Anticipating Future Skills (AFS) Series

The methodology

The Anticipating Future Skills (AFS) Series provides employment projections over a five-year period for the following measures in a variety of combinations:

- 19 regions based on ABS geographical classification (SA4 level but with some adaptions[1])
- 358 occupation unit groups
- 214 industry groups
- 6 levels of qualification
- 11 broad fields of qualification, disaggregating to 67 narrow fields.

The modelling for the AFS Series is conducted using the Victoria University Employment Forecasts (VUEF) model. This is a family of models centred on the Victoria University Computable General Equilibrium (CGE) model of the Australian economy, which brings together a large body of demographic, employment and macroeconomic data and government and industry forecasts as seen in Table 1.

Aggregate employment in VUEF is calibrated to be consistent with the forecasts of Queensland Treasury and regional forecasts are based on population forecasts from the Queensland Government as well as data from the Census for Population and Housing. It is assumed that the Treasury employment forecasts consider the impact of major projects on employment. Data from Education and Work is used to project skill acquisition over the forecast period by age and sex; this is interfaced with population projections by age and sex to form the skill projections that are input into the VUEF model.

The supply of qualifications imposes a restriction on occupation supply, and workers are assumed to choose an occupation based on the relative wages of the occupations for which they were qualified.
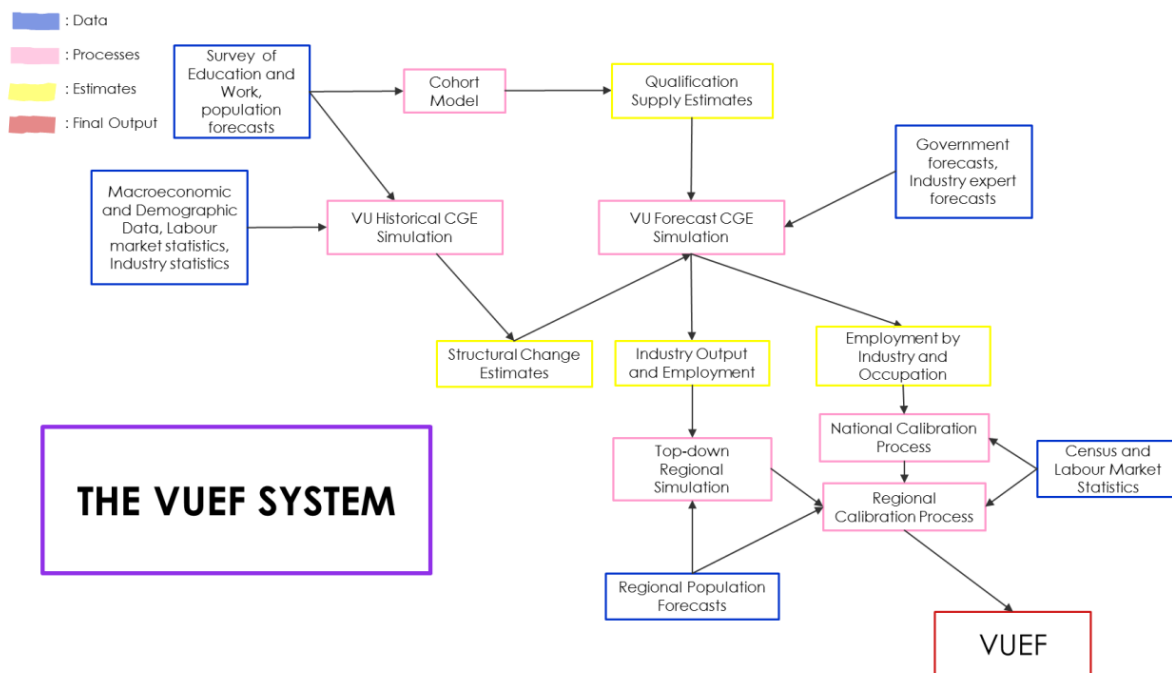
Table 1: Inputs to VUEF model

ABS sources	Other sources
Census of Population and Housing	Queensland economic forecasts/projections – Budget strategy and outlook
Education and Work, Australia	Projected population, by series, Queensland, 2021 to 2071
Labour Force, Australia, Detailed – quarterly	
Labour Force, Australia	Queensland Government population projections: Regions, 2021 to 2046
Australian National Accounts including Input-Output Tables	Intergenerational Report
Balance of Payments and International Investment Position, Australia	Resources and Energy Quarterly
Wage Price Index, Australia	Tourism Research Australia Tourism Forecasts
Australian Industry	Population Projections, Australia
International Trade in Goods and Services, Australia	
National, state and territory population	

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[1] The five Brisbane SA4s have been amalgamated into one Brisbane region, while the Queensland – Outback has been broken into its SA3 components – Far North, Outback – North and Outback – South.

The VUEF system diagram (Figure 1) illustrates the way in which the VUEF model combines external inputs with estimates derived within the model and the CGE model processes.

Figure 1: VUEF system diagram

Testing and validation

Jobs Queensland undertakes a comprehensive testing and validation process once the first set of draft data is received. Initially, the modelling is compared with any available new data to ensure employment trends are consistent. Outliers or anomalies at the regional or industry level are identified. Feedback is provided to the modeller who will rerun the model if required and provide a second draft set of data, which will undergo a similar analysis.

Next, industry representatives are invited to testing and validation sessions to gather feedback on:

- the likelihood of employment trends as presented in the data
- the accuracy of the assumptions and projection trends for each scenario and
- industry or regional developments that may substantially impact the draft projections.

This feedback is collated and analysed, with independent confirmation and additional information collected by Jobs Queensland to help identify those things that will materially affect employment. In addition, Jobs Queensland monitors major developments, policy changes, government announcements and any other relevant factors that have emerged post-Budget that should be reflected in regional and industry employment projections.

The modelling is rerun and rechecked for consistency and credibility before being published on the Jobs Queensland website.

Further details about the model are available at Dixon. Janine. (2017). Victoria University Employment Forecasts 2017 edition. CoPS Working Paper No.G-277.
Retrieved from www.copsmodels.com/ftp/workpapr/g-277.pdf.