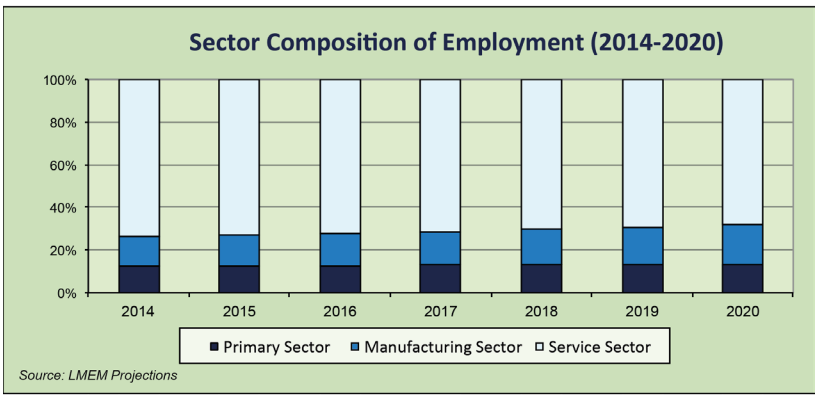




LM-EM provides projections of economic growth for the economy, its 45 sectors (4 primary, 28 manufacturing, 9 services, and 4 aggregates), and 21 SETAs. Under the hypothetical scenario, the South African economy is projected to expand at an average annual rate of 2.4% between 2015-2020.

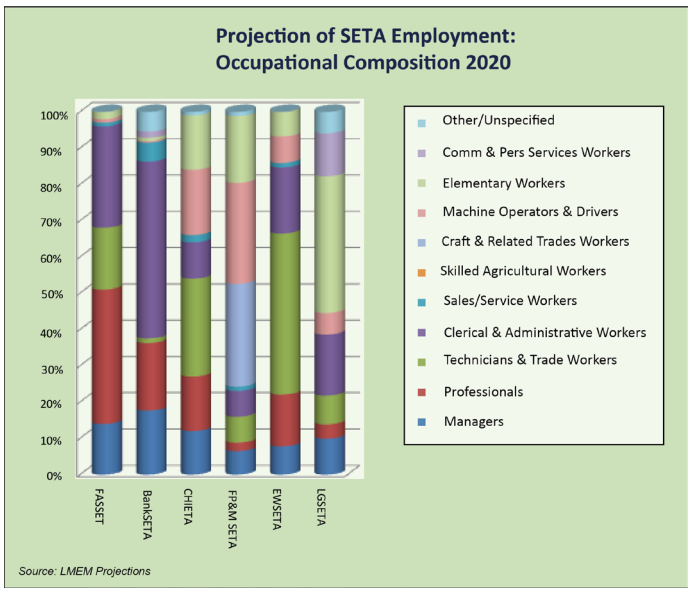
Employment

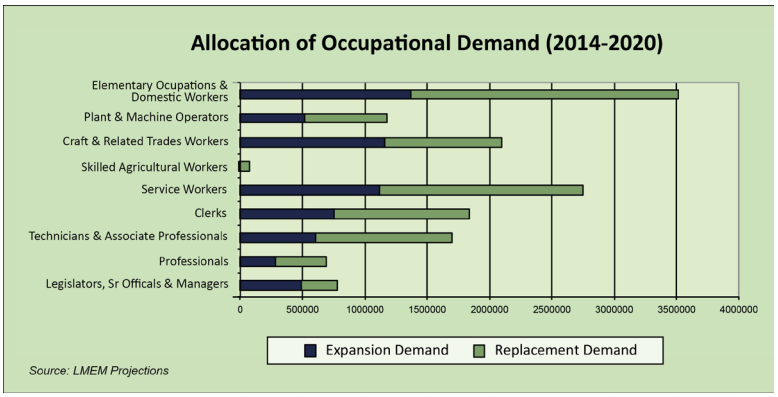




LM-EM simulates the impact of various policy scenarios on the structure of the economy. LM-EM provides projections of employment for 45 economic sectors and the distribution of total employment among 21 SETAs. For example, under the hypothetical scenario, the output and employment shares of manufacturing sector are projected to increase by 3 percent as the output share of the service sector declines over the next six year period. The employment share of the service sector is projected to decline by 6 percent as opposed to 1% and 5% increases in primary and manufacturing sector employment.

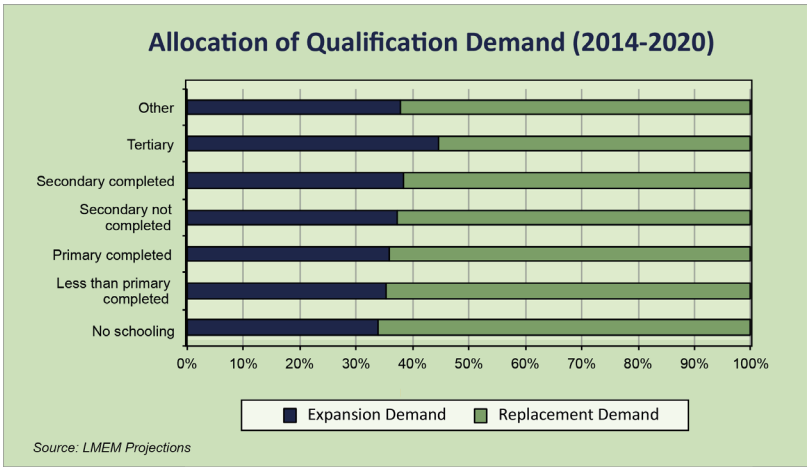
Occupation Demand

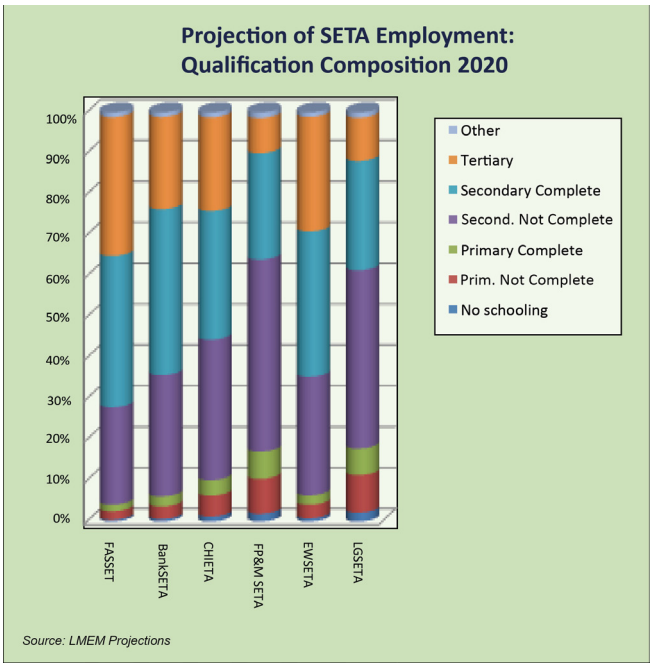




LM-EM's occupational demand module uses projections of sector employment and demographic evolution to produce projections for various occupations at national, sector and SETA levels. It also provides separate projections for the annual occupational demand due to economic growth (expansion demand) and replacement demand factors (e.g., retirement, mortality, emigration).

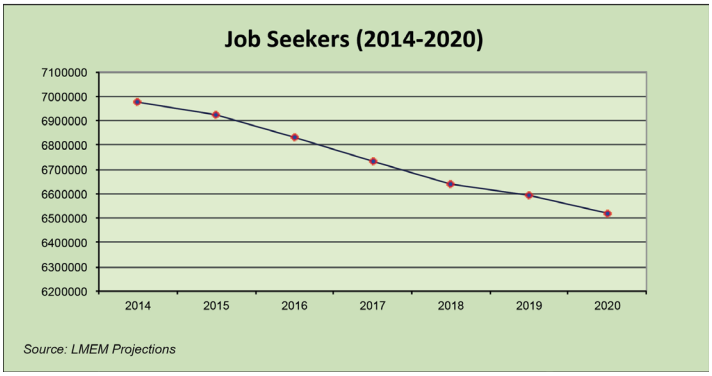
Education Qualification Demand





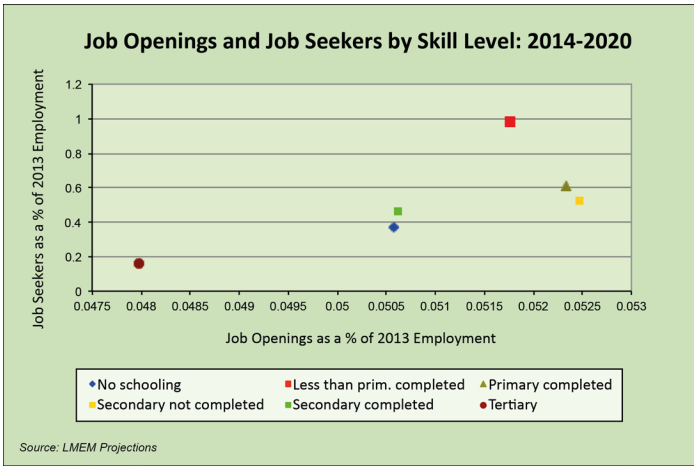
LM-EM's module on educational qualifications uses the statistical relationship between employment, occupations, and demographics to produce projections of educational qualifications at national, sector and SETA levels. For example, under the current scenario, about 47% of job openings over the next 6 years will require high school diploma and tertiary education.

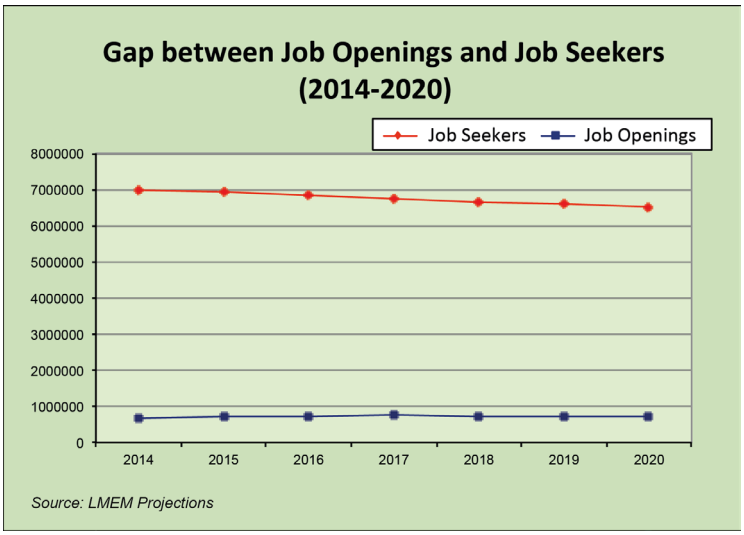
Job Seekers and Qualifications



LM-EM forecasts trends in the number of job-seekers and their educational qualifications. For example, under the hypothetical scenario, the total number of job-seekers is projected to gradually decline, and by 2020 the number of job seekers with a tertiary or secondary level of education will increase significantly.

Labour Market (Im)balances





LM-EM's module on labour market imbalances uses the model's detailed annual projections of job openings and job seekers to quantify the magnitude of imbalances in the labour market. For example, under the hypothetical scenario, the overall imbalance in the labour market is expected to gradually decline. Meanwhile, the skills gap between the demand and supply of qualifications is expected to remain significantly high.

For more information about LM-EM or the Labour Market Intelligence Programme contact:

ADRS

Dr. Asghar Adelzadeh
Director and Chief Economic Modeller
Tel: (+27) (0)11 083 6474 (S.A.)
Tel: (+1) 916 505 4874 (U.S.A.)
Email: Asghar@adrs-global.com

DHET

Ms. Mamphokhu Khuluvhe
Director: Planning, Monitoring and Evaluation Co-ordination
Tel: (+27) (0)12 312 5465
Email: khuluvhe.m@dhet.gov.za

WITS

Mr. Siphelo Ngcwangu
Research Associate
The REAL Centre
Tel: (+27) (0)11 687 3074
Email: Siphelo.Ngcwangu@wits.ac.za

ADRS Applied Development Research Solutions

higher education & training
Department: Higher Education and Training
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