

The Sixth IMF Statistical Forum

SESSION IV: MEASURING WELFARE GROWTH: CASES OF NEW DIGITAL SERVICES AND PUBLIC GOODS

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SESSION TOPIC

New and free digital products and unpriced public goods have important effects on welfare but measuring these effects can be challenging. Can a conceptual framework and set of practical estimation techniques be identified for accounting for new and unpriced services in the digital and government sectors in measuring welfare growth and output growth?

SUMMARY OF PRESENTATIONS

1. *The Digital Economy, GDP and Consumer Welfare: Theory and Evidence* (Kevin Fox, Erik Brynjolfsson, Avinash Collis, Erwin Diewert, and Felix Eggers)

The authors identify three challenges raised by the advent of the digital economy: (i) How does the digital economy affect welfare and GDP? (ii) Are the benefits from free and new goods appropriately measured? and (iii) Can mismeasurement help explain the productivity growth slowdown in industrialized countries?

The authors argue that the welfare effects of the digital economy are not well-measured in the current national accounting framework. To address this issue, they approximate an additive adjustment to traditional GDP growth for new and free goods which they call GDP-B. The authors contend that this new metric is better suited to capture the benefits derived from the introduction of free goods such as Facebook and Wikipedia and of new goods such as smartphones, and its flexibility allows for other types of welfare implications to be considered.

For example, based on incentive compatible discrete choice experiments, they derive an estimate of the consumer welfare created by Facebook. They estimate that including the welfare gains from Facebook could have added nearly 0.5 percentage points to GDP growth per year (and thus productivity growth) in the US. Using the example of smartphone cameras, the authors also show that even for paid goods there can be a very large difference between contributions to GDP and contributions to consumer welfare when quality adjustments are not accounted for properly. Therefore, it is crucial to properly adjust for quality improvements.

2. *The Welfare Implications of Public Services: Lessons from 10 years of Atkinson in the UK*
(Richard Heys, Fred Foxtton, Joe Grice and James Lewis)

Measuring the impact of the digital economy and the availability of free digital goods should be seen in the context of a larger group of transactions which are also free, or nearly free, to consumers—public services, the value of which is substantial, about 20% of GDP in the UK. This presentation, based on the work done by Atkinson in the UK, shows that government public services such as health care, education, and adult care should be quality-adjusted to accurately measure the output of these services.

The authors demonstrate that quality adjustment is a substantial driver of growth in the public service productivity estimates of output volume and that its impact on output has increased over time, such that ignoring it substantially underestimates output. For instance, since 1997, quality adjusted public sector output has consistently exceeded non-quality adjusted output. Since 2010, the gap between the two measures has been at least 10 percentage points. The authors expand the work by Atkinson by considering both the welfare implications of public services and how to treat welfare gains which are not attributable to changes in public service provision. Using health care as an example of how quality adjustment can be done, they find that three components dominate the effect of the quality adjustment: (i) the estimate in the gain in health-related quality of life; (ii) the short-term survival rates following hospital procedures, and (iii) waiting times to receive treatment.

QUESTIONS AND ANSWERS:

Questions and comments during the session focus on: (i) welfare valuation from new and free goods and services; (ii) the credibility of using willingness-to-accept (WTA) experiments as a method for valuing free products since some digital companies charge subscription fees at a lower amount than evidenced by the WTA experiments and, for national accounting purposes, willingness-to-pay given a budget constraint would be a better estimate and more related to a market-price equivalent—the normal method of valuing transactions within national accounts; (iii) the measurement of the consumer surplus derived from new and free goods and services; (iv) the need for supplementary measures for GDP; and (v) the disconnect between GDP growth and welfare. Audience concerns on mixing concepts by introducing consumer surplus valuation for free digital goods and services (based on WTA estimates) with goods and services valued at market-prices when estimating an expanded measure of GDP. In addition, audience inquiries on the opportunity costs of enjoying free goods and services given the daily time constraint.

While the current framework for measuring GDP and consumption expenditures does not include consumer surplus, measuring consumer surplus is beneficial when looking at consumer welfare. It would also be interesting to conduct experiments comparing the market-price with the WTA for “regular” goods and services in the CPI market-basket. The presenter notes that it is easier to do incentive compatible experiments using the WTA concept. The emphasis is on providing an

approximate adjustment to traditional GDP growth that gives an indication of the welfare effects of new and free digital goods and services as a supplementary indicator.