



**FEDERAL-F: A multi-regional multi-sectoral  
dynamic model of the Australian economy**

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by

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## ABSTRACT

This thesis is concerned with the construction, implementation, and application of a large-scale bottom-up multi-regional multi-sectoral dynamic CGE model of the Australian economy, FEDERAL-F. This model traces its lineage to the multi-regional comparative-static FEDERAL model and the national dynamic MONASH model. Like the latter model, FEDERAL-F links a sequence of single-period equilibria via stock-flow relationships. However unlike MONASH, it features bottom-up modelling of regional activity, detailed fiscal modelling, and accounting for changes in household capital ownership. Unlike FEDERAL, FEDERAL-F is dynamic, it features more plausible modelling of inter-regional migration, and it includes a complete set of regional and national accounts.

A version of FEDERAL-F focussing on the economies of Tasmania and the rest of Australia is implemented. This model is used for five sets of illustrative applications.

The first set of simulations (the historical simulations) derive values for certain otherwise unobservable variables (such as productivities, household tastes, positions of export demand schedules, and various government policy instruments) for the period 1992/93 to 1998/99. The results from these simulations then form part of the input to the second set of simulations. These simulations evaluate the individual contributions of these variables, in addition to the other exogenous shocks to which both economies were subject over the period, to a range of economic indicators. This allows the causes of Tasmania's relatively poor growth experience to be identified and evaluated.

The third set of simulations (the forecasting simulations) extrapolate into the future the structural and other changes derived in the historical simulations, thereby generating forecasts for the economic prospects of both the Tasmanian and Mainland economies. These forecasts project a continuation of Tasmania's relatively slow growth rate, and hence a continuation in the state's historical trend of accounting for a declining share of national activity.

Finally, the results of both the historical and forecasting simulations provide the base case against which two policy scenarios are evaluated. The first examines the impact on the Tasmanian and Mainland economies of microeconomic reform in the utilities sector. The second investigates the potential scope and efficacy of possible Tasmanian government policies aimed to redress the state's declining share of national economic activity.