

Bartering for ‘Free’ Information: Implications for Measured GDP and Productivity

Rachel Soloveichik (Bureau of Economic Analysis, United States)

Jon Samuels (Bureau of Economic Analysis, United States)

Leonard Nakamura (Federal Reserve Bank of Philadelphia, United States)

Paper Abstract:

‘Free’ information from the Internet is ubiquitous. While some of this information is supported by advertising revenue, and thus covered in our earlier research (Valuing ‘Free’ Media in GDP: An Experimental Approach,” Nakamura, Samuels and Soloveichik 2016), the majority of this content is supported by marketing. In this paper, we introduce an experimental GDP methodology which includes marketing-supported information in both final expenditures and business inputs. For example, Kelley Blue Book would be final expenditures when it is used by a consumer to research used car prices. On the other hand, the same website would be a business input when it is used by a construction company to research used small truck prices.

Our method for accounting for ‘free’ information is production based. We measure the resource input into the information (or other content) of the medium, rather than a measure of the consumer surplus arising from the content. BEA uses a similar production oriented approach when measuring other components of GDP. In contrast, other researchers used broader approaches to measure value above production costs. Brynjolfsson and Oh (2012) attempt to capture some of consumer surplus by measuring the time expended on the Internet. Varian (2009) argues that much of the value of the Internet is in time saving, an additional metric for capturing consumer surplus. The McKinsey Institute (Bughin et. al 2011) attempts to measure the productivity gain from search directly.

We find that including ‘free’ information in the production account has little impact on either GDP or total factor productivity (TFP). Between 2006 and 2015, measured nominal GDP growth rises by 0.02% per year, real GDP growth rises 0.07% per year and TFP growth rises 0.03% per year. Before 2006, nominal GDP growth rises by only 0.005% per year, real GDP growth rises by only 0.003% per year and TFP growth rises by 0.012% per year. Accordingly, including ‘free’ information in the input-output accounts slightly ameliorates the recent slowdown in growth, but it is not nearly enough to reverse the slowdown.