Navigation charts for the knowledge economy of the 21ˢᵗ century

Key points

1. **Policy makers have no reliable way of knowing whether policies designed to generate 'innovation' and a 'knowledge economy', a key focus of UK and EU policy, are working or not. They are in the position of the European seafarers seeking to navigate the globe in the 15ᵗʰ and early 16ᵗʰ centuries. The maps and charts which they possess are wholly inadequate to the task.**

2. **An intellectual revolution in national accounting principles is required for policy makers in the 21ˢᵗ century. It is one which is just as demanding and fundamental as the one carried out in the 1930s by some of the intellectual giants of economics. Big Data analysis has a key role to play, but it needs to be done through a new theoretical framework, yet to be developed, which makes sense to economists and policy makers. Rightly or wrongly, economists occupy a dominant role in policy making through their influence in finance ministries and central banks.**

The background

3. Data series in the so-called national accounts are the fundamental building blocks on which economic policy is based. For example, the Bank of England has a mandate to keep inflation around 2 per cent. The Chancellor boasts if the latest GDP growth figures are strong. All these indicators depend upon the detailed processes of gathering information, sifting it, and deciding what it means in order to produce estimates of the basic numbers.

4. The national accounts are produced by the Office for National Statistics. Most economists regard this process now as being fairly humdrum and routine. But the initial construction of national account statistics in the 1930s required path breaking work which was at the very frontiers of science.

5. **In the Great Recession of the 1930s, nearly one in four American men was unemployed. It was clear that there had been a catastrophic drop in national output (GDP). But there was no systematic and rigorous way of informing policy makers about this. Producing estimates of GDP, the value of national output in a market oriented economy, was of the utmost policy importance.**

6. Two major figures were associated with the task: Kuznets, who subsequently received the Nobel Prize in economics for this work, and Keynes, who should need no introduction. They provided the innovative intellectual framework, in which the size of an economy is essentially measured as the sum of the spending of its component parts: expenditure by individuals, by companies, by government, and the net balance with the rest of the world. This framework continues to be the basis not only of national accounts, but of most economic policy.

7. The GDP data continue to be of value. They are criticised for not taking into account things such as the value of housework, or the depletion of natural resources. Economics in fact provides the structure within which such changes could readily be accommodated. Kuznets himself noted this at the time. But the initial purpose of the national accounts was to produce estimates of the value of output at market prices in a market economy. This was what policy makers needed to know urgently.

The challenge

8. In the 21st century, a revolution of similar intellectual standing is required to produce new measures for policy makers. The European Commission has placed great emphasis on the 'knowledge economy'. The UK government has a Productivity Plan, with its twin pillars of long-term investment and a dynamic economy. The policy issues which arise from this perspective define the significant outstanding challenges of measurement.

9. **The most important challenge relates to the provision of information about the stock of productive knowledge and its value, and the speed of innovation.** This will require a new focus on the capabilities which are at the heart of trading relationships, whether these are of a company, a region or a country.

10. **The lack of information on the stock of productive knowledge is a major deficiency of the current system of national accounts**. The 21st century is indeed the century of the knowledge economy, but the existing national accounts offer essentially little or no information on this. Valuing the stock of physical capital is already a difficult exercise, not least because the rate of obsolescence is highly uncertain. The stock of knowledge capital presents even more fundamental challenges.

11. The point extends below the level of the economy as a whole, in two ways. First, cities are a major focus of innovation and of agglomeration. They exist within hinterlands of commuters and related businesses. But governments do not collect good information about the networks which support them. Second, the regional discrepancies within the UK (and indeed most Western economies) exhibit very strong persistence. There is no real sign of the gap between, to generalise, the North and the South narrowing, despite decades of policies designed to do something about the problem. This is a major constraint on the growth and innovation potential of the UK economy. Regional statistics remain wholly inadequate. The North may simply be grossly deficient in its stock of productive knowledge.

12. **The rapid growth of the cyber economy poses further challenges**. The difficulties of valuing innovative products and services, especially in terms of their contribution to real output, are well known amongst economists and national accounts statisticians, and some progress has been made in this area.

13. **But a major unresolved question is to how to value open source platforms**.. How is value to be assigned in the rapidly growing, so-called prosumer sector (i.e. production and development by consumers) of the economy?

14. Open source platforms correspond to a concept in economic theory known as public goods. These are products that one individual can consume without reducing its availability to another individual, and from which no one can be realistically excluded. Defence is a classic example of a public good.

15. The valuation of public goods is a major unresolved problem in economic theory. In the national accounts, conventions have arisen for valuing public goods. For example, the value of defence is essentially given by the value of inputs into the sector, such as the salaries of the armed forces. But these are purely arbitrary.

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