Measuring what we Manage: Regional Economic Statistics and Lessons from the Input Output Project for Wales

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Introduction

In 2022 Welsh Government began the process of compiling and publishing a set of Input-Output Tables (IOTs) for Wales. These IOTs were to be the first holistic picture of the Welsh economy produced officially, placing us on a level(ish) footing with Scotland (which has published IOTs for decades) and Northern Ireland (which has done so for the post-Brexit period).

The project was intended to improve our understanding – inside and outside Welsh Government – of how the Welsh economy 'worked' in terms of production, trade and product use. More importantly, it was to determine whether collating such a picture – consistently, across all products, industries and users – was feasible, whilst guaranteeing a reasonable level of quality and robustness. The project did indeed deliver an official Input-Output publication for Wales (for base-year 2019), detailing the structures and activities of 55 industries – and related product use and supply. The Supply and Use and Input-Output Tables are available here, as Statistics in Development, together with an extensive methodology document that includes a commentary on the difficulties inherent in the compilation process.

These difficulties were substantive. Our ability to present a holistic and detailed picture of how the Welsh economy 'works' – what products and services it creates, how and for what purposes – is limited in a number of ways. These limitations have implications not just for our ability to compile and publish IOTs to the exacting standards required by

National Accounts, but more widely, in terms of how we understand the workings of the regional economy, its dependencies, and its relative performance. These boundaries on our economic knowledge arise for a variety of reasons including survey resourcing, the changing nature (and geography) of economic and value-adding activity, and the realities of public institutional structures within what was, until very recently, a unitary state. The origins of these problems are complex and longstanding. So will the solutions be.

The UK-Regional Statistical Settlement and the Demands of Devolution

Devolved governments look primarily to the Office for National Statistics for management data. This dependency varies across policy areas, in part due to the shape of devolution itself. For example, in Wales, Natural Resources Wales produces (every 4-5 years and statutorily from the Environment Act) a State of Natural Resources (SoNaRR) report that has no direct parallel in other parts of the UK, or indeed for the UK as a whole (where, for example Natural Capital Accounting is more developed). Equally, comparisons of the holistic performance of the national-constituent parts of the NHS across the UK are difficult due to the different structures and choices made following its devolution, and the subsequent reliance on internally generated (and somewhat differing) management information.

Statistical devolution is lesser in the field of economy and business – which is itself of course only partially devolved, but in important ways. Here, the majority of data about the state of Wales comes from well established ‘core’ ONS surveys of business (Business & Employment Register, Annual Business Survey, Annual Survey of Earning & Hours etc.) and households. (Census of Population, Family and Living Costs, Labour Force Survey). Other ‘national’ thematic surveys, sometimes undertaken outside ONS are also important – for example on GB-resident visitors spending in Wales. Wales-origin (and Wales-administered) surveys do of course exist. For the compilation of the Input-Output Tables, the most important of these was the Trade Survey for Wales, covering the period from 2019 – 2022 and intentionally designed to fill gaps in UK-level data related to regional trade – and especially that with other UK regions.

In addition to survey data, administrative data are also important in uncovering the nature of economic activity. Companies House can provide detailed and time-extensive financial (and some employment) data for companies headquartered in England and Wales, Scotland and Northern Ireland. Meanwhile, HMRC collects frankly mind-numbing detail on (physical) products entering and exiting the UK (or GB) and their value.

All these sources – survey and administrative – combine with *ad hoc* studies, third-party sources and synthetic measures derived by ONS (for example Gross Domestic Product and Gross Household Disposable Income) to sketch parts of the regional economic landscape. Sketches can be 'coloured in', for example by Welsh Government-resourced sample boosts to relevant surveys.

We can imagine the IOT project as the first attempt to combine these sketches into a jigsaw puzzle of the whole Welsh economy.

Since 1999 devolved governments have been granted increased control in economic management. The 1998 Government of Wales Act enabled a devolved administration with expenditure responsibilities beyond the scope of any prior municipalities, but lacking control over economic levers. Subsequent Acts have increased devolved autonomy (including tax raising powers) and, partly in consequence, divergence from UK/English policy has increased. Between 2010 and 2024 this divergence also represented the different focus and values of governments in Westminster and Cardiff Bay (the latter increasingly interested in wellbeing) – as well as the fact that, as a very particular economy, Wales required very particular solutions.

With great power comes great responsibility. However, responsible public policy and economic management requires extensive, detailed and timely intelligence – and underpinning data. To increase productivity, we need to understand its drivers, for example, the relative importance of physical, human and natural capital. A responsible and wellbeing-oriented government might also wish to know whether the benefits of productivity growth accrued to workers or (sometimes non-regional) owners of capital. To drive the benefits if the foundational economy we might wish to understand the

embeddedness (or relations) of different types of 'local' firms, their growth potential, and the opportunities for them to provide decent work. And a robust estimate of Wales' consumption-based eco-footprint requires *very* good data on regional trade.

This is where the UK statistical system begins to creak.

Mind the (Data) Gaps

Building a regional Input-Output Table is simple. At least *conceptually*. In slightly simplified terms, we start by estimating gross value added and its components for the industry disaggregation required (in Wales we publish 55). We then must estimate output for each of these industries and then (by remainder) spending by that industry on each of the (55) commodities of interest. We then work out who consumes the production for each commodity (including services of course): is it other firms in Wales, households, or people or firms in the rest of UK or beyond (hence exports). Further steps include various price and tax adjustments, the estimation of how much of each commodity is imported to Wales to use in production or directly by final users. And finally, the iterative balancing of supply and demand for each commodity – done manually in the Wales case, rather than using an algorithmic approach.

IOT compilation processes thus require the analysis and reconciliation of a wide range of economic data. Following this process, it is possible to begin to describe the regional system of economic statistics – although the lack of a systematic overview and description of the raft of relevant data is itself an issue. Many of the relevant learnings that emerged from the process are already well understood (at least by some statisticians and analysts) but it is worth collating them here.

ONS Business Surveys are not designed to report at regional/devolved scale

ONS supply-side surveys such as the Annual Business Survey (ABS), Annual Purchases Survey (APS) and Annual Survey of Earnings & Hours (ASHE) (or their forbears such as the Census of Production were designed at a time when UK economic policy was uniform across its constituent countries and regions. Their ability to produce robust results at smaller spatial scales is to some degree compromised. This is not *primarily* a

problem of sample size; any sample survey requires a good understanding of the characteristics of the population so that the survey can be designed to capture sufficient returns from different sectors of interest, which can then be weighted and scaled to be representative, here of the region as a whole. This is not the case for important ONS business surveys such as the ABS which is only stratified at England & Wales level, then with a separate sampling frame for Scotland (and a separate survey for Northern Ireland). This means that, although ONS does publish a small set of 'key' regional ABS aggregates, results for individual variables – such as purchases made, or detailed employment costs, cannot easily be estimated for Wales.

Resources are a problem

Sample sizes may not be the core problem, but they *are* a problem, especially in the era of ever-declining response rates to (almost all) surveys, which makes every return more expensive. In 1977 knocking 1,000 doors for with a Living Costs and Food survey would have garnered around 700 responses but in 2022… only 220. The most clear and obvious response – trebling sample sizes to avoid surveys becoming unreliable – is pretty much unthinkable in 2025. And this is not just a problem of Austerity. In 1991 I was sitting at my desk at County Hall looking at my very-much-black-and-white-pre-Windows-CRT monitor screen full of raw return data from the Census of Production – detailing economic activity at every single plant with more than 25 employees in South Glamorgan (and a 1-in-10 sample of those smaller). Those halcyon days disappeared in 1998 with the arrival of the Annual Business Inquiry – also spelling the end for the Census of Construction and Annual Purchases Inquiry; all data sources sorely missed by the Input-Output compiler. Beyond survey scale, lack of resource has also stymied ONS' ability to refashion and reengineer surveys to be more 'modern', including here fit-for-devolved-purpose. Modest improvements to regional economic statistics made as a result of the 2004 Allsopp Review were effectively reversed following the abolition of RDAs and downgrading of Government Office Regions by the 2010-15 coalition government, and thus the 2016 Bean Review makes depressing reading in this regard. Where relevant resource has been expended, it has been to think about modern economic statistical needs in ways which are interesting and useful but not, primarily spatial -and which have so far seen very limited mainstreaming.

Administrative data sources – and surveys – are often 'spatially blind'

Economic analysis at UK scale is bolstered not only by the sheer weight of survey data available at national scale, but also by a raft of administrative data that can be used to complement economic surveys. These data sources – for example from the balance of payments 'pink book' or customs receipts held within HMRC can fill gaps in UK survey data, for example relating to commodity purchases and resulting value flows (not least by visitors). They are, however, of very little use in assessing regional economic behaviours having no spatial detail below UK – or perhaps GB, or at best England and Wales – level. Thus, whilst ONS has a variety of methods to arrive at a triangulated estimate of by-commodity final spending of UK households, in Wales we the only relevant data come from a single (and under-resourced) survey source.

Top-down allocation by employment share hides heterogeneity

The progress of devolution (including of course to English City-Regions) has increased the range of demands on the UK statistical system. Regional economic data have been derived from UK-national sources in a variety of ways. In the best case – for example the Census of Population, or BRES – smaller scale data are robust enough to stand alone. In most other cases data are regionalised 'top down', whereby robust UK/GB-national totals – say on the economic activity of financial services – are apportioned based on (BRES or IDBR-sourced) regional employment in that sector (but in the case of trade, the regional proportion of total GB employment in that firm). This is a sensible and cost-effective approach that will deliver reasonable results in most cases but implies significant constraints. Firstly, the 'all regions' total must match that for the national total, raising questions about how regional, 'bottom up' data that may be better than the apportionment is integrated (if at all). Secondly, the use of employment as an apportionment measure means that significant regional economic heterogeneity will be missed – and this is a particular problem for an occupationally narrow region like Wales. For example, the likelihood that value added per employee in (largely back-office) finance Wales is as high as the UK average is small, but this result would emerge from a UK-apportionment. Thirdly, these apportioned data will then inform (and

possibly debase) important derived metrics like regional Gross Domestic Product and Gross Disposable Household income – but in ways, and to extents, that are not clear.

Clarity on Methodology, quality and development is an issue

A lack of immediate and easy detail on the methodology, implementation and quality measures that underpin regional data is a wider problem. Whilst ONS helpfully links to information on quality and methodology from the data release webpage of the relevant survey, methodological detail on subnational estimation is often scarce or absent. For non-ONS sources such as HMRC, the situation can be even worse, with often very detailed regional data provided on public facing websites implying a high degree of accuracy, but with users unaware of how exactly data are sourced. Lack of 'on demand' subnational methodological and quality data often then places the onus on the user (whether inside public sector agencies or out) to proactively search for detail and comfort, either across the ONS' very extensive website, or by directly contacting ONS (or other relevant) colleagues. This is unlikely to be efficient in terms of user and ONS time, or effective in disseminating information about survey methods and quality across subnational user groups.

Conclusion: The Regional Statistical Dilemma

The UK's welcome, but partial and messy amble towards devolution has many consequences. We tend to focus on the political and financial – and perhaps underplay the nuts and bolts. The Input-Output Project suggests that whilst day-to-day economic management has been gifted to the nations, it has not come with all the tools needed to do the best job, and this is especially true for Wales. Whilst in some cases this is justifiable (or at least understandable for reasons of efficiency – for example the dangers of differing regional employment law or corporation tax rates leading to inefficient zero-sum games), in the statistical arena, the fault seems to lie with sunk costs, institutional inertia, and a lack over overall resource. This leaves the devolved nations with increasingly divergent approaches to economic development, but a very limited ability to know if divergence leads to better or worse outcomes – and for whom.

We lack some fairly basic knowledge about how Wales works. For example, we have a limited picture of where and with whom Wales-based firms trade. We know effectively nothing about what products are made here, from what, and for what uses. The non-wage elements of productivity are largely unknown, and, in the current statistical landscape, possibly unknowable. For a region looking to economically 'upgrade' – to develop higher value and more embedded firms and activities – and hence higher material wellbeing – this is a real problem.

I have made the case here that this is not just a problem of sample size, and not thus soluble solely with more money, even if that were available. If our evidence is to grow to match our ambition, then a more fully-featured, robust and regionally bespoke statistical system is needed. This will, involve ONS – already moving, albeit under significant constraints, to becoming more devolution-aware and responsive – communicating, consulting and collaborating systematically on its plans for survey transformation and its use of new approaches; ensuring subnational needs are locked in, not bolted on. It will also involve devolved governments developing new sources and approaches where ONS or UK-administrative data are not, and will never, be fit for devolved policy purposes.

For Welsh Government, understanding where and how to invest in economic statistics will not be easy – quite apart from securing the actual resource. The IOT project was unusual in that it required both the integration of an extremely wide range of sources with detailed knowledge on national accounting conventions. These are skills that have not previously been required within the Welsh Civil Service, but without them it is difficult (if not impossible) to create and maintain a holistic picture of the Welsh economy – not to mention its inter-relationships with society, the environment and the climate. And this is something that Welsh governments and the Senedd are legislatively required to do. There is an old economics aphorism that all models are wrong, but some are useful. The usefulness of any regional statistical picture we try to draw must be pinned to its uses in policy, and to support legislated outcomes. No representation is a reality – but van Gogh painted his flowers to make people happy, not to teach botany, and then employed his skills appropriately. We should take a similar approach to our own painting by numbers.