Developments in economic indicators for Wales

Context

In April 2015, the Minister for Finance and Government Business wrote to AMs stating that she had asked the Chief Economist and Chief Statistician to review the high level economic data currently available to the Welsh Government and to consider what information might be produced in the future to enhance our understanding of the Welsh economy and strengthen the evidence base for policy making.

The review has included:
- analysis of responses to previous rounds on consultation on Welsh Government Economic Statistics;
- consideration of advice from the ONS (particularly in respect of matters of cost and feasibility) and from the Scottish Government on their experience of developing new indicators;
- a wider review of experience, both in other UK countries and internationally;
- discussions of emerging findings with members of the Council for Economic Renewal.

It is clear that the acquisition of new powers necessitates the use and, potentially, development of additional data and new analytic techniques and the review has confirmed this. It is also clear that the priorities for development will need to reflect the timetable for the acquisition of new powers.

However, the development of data and analysis also needs to reflect considerations of feasibility and cost (particularly given the range of alternative calls on government funding). In a number of areas, lead times for developing new data and techniques, the challenges posed by the economic and policy context in Wales, and the availability of funding means that a sensible approach is one where development is progressive and taken forward in partnership with experts outside government.

This review has focused on the all-Wales level, but most of the main conclusions are also applicable at lower level geographies.
Key considerations and implications

Monitoring the overall performance of the economy requires a basket of high-level indicators.

The Chief Economist and Chief Statistician consider that it would be beneficial to develop and publish a small basket of high-level indicators. The objective would be to monitor the overall performance of the Welsh economy in a rounded manner that reflects the outcomes most important to the people of Wales and avoids undue focus on any single aspect of economic performance.

The elements in the basket would comprise the following indicators:

• Gross Domestic Household Income (GDHI) per head
• Gross Value Added (GVA) per head (conceptually equivalent to GDP per head¹)
• Employment rate
• Average earnings
• Poverty rates
• Wealth per head.

A basket of indicators is needed because no single indicator can provide a comprehensive picture of economic outcomes. The ONS has recently reached similar conclusions in respect of monitoring the UK’s economic performance², and published their first set of economic well-being indicators on December 23rd. A broad consensus has also been reached internationally along equivalent lines (for instance by the OECD³). The choice of indicators at any particular level of government needs to reflect the powers available at that level of government and both the feasibility and cost of generating robust measures.

GVA per head (and therefore also GDP per head), although widely cited, suffers from a number of limitations. For example, GVA per head is influenced by the level of the dependent population (which is relatively high in Wales), and, at certain geographical levels, by commuting. Changes in GVA per head can reflect changes in economic structure rather than changes in the incomes earned by Welsh people. For example, a move from a more-capital intensive economic structure to one that is less capital intensive could reduce GVA per head at the same time that employment and pay (and indeed other sources of income) rise.

¹ GVA per head and GDP per head differ only in the treatment of certain taxes. They are very closely associated, and the former is available on a more timely basis and tends to be used in a UK context while the latter is used for international comparisons, including in determining eligibility for European Funds.
In addition, a wide body of economic research demonstrates that, across countries, GVA per head is positively associated with city size (and it appears that, if anything, this association may have been strengthening over time). Within Great Britain, Wales is the country or region with the lowest proportion of its economy in very large cities. Wales is therefore “penalised” when comparisons are made exclusively in terms of GVA per head (and the extent of this penalty could grow or reduce over time, depending on wider economic trends).

GVA per head would also suffer from the same limitations if used as a target for economic policy, since many of the factors identified above are amenable to policy influence only over the very long term – if at all.

For these, and other, reasons the ONS does not use GVA per head in its own comparisons of regional economic performance. However, in the context of Wales, use of GDP per head in connection with eligibility for European funds, and its associated high visibility, means that it will inevitably continue to play a public role.

The choice of indicators for inclusion in the basket, as set out above, builds on the approach already adopted in “Programme for Government”. The case for the inclusion of the individual indicators varies, but in each case the indicator reflects an economic outcome that is important in its own right. For example, there is evidence that employment matters directly for health and well-being, not just as a source of income. (In addition, for reasons already described, employment levels may be more amenable to policy influence than is GVA per capita.) The basket will be reviewed periodically to ensure, for example, that it remains consistent with the national indicators that will be developed as a result of the Future Generations Bill and we will be making those links.

With the exception of the employment rate and wealth per head, the indicators are currently available on an annual basis. (The employment rate is available on a quarterly basis, updated each month, and wealth per head is at present only available less frequently.)

In principle, comparisons of economic performance across areas should take account of differences in price levels (or the “cost of living”). However, there is at present no official indicator of differences in the cost of living across the UK, and

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4 A summary of findings in this area is provided in recent guidance from the UK’s Department for Transport on assessing the wider economic impact of transport improvements. See particularly Chapter 3: https://www.gov.uk/government/publications/transport-investment-and-economic-performance-tiep-report

5 GVA is included in the set of indicators, but is not used on a “per head” basis. See: http://www.ons.gov.uk/ons/rel/regional-trends/region-and-country-profiles/index.html

6 GVA at a disaggregated level may of course also retain an important role in monitoring the effectiveness of specific policy interventions – for example in terms of the GVA generated by a particular sector or within a specific location.
the challenges and costs of producing such an indicator would be large. The ONS has in the past produced such an indicator on an experimental basis, and it suggested that, with the important exception of London and the South East, and particularly as regards housing costs, geographic variations in the cost of living were likely to be relatively small, and to change only slowly over time.

International comparisons (i.e. between the UK, including its constituent parts, and other countries) can be made in way that takes account of differences in the cost of living, through the use of “purchasing power parities”. However, the challenges and limitations are again large, and the consequences of changes can be difficult to interpret. For example, the relative decline in the relative GDP per head of Wales (and West Wales and the Valleys) in comparison with the European Union average since 2005 has been driven by a deterioration in the relative performance of the UK as whole. The main factor in this has been an increase in relative prices in the UK (which has served to reduce the real value of output of both the UK as a whole and its constituent parts).

The proposed basket of high-level indicators is intended to sit at the top of the range of economic indicators and measures that already exist. In particular, for monitoring the progress of specific sectors or areas, or assessing the impact of individual policies, a selection of indicators at a more detailed level will continue to be the most appropriate approach. As part of this work we will highlight more clearly what data exist in relation to the Welsh economy.

Production of quarterly indicator of GVA at low cost is feasible, but the case for such an indicator is less strong than many assume.

The Welsh Government already produces quarterly indicators of output covering the bulk of the private sector in Wales – the short term indices of production, construction and services⁷. Some commentators and users of statistics have expressed support for developing measures of quarterly GVA for Wales. Some participants have also expressed support for quarterly GVA data in official statistics consultations. This would require, at minimum, producing indices to cover the remainder of the economy (principally agriculture and government).

However there are key limitations associated with a timely indicator of GVA.

First, as noted above, the assessment of economic performance requires reference to a basket of indicators. The production of quarterly GVA might reinforce an excessive focus on this single measure.

Second, the Welsh Government's policy levers mainly operate over the longer term and where it is appropriate to respond to short term changes in economic

circumstances, information on the labour market may be more relevant and reliable than GVA.

Thirdly, there are substantial conceptual and statistical issues in developing a robust model of GVA such as those associated with issues around apportioning cross-UK enterprises and economic flows across the border.

Finally, a quarterly measure of GVA for Wales would almost certainly be volatile and subject to heavy revision. This is partly for the reasons explained above but also because this is the nature of short-term indicators, even at a UK level. It would therefore be potentially of little value in providing real insight into economic developments.

By way of context an analysis of revisions carried out by ONS for UK quarterly GDP for the period 1990-2009 showed that, after five years, revisions averaged 0.3 percentage points on a change that averaged 0.6 percentage points. The indications are that revisions to the Scottish indicator of quarterly GVA may be rather larger. This is unsurprising as the challenges of measuring GVA increase as spatial scale decreases. For this reason, revisions to quarterly Welsh GVA are likely to be still greater.

The likely scale of revisions calls into question the value of an indicator of quarterly GVA for Wales as a tool for developing policy and monitoring short-term economic performance (and similar concerns may also apply by implication to the existing short term output indicators).

The challenges of producing a reliable, timely, quarterly indicator of GVA presumably explain, at least in part, why, as far as we have been able to ascertain, apart from Scotland and potentially Northern Ireland, no devolved or similar administrations in other countries (including those with federal constitutions) have produced such a statistic on a sustained basis.

However, in the light of interest from stakeholders, including parts of the business community, further work has been undertaken in partnership with the ONS to produce estimates of the costs of producing a quarterly indicator of GVA.

There are a range of options for producing a quarterly indicator of GVA. The reliability of the indicator would be related to the costs incurred, but it is not possible at this stage to quantify the trade-off. In any case, the absence of a major policy requirement would make it hard to justify more expensive options at this stage, particularly in view of the fiscal context. Developing a full GVA and supply-use framework as has been achieved in Scotland would require significant resource and cost. ONS estimate that the costs of developing full GVA would be in excess of £1m with potentially significant recurrent costs. Further work would be required to refine this estimate. (For further detail, see paragraphs below on input output tables).

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8 ONS states: “Between 1962 and 2009, the mean absolute revision between the preliminary estimate and the same estimate five years later was around 0.66 percentage points, although this fell sharply to around 0.30 percentage points in the period between 1990 and 2009”. See: http://www.ons.gov.uk/ons/rel/elmr/economic-review/august-2014/index.html
For the lowest cost option, ONS estimate that the additional costs over and above those associated with producing the current short terms output indicators would be minimal. So, if the existing short term indicators are to continue, there is a case for extending their coverage to enable the production of an indicator of quarterly GVA to meet stakeholder’s interest. Whilst they may be of limited direct value there is potential for this to provide a platform for a more mature model in the future.

While it is not, therefore, proposed to produce quarterly GVA in the short term to meet the Welsh Government’s own needs, the Chief Statistician will consider further the case for taking forward the lowest cost option, including the benefits and issues with such a measure, should there be a high level of stakeholder demand expressed in the response to future rounds of the routine consultation that is carried out on economic statistics.

The acquisition of new powers means that requirements for data and analysis need to be kept under review, with developments focused on areas where the policy need is greatest.

There is a clear need to continue improving the scope and robustness of economic data for Wales, and associated analysis, as resources allow. In particular, whenever the Welsh Government acquires additional powers, the associated requirements for data and analysis should be reviewed.

The Welsh Government will continue to work with the Office for National Statistics and other experts to consider what improvements can be made and how this can be achieved in the most cost effective manner. The Government Statistical Service (GSS) Inter Administration Committee have recently set up a task and finish group to develop plans for the UK Statistics Authority, ONS and the GSS in delivering statistics for a devolved UK. The Welsh Government is a member of the group.

Following the recent report by the Enterprise Committee we will consider what improvements could be made to exports statistics. We will also work closely with ONS as they develop a new Purchasers’ Inquiry to consider how to maximise benefits for Wales (see below for a further discussion of the benefits of an enhanced Purchasers’ Inquiry).

In addition, we will engage with other users of data to understand their needs. This will include developing panels for business users and academic users. Whilst, for reasons outlined below, we do not consider the development of input-output models an immediate priority for the Welsh Government, we will engage with economic experts to support them in their work in trying to improve the data that is available to underpin their own research in this and other areas.

Development of a macro-economic or general equilibrium model of the Welsh economy raises complex issues in terms of data requirements, feasibility and utility and should be pursued incrementally.
Effective implementation of powers over taxation and borrowing will clearly require the use of models and other analytic tools in order to forecast revenues and assess economic, social and environment impacts. However it is not yet clear whether these tasks will also require the development of an all-purpose model of the overall economy in Wales as opposed to models developed for specific analytic purposes.

When the issue of developing a macro-economic model was examined in depth just over a decade ago by independent experts, in the context of forecasting the demand for skills, the advice was that the results from such an all-purpose model were unlikely to be sufficiently robust to support policy development\(^9\). The close integration of the economy in Wales with that in the rest of the UK makes economic modelling a formidable task, and the track record of such models is not good even in more favourable circumstances.

However, developments in modelling methodology mean that further work is needed to consider whether this conclusion continues to hold, particularly in the context of the changed policy context.

The best way to explore the potential for macro-economic modelling, including the use of general equilibrium models, in the Welsh context is probably through academic research, and the Welsh Government is taking the first steps to support research studentships in this area.

Notwithstanding the case for further investigation in this area, a broader approach, drawing on a wider range of evidence on trends and drivers, is likely to be more appropriate for deriving scenarios and setting the context for policy development.

In terms of assessing the impact of specific supply-side policies (for example in respect of transport or education), or changes to taxation, there is likely to be greater benefit from the detailed analysis of direct effects, coupled with case-specific examination of potential indirect effects, than from the creation of a generic macro model.

**Development of input-output data for Wales raises challenges and should therefore be pursued in an incremental fashion**

A key step in developing a model of the economy in Wales would be to secure the regular production of Welsh supply and use (“input-output”, or “I-O”), tables. Advice from the ONS to the Welsh Government has pointed to the major challenges posed by the construction of robust official tables for Wales, and, as mentioned earlier, the potentially significant cost (likely to be in excess of £1 million).

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It would be particularly challenging to produce reliable official I-O tables in the context of the economy in Wales in view of the (probably increasing) importance of cross border flows of goods and service and the (increasing) dominance of services in the economy. (It should noted that the flows of goods and services between Wales and the rest of the UK would be expected to be proportionately larger than in the case of Scotland or Northern Ireland.)

Similar challenges probably explain the limited precedents for the production of official I-O tables at the sub-national level, even in federal states. Canada appears the main exception, but here the provincial I-O tables are produced in the context of a significantly different approach to the production of national accounts.

In the past, I-O tables for Wales have been produced by academics at the Welsh Economy Research Unit at Cardiff University\(^\text{10}\). These have been underpinned by a small-scale non-official survey of businesses (effectively, a purchasers’ inquiry), used to estimate cross-border flows of goods and services. The tables were last updated to 2007.

In summary, the close integration of Wales with the rest of the UK makes the collection of robust data challenging, and calls into question the likely stability of I-O relationships, undermining the value of the tables as an input to economic modelling. In addition, the production of I-O tables could reinforce a focus on short-term demand-side relationships, when the Welsh government’s policy instruments have influence mainly on the supply side and over the longer term. Related to this, I-O relationships reflect historic traded patterns and may not be a good basis for informing long terms policies.

However, as noted above, the provision of input-output tables could serve purposes beyond underpinning an official macro-economic model, particularly by supporting academic research and the development of the capacity for modelling over the longer term.

As noted above, the ONS is proposing to run a new UK-level Purchasers’ Inquiry (such an inquiry was last undertaken in 2005). The Welsh Government will work with ONS to determine whether it is feasible to include a Welsh boost to the sample. This would be a key step towards the development of I-O tables for Wales. Support could also be considered for a more modest, non-official survey carried out by academics in the meantime.

In addition, the Welsh Government will consider supporting academic research to examine experience in producing sub-national input-output tables in other parts of the world.

**Conclusions**

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\(^{10}\) See: [http://business.cardiff.ac.uk/research/groups/welsh-economy-research-unit](http://business.cardiff.ac.uk/research/groups/welsh-economy-research-unit)
On the basis of the analysis summarised above the Chief Economist and Chief Statistician’s key recommendations comprise:

1. It would be beneficial to develop and publish a small basket of indicators to monitor the performance of the Welsh economy in a rounded manner that avoids undue focus on any one aspect.

2. There is no policy requirement for a quarterly indicator of GVA for Wales, which is likely to be subject to heavy revision. However, the lowest cost option for developing such an indicator would result in a small increase in costs, and a decision to develop or not should reflect the views of stakeholders as expressed in a wider consultation on economic statistics.

3. The requirements for further data and analytic tools should be kept under review as the Welsh Government acquires new powers.

4. Further research is required to investigate whether developments in the approach to economic modelling suggest that the earlier conclusion that the development of an all-purpose model of the Welsh economy was unlikely to be cost-effective or useful for policy making should be revised. This is best undertaken in an academic context.

5. The production of official input–output data poses challenge, and should be explored in context of developing ONS proposals for a new UK Purchasers’ Inquiry, supported by further research into experience in other parts of the world.

Chief Economist
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Welsh Government
January 2015