

# 2005 Agency Report: ABARE, Australia

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Study of economic and environmental issues at ABARE that involve shorter time horizons are normally done with the recursive version of the global trade and environment model (GTEM). For issues involving a longer time horizon, such as addressing the problem of global climate change effectively, ABARE is working to develop an integrated assessment model of climate change using an intertemporal version of GTEM at its core. A prototype of the model, called the global economy, trade, environment and climate system (GETEC), has been assembled this year and a paper based on this model will be presented to the conference. In addition to these, ABARE also has a further 15 different models to meet various analytical requirements often posed by a range of policy questions (please visit [www.abareconomics.com](http://www.abareconomics.com) for details).

Studies based on GTEM rely heavily on the GTAP database. So far the GTAP database forms the social accounting matrix of GTEM and the emissions and population databases of GTEM are compiled in-house by ABARE. We appreciate ongoing efforts by GTAP staff to improve the quality of the database over time. We are more than happy to be a part of this ongoing process. We are looking forward to using version 6 of the GTAP database, including updated energy, emissions and land use databases.

We have now come to appreciate an additional dimension of the database that has not received its due attention so far - the spatial dimension. There are certain commodities, such as electricity, for which trading partners need to be connected to have a nonzero trade (ignoring re-exports). If significant trade is reported between two regions that are disjoint, we have a problem. Even a small number in the base year may grow to a very large number if the simulation horizon is long enough. A routine that checks and corrects such quantities as anomalous would improve the quality of the database. Similarly, when we aggregate regions to create a mega-region, such as EU, then this mega-region by construction becomes a region on its own right. Intra-regional trade in this case does not really make sense. Allocation of any intra-regional trade, which results from regional aggregations, to 'domestic' users as domestic purchases would be desirable. We would propose that these two issues be included in the forward work program of the Centre.

## **ABARE research based on the GTAP Database 2004-05**

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