

COMMENTARY: MODERNISING ECONOMIC STATISTICS: WHY IT MATTERS

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In the Statistical Abstract for the United Kingdom for 1871–1885, most of the 200 pages provide great detail on trade in agricultural products, including from the colonies, and the public finances (HMSO, 1986). There are just twelve pages on factories, mines and railways. So at the height of the Industrial Revolution official statistics provided scant information about the dynamic manufacturing economy. The reader can find monthly sales of corn in English and Welsh market towns, or the volume of guano and gutta percha imported into the United Kingdom, but rather little about factories other than their number, employment and – to be fair – the number of power looms and spindles installed.

There is inevitably a lag between a constantly changing market economy and the way it is categorised and recorded, but the lag can feel painful at times when the change is large or sudden. This seems to be one of those times, just like the late 19th century. The Chancellor of the Exchequer has commissioned a review of economic statistics by Sir Charles Bean, asking specifically whether official statistics are appropriate for the digital economy: “In a fast-changing and modern digital economy it is important statistics continue to be relevant and an accurate reflection of its constituent parts, for instance capturing the benefits of technological change through quality improvements to broader issues related to the provision of more granular information.”¹

In many ways, we have more access to economic data than ever before, thanks to the digital revolution; but paradoxically alongside this, greater uncertainty about what is being measured and whether it is meaningful. There has been a surge of criticism of conventional

statistics for assessing economic progress. Are the GDP figures, part of the familiar daily incantation of financial news, failing to reflect important characteristics of the economy? The proliferation of alternative approaches, particularly ‘dashboards’ as recommended by the high-profile 2009 report from the Sen-Stiglitz-Fitoussi commission, suggests many people think so (Insee, 2009). There is also no doubt that many participants in digital businesses believe the growth in their sector, and its benefits to consumers, are not reflected in the statistics. For example, Hal Varian, chief economist at Google, said in an interview: “There is a lack of appreciation for what’s happening in Silicon Valley,” he says, “because we don’t have a good way to measure it.”²

There are two kinds of questions about the effectiveness with which economic statistics currently perform the functions we need. One is whether the collection and sampling methods used by statistical agencies, and the categorisations they use, have kept pace with changing business and consumer behaviour and habits. The other is whether statistical definitions and conventions – notably real GDP growth as now defined and constructed – remain useful indicators for economic policy and accountability.

Categorising activities

The answer to the first of these questions is obviously ‘no’. Of course statistical agencies such as the ONS are aware that there is more online shopping, for example, and have changed some of their data collection methods as a result. The last set of revisions to the definition of GDP, implemented in the UK in 2014, added investment in intellectual property to final output, having previously

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classified it as spending on an intermediate good. There has been significant effort put into improving the measurement of several intangible components of GDP.³ There has been significant work done already on measuring better the creative industries, on intangibles and intellectual property, important because of the increasing share of ‘weightless’ activities in the economy.⁴ They also know there is more to do and continue to work on a range of issues and engage with business. For instance, the ONS and BIS recently hosted a day-long conference on the implications of e-commerce for statistics.

However, there are some trickier issues. One of the pressing needs is for an update of the categorisation of occupations and industrial sectors. The lists used now were defined for an economy in which manufacturing was far more important. There is fine detail for different occupations or sub-sectors in manufacturing, but broad-brush categories for services. Nobody can know exactly how people working in new occupations classify themselves when they respond to the surveys on which the published statistics are based. It is impossible to know how many people are working in the ‘sharing economy’ businesses, or whether they are part-timers or not, or doing more than one job. People working on software development or video games or social media marketing could select various high-level categories to describe their job; yet the occupation listing has seven different types of ‘marker offs’ – one for each of seven manufacturing industries from textiles to boiler manufacture – and specific headings for vending machine and hosiery machine mechanics (Growth Intelligence/NIESR, 2013). The point is obvious; the difficulty is that the list is an internationally-agreed standard so will take a long process to change. Besides, it is not entirely obvious what the new, settled occupational categories ought to be, given how quickly technology-based activities are moving. Will a separate heading be needed in the long term for graphene product designers, or for Ruby-on-rails developers – or not?

Another question is the extent to which statistics are vulnerable to business model decisions. For example, in platform markets, businesses choose prices on the two sides of the platform jointly; that trade-off can change. Online retailers are constantly changing the way they price the same item for different customers and the margins they are prepared to accept on different items. It is not obvious how to compare the unit price of a music streaming service – now included in the CPI basket – with the price of a CD. The business model dependence is not unique to digital businesses, as it crops up in financial services too, but it has become a bigger headache.

The GDP-welfare wedge

An entirely different kind of issue concerns the extent to which the measure of how well the economy is doing, real GDP growth, is diverging from a meaningful concept of economic welfare. This issue is often confused by economists claiming not to be measuring welfare, when that is exactly the purpose of looking at real GDP growth, and when the growth figures are constantly used in the public debate as shorthand for progress.

The question of whether aggregate measures should try to capture simply the total amount of (monetary) activity or instead total economic welfare was an active discussion in the 1930s and early 1940s, when the foundations for the current framework of national accounts and GNP – subsequently GDP – were laid.⁵ It has cropped up again from time to time in the shape of the environmental challenge to the policy focus on GDP growth, in alternatives such as the Human Development Index, and in the recent focus on happiness or well-being. There is now significant policy interest in a number of countries in at least supplementing conventional macroeconomic statistics. Hence the government’s 2010 decision to ask the ONS to survey well-being around the UK.

Many of the questions raised in current debate about the adequacy of aggregate growth statistics concern the wedge between GDP as defined and constructed now and economic welfare. The size of the wedge may be increasing. Certainly many participants in ‘new’ sectors believe official growth figures understate the truth.

Some of the reasons are straightforward. As a recent Bank of England staff comment pointed out, the disintermediation of bricks and mortar providers in many sectors will have reduced measured business investment without any reduction in benefit to consumers.⁶

It has also long been appreciated that it is impossible to incorporate fully in real GDP statistics the large step changes in consumer welfare due to major innovations. In his authoritative history of early national income accounting, Paul Studenski (1958, p. 219) wrote: “Comparisons of the national incomes of a given country during widely separated periods deal essentially with different societies”. However, the scale and speed of price declines in the case of new technologies such as computer processing, genome sequencing, or innovative materials substantially outpaces those seen during past technological improvements. Despite hedonic pricing techniques to make adjustments for quality changes, it

is unlikely the qualitative changes we are experiencing now can be captured statistically.

One strand of the lively debate about ‘secular stagnation’ has picked up on this problem. Some economists have argued that disappointing real GDP growth and productivity figures largely reflect the failure to capture a lot of the technology driven change. For instance, US BLS figures use hedonic price techniques to adjust for quality change in computer hardware but not software; if software quality has improved significantly, this will understate its real output.

Another potential reason for a bigger GDP-welfare ‘wedge’ is the explosion in the variety of products available now. Product variety does not figure at all in GDP, yet the scope for a better match between an individual consumer’s tastes and goods and services supplied will increase consumer welfare without necessarily increasing price. Statisticians do not pay attention to variety or the scope to customise, and there are no statistics on product range readily available. Some psychological studies suggest too much choice reduces personal well-being, but what is perhaps true for an individual is simply not true at the aggregate level; there is a fallacy of composition (Schwartz, 2004). To see this, think about the loss of consumer welfare if the choice of book titles available in the market were restricted only to those on the bestseller list; or about the potential welfare gain from the introduction of personalised biotech medicines. Against this needs to be set the growing practice among online retailers of ever-improving price discrimination through the use of customer data.

A third possible contributor to the welfare-GDP wedge is the spread of matching markets on technology platforms. It is possible that these create a pure efficiency. One of the clearest demonstrations is the reduction in price dispersion, fall in average consumer prices and increase in producers’ incomes when mobile phones meant fishermen on the Keralan coast could call ahead to different ports to get price information (Jensen, 2007). There is little data with which to assess the effects of large new matching platforms in the UK such as Uber or Airbnb, and it is not clear whether they are straight rivals for incumbents (whose revenues and output would decline in that case) or rather complementary services increasing market size.

Some economists also point to a fourth potential element of the wedge, an increase in consumer surplus, the value consumers place on a product in excess of the price

they have to pay, due to the prevalence of free goods on the internet. There is clearly huge value arising from access to free communications and content, but this too is vulnerable to business model choices to the extent that it is advertising rather than subscription funded. Unwanted adverts that aim to manipulate consumer behaviour represent a disbenefit that ought to be netted off; indeed, many people are proving willing to pay for ad blockers to access free content without adverts. Experimental figures produced by Leonard Nakamura and Rachel Soleveichik (2015) suggest that when the imputed cost of unwanted adverts is deducted, the consumer surplus gain is small.

With that caveat, however, consumers are certainly benefiting from free services and content that are funded either through other business models (such as ‘freemium’) or provided voluntarily. What’s more, the voluntary creation of software or content online itself raises interesting conceptual questions about the production boundary between what is in and what is out of GDP. The convention is that voluntary services (as opposed to products) are left out of GDP, including home production of caring, cleaning and cooking. However, not only are there plenty of market substitutes for these domestic services (and the potential substitution of some of these activities by domestic capital goods as robotics improves), the home-market margin is also being eroded by the large amount of volunteer activity in writing free blogs or coding open source software.

Why does it matter?

Statistics were created by increasingly bureaucratic states, especially in the 19th century, to ensure governments had the information they needed to raise taxes and control activities (Desrosières, 1998; Tooze, 2007). Over time, with the spread of democracy, statistics have become an essential tool enabling citizens to hold their governments to account. Independent and reliable official statistics are a public good in democratic, information-based economies (Coyle, 2015). It is important for the public to be able to use statistics to make sense of the changes they know from experience and from the media to be taking place in their societies. Sir Charles Bean’s review is likely to prove an important milestone in spurring the debate about how economic statistics can catch up with the economy.

NOTES

- 1 <https://www.gov.uk/government/publications/review-of-economic-statistics-call-for-evidence/press-notice-charles-bean-kicks-off-review-to-future-proof-uk-statistics>.
- 2 Silicon Valley Doesn’t Believe U.S. Productivity Is Down,

Timothy Aepfel, *Wall Street Journal*, 16 July 2015, <http://www.wsj.com/articles/silicon-valley-doesnt-believe-u-s-productivity-is-down-1437100700>.

- 3 See for example, Goodridge et al. (2014) and Haskel et al. (2014).
- 4 <http://www.ons.gov.uk/ons/rel/environmental/uk-environmental-accounts/2013/stb-ukea-2013.html> for UK Total Material Requirement; see also Coyle (1996). On the creative economy, DCMS January 2015, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/394668/Creative_Industries_Economic_Estimates_-_January_2015.pdf.
- 5 Described briefly in Coyle (2014), and in detail in Mitra-Kahn (2011).
- 6 <http://bankunderground.co.uk/2015/09/23/the-impact-of-e-commerce-on-the-consumer-sector-view-from-a-bank-of-england-agent/#more-622>.

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