

## Provision of Economic Data and Modelling in Wales

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### Introduction

The use of economic modelling is a critical component for the assessment of economic policy for any Government. Robust models are a necessity for any legislative body considering alterations to taxation. To date, there have been limits on the extent to which economic models of Wales have been used to inform policy. This contrasts with the situation in Scotland where for well over two decades there has been significant economic data gathering and interrogation done, first by academics but then by the Scottish Government, to inform both basic and more complex models of the Scottish economy. Scotland benefits from better details of the economic links between regional industries, government and households, and has official Input-Output tables (see below) detailing these links. Added to this is the significant economic modelling work conducted at Strathclyde and Heriot Watt Universities, where sophisticated macroeconomic models for Scotland have utilised this data, delivering unique policy insights.

For Wales there has been a conflation of two problems, the first is having greater **Data** and the second is the ability to produce and run **Economic Models**. Each of these are inherently important for Wales but having one without the other will be of little use. What is required is a fundamental change with which “economic intelligence” is gathered, analysed and disseminated.

## Data

The biggest challenge presently is the collection and provision of disaggregated Welsh economic data. There are two primary blocks of data required to build an economic model capable of analysing tax changes. First micro or agent level information including i) Consumption, ii) Labour Market Composition and well as Dynamics and iii) Earning, Saving and Investment information. Second, macro including aggregate regional accounts of output and inputs.

Presently there is little (agent level) data collected specifically for Wales, the National Survey for Wales is run by the Welsh Government and contains a great deal of information of which some would support development of economic models for Wales. However with few adjustments a specific economic behaviour module could be included cheaply and efficiently improving the usefulness of this source for modelling purposes. Another important source is the Integrated Household Survey conducted at a UK level. With a Welsh booster this would be a particularly valuable resource for developing agent level data for use in economic models of Wales.

Macro data would include: i) Trade Flows ii) Aggregate Tax Receipts iii) Project Government Expenditure. This macro/aggregate data presents somewhat more of a challenge. To this point there exists no formal Welsh accounting programme whereby components of supply and demand are decomposed into inputs and outputs. This macroeconomic information provides the backbone of understanding how Wales's economy works.

The simplest accounting mechanism that could be adopted quickly would be an official Input Output (IO) account formed from a supply and use matrix as well as the detailed information on the components of final demand.

Although not official an IO account for Wales has been in existence since 1995 constructed by the Welsh Economy Research Unit (WERU) at Cardiff University. But this accounting data has only been updated incrementally through projects supported by agencies and Government Departments in Wales. The monetary cost of producing official input-output tables for Wales would not be high, and the supporting statistical framework is already in place. Development could be achieved quickly and efficiently. Looking at both micro and macro data requirements, existing surveys and work in Wales already provides the base for more in-depth information to be collected. The Welsh Government might recognise that investing in the foundation capacity through which to develop more complex economic models, could reap dividends when tax changes are debated in the future.

### **Economic Modelling**

Economic modelling builds a framework for applying logic, statistics as well as mathematics to independently assess and test the consequences of changes to economic outcomes. Economic models do not give definitive answers but can provide likely outcomes of changes in policy. This in turn provides powerful tools for critique of changes before they are actually implemented. Models usually fall into two classes **Impact**, to assess short run changes or a set of specific individual actions and **Forecast** for understanding trends across time particularly in aggregate data. Whichever class of model is used the output is very much limited by the accuracy and quantity of its initial input data.

Likely Models suitable for Wales for assessing tax changes are an i) Econometric Input Output (EIO) and ii) Computable General Equilibrium (CGE) model. To date there have been some attempts to build and run models for Wales however these have been limited by the quality of data available.

Led by a team in Scotland utilising the AMOS (A Macroeconomic of Scotland) framework, a CGE model for Wales has been developed and has been used to assess the economic and environmental consequences of industrial change. Dr Andrew Crawley from WERU has been leading a European-funded project, INTERIM<sup>1</sup> (Integrating Regional Economics Impact Models) the goal of which is to develop new approaches to the development of economic impact models. Working with a world-class team in the United States, one of the test regions will be Wales. The output from this research will be a new Wales Econometric Input Output model.

Both of these examples show how modelling has been utilised for Wales but both of which are academic in nature and have been constrained by limited information. Similar to the discussion of data in the previous section the examples of existing models provide a useful starting point for developing robust tools for the assessment of tax changes as well as other policy assessments.

### **Importance for Wales**

If any tax raising powers were to be devolved, there would need to be sufficient economic models and data available in Wales to inform the debate over the consequences of such actions. There is currently no official disaggregated macroeconomic model for Wales, and estimates of tax change consequences will at this stage likely have to be sought from the UK Treasury based upon UK models.

Having an independent Welsh model(s) provides the ability to construct policy scenarios using robust methods explicitly built for understanding Welsh specific consequences.

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<sup>1</sup> <http://business.cardiff.ac.uk/research/projects/integrating-economic-regional-impact-models>