Linked Macro-Education Model: A Forecasting and Skills Planning Tool for South Africa

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Presentation to the AMC Conference
Johannesburg, South Africa

22 July 2015

Linked Macro-Education Model

❖ **The Linked Macro-Education Model (LM-EM)** has been developed as part of the Department of Higher Education and Training's Labour Market Intelligence Programme (LMIP), and it has been delivered through a joint ADRS-Wits REAL Centre partnership.
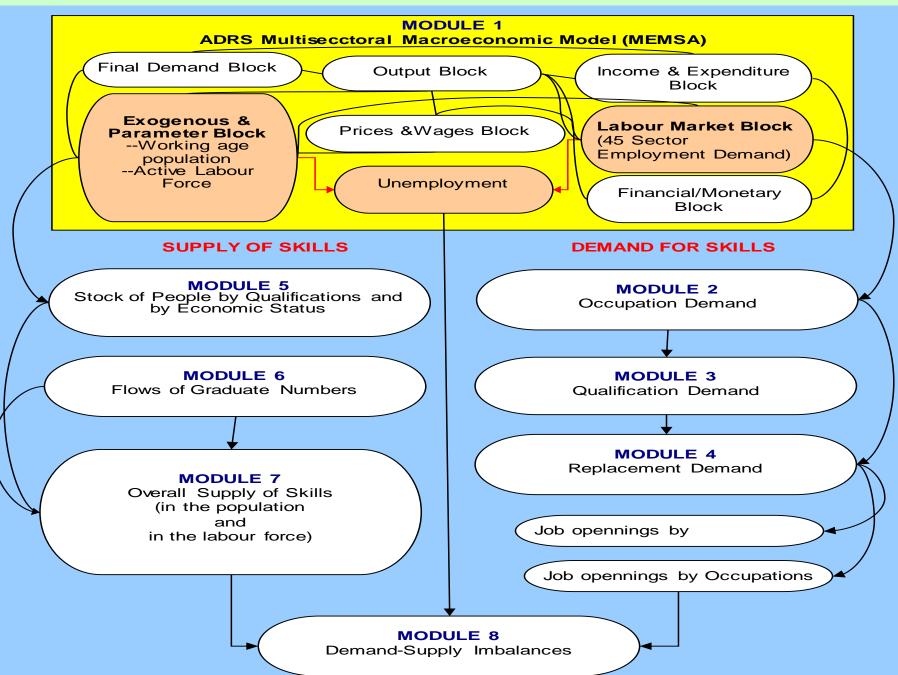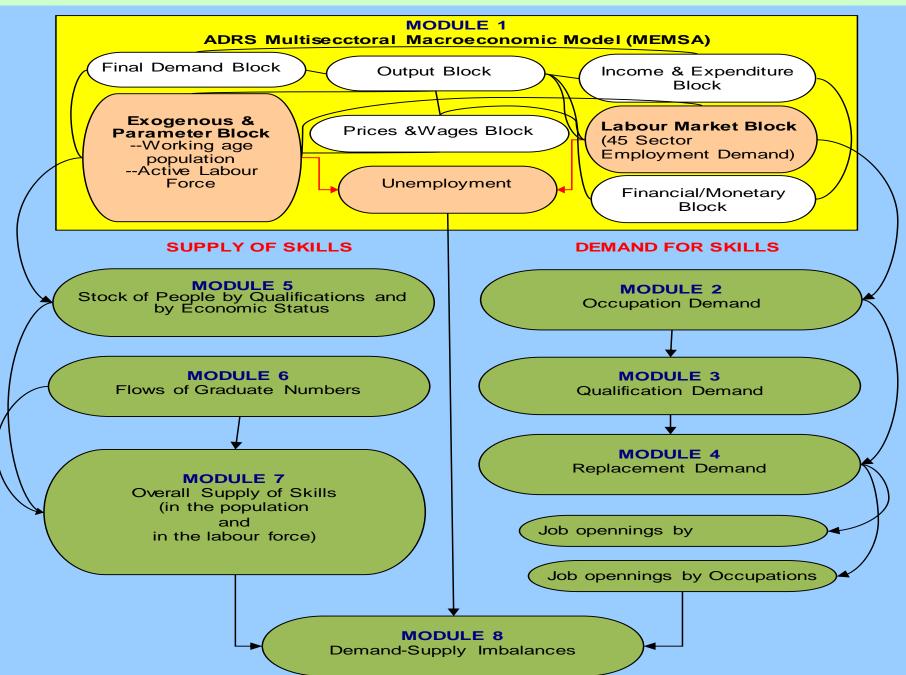
Linked Macro-Education Model

❖ The 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 macroeconomics and the education sector, LM-EM uses a full macroeconomic model of South Africa with links to models of supply and demand for occupations and educational qualifications.

Linked Macro-Education Model (LM-EM)

MODULE 1
ADRS Multisecctoral Macroeconomic Model (MEMSA)

Final Demand Block

Output Block

Income & Expenditure Block

Exogenous & Parameter Block
--Working age population
--Active Labour Force

Prices &Wages Block

Labour Market Block
(45 Sector Employment Demand)

Unemployment

Financial/Monetary Block

SUPPLY OF SKILLS

DEMAND FOR SKILLS

MODULE 5
Stock of People by Qualifications and by Economic Status

MODULE 2
Occupation Demand

MODULE 6
Flows of Graduate Numbers

MODULE 3
Qualification Demand

MODULE 7
Overall Supply of Skills
(in the population
and
in the labour force)

MODULE 4
Replacement Demand

Job opennings by

Job opennings by Occupations

MODULE 8
Demand-Supply Imbalances

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- Output Block
- Income & Expenditure Block

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LM-EM: A Skills Forecasting & Planning Tool

❖ **LM-EM provides insight on the working of the economy**:
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.

❖ **LM-EM provides foresight into future:**
Through its comprehensive and consistent forecasts of economic indicators, demand for occupations, and demand and supply of educational qualifications, it provides foresight into future.

❖ **LM-EM as a tool for decision making**:
Overall, LM-EM projections of important economic and skills demand and supply indicators offer the necessary intelligence for detailed and systematic decision making.

LM-EM Projections
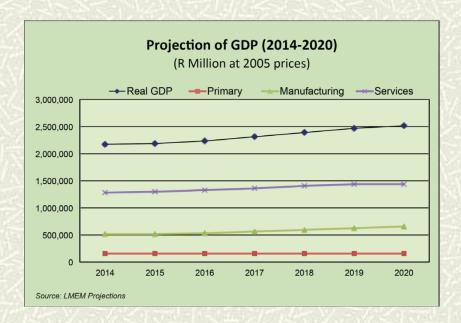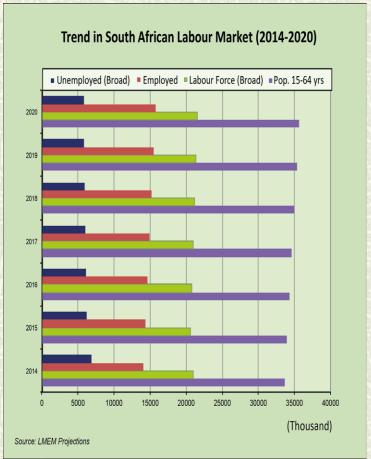
LM-EM produces forecasts in six principle categories

Macroeconomic Trends

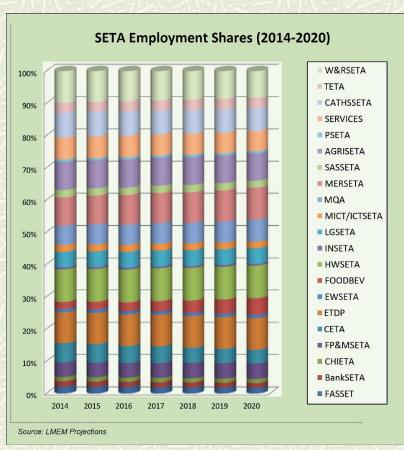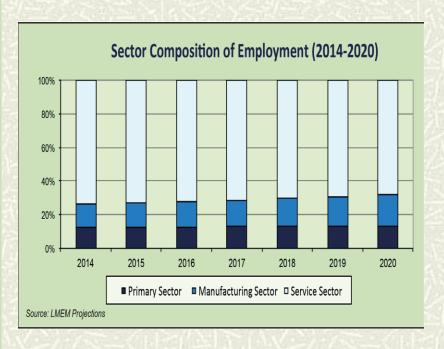LM-EM provides projections of trends for all key macroeconomic indicators

Projection of GDP (2014-2020)
(R Million at 2005 prices)

Source: LMEM Projections

Trend in South African Labour Market (2014-2020)

Source: LMEM Projections

Employment

LM-EM provides projections of employment for 45 economic sectors and allocation among 21 SETAs

SETA Employment Shares (2014-2020)

Legend: W&RSETA, TETA, CATHSSETA, SERVICES, PSETA, AGRISETA, SASSETA, MERSETA, MQA, MICT/ICTSETA, LGSETA, INSETA, HWSETA, FOODBEV, EWSETA, ETDP, CETA, FP&MSETA, CHIETA, BankSETA, FASSET

Source: LMEM Projections

Sector Composition of Employment (2014-2020)

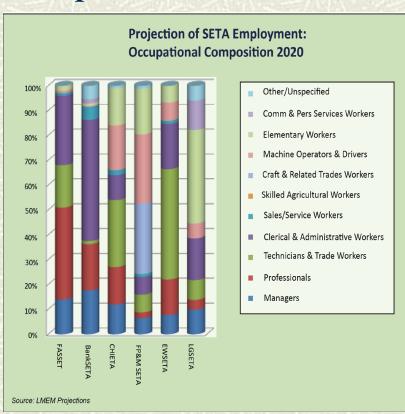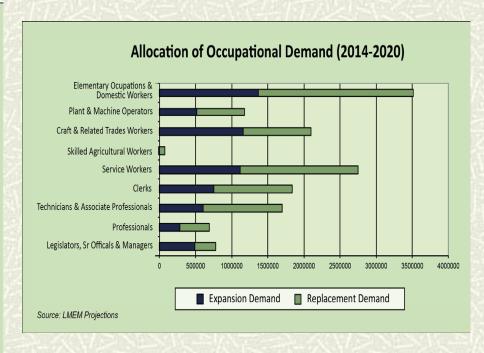Primary Sector, Manufacturing Sector, Service Sector

Source: LMEM Projections

Occupation Demand

LM-EM produces annual projections of various occupations at national, sector and SETA levels

Projection of SETA Employment: Occupational Composition 2020

Legend:
- Other/Unspecified
- Comm & Pers Services Workers
- Elementary Workers
- Machine Operators & Drivers
- Craft & Related Trades Workers
- Skilled Agricultural Workers
- Sales/Service Workers
- Clerical & Administrative Workers
- Technicians & Trade Workers
- Professionals
- Managers

Source: LMEM Projections

Allocation of Occupational Demand (2014-2020)

Categories: Elementary Ocupations & Domestic Workers, Plant & Machine Operators, Craft & Related Trades Workers, Skilled Agricultural Workers, Service Workers, Clerks, Technicians & Associate Professionals, Professionals, Legislators, Sr Officals & Managers

Legend: Expansion Demand, Replacement Demand

Source: LMEM Projections
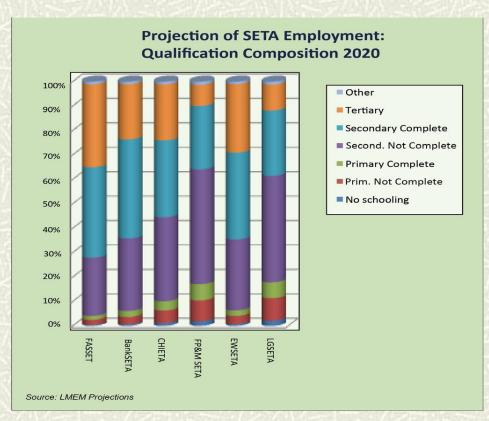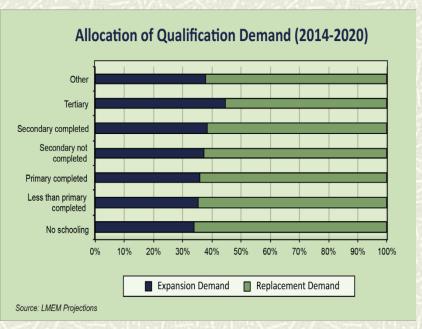
Education Qualification Demand

LM-EM produces projections of demands for various qualifications at national, sector and SETA levels

Projection of SETA Employment: Qualification Composition 2020

Legend:
- Other
- Tertiary
- Secondary Complete
- Second. Not Complete
- Primary Complete
- Prim. Not Complete
- No schooling

Categories: FASSET, BankSETA, CHIETA, FP&M SETA, EWSETA, LGSETA

Source: LMEM Projections

Allocation of Qualification Demand (2014-2020)

Categories: Other, Tertiary, Secondary completed, Secondary not completed, Primary completed, Less than primary completed, No schooling

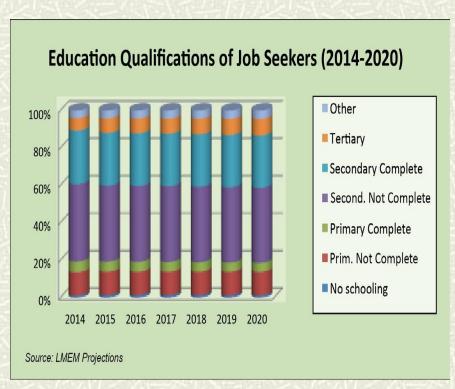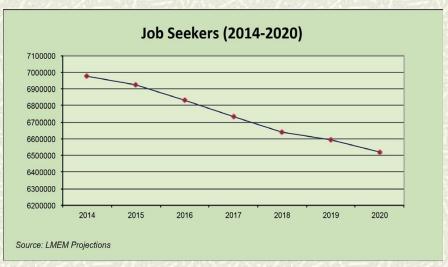Legend: Expansion Demand, Replacement Demand

Source: LMEM Projections

Job Seekers & Qualifications

LM-EM forecasts trends in the number of job seekers and their educational qualifications

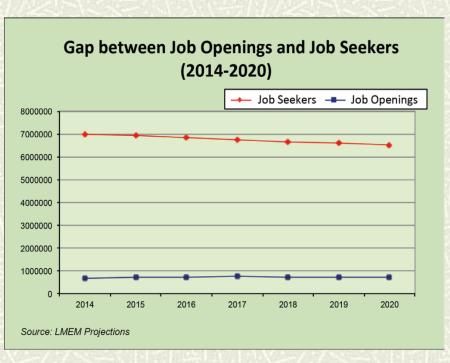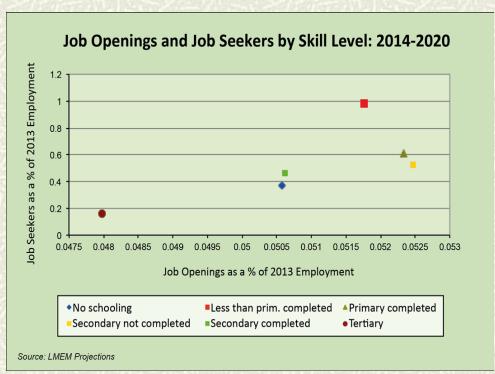Education Qualifications of Job Seekers (2014-2020)

- Other
- Tertiary
- Secondary Complete
- Second. Not Complete
- Primary Complete
- Prim. Not Complete
- No schooling

Source: LMEM Projections

Job Seekers (2014-2020)

Source: LMEM Projections

Labour Market (Im)balances

LM-EM forecasts labour market imbalances and the skills gap by qualifications

Gap between Job Openings and Job Seekers (2014-2020)

Source: LMEM Projections

Job Openings and Job Seekers by Skill Level: 2014-2020

Source: LMEM Projections

Overall ….

LM-EM is a state of art tool for skills planning and forecasting. Similar models are being used for skills planning and forecasting in developed countries.

We are hoping that the LM-EM will help build a deeper understanding of the education sector and its relation to the rest of the economy that can facilitate the effective use of the model as a tool for skills planning and forecasting.

Thank you for your time.