Valuing ‘Free’ Media in GDP: An Experimental Approach

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Paper Abstract:

‘Free’ consumer entertainment and information from the Internet, largely supported by advertising revenues, has had a major impact on consumer behavior. Some economists believe that gross domestic product (GDP) growth is badly underestimated because GDP excludes online entertainment (Brynjolfsson and Oh 2012; Ito 2013; Aeppel 2015). This paper introduces an experimental GDP methodology which includes advertising-supported media in both final expenditures and business inputs. For example, Google Maps would be final expenditures when it is used by a consumer to plan vacation driving routes. On the other hand, the same website would be a business input when it is used by a restaurant to plan delivery routes.

Contrary to BEA’s critics, including ‘free’ media in the input-output accounts has little impact on either GDP or total factor productivity (TFP). Between 1998 and 2012, measured nominal GDP growth falls 0.005% per year, real GDP growth rises 0.009% per year and TFP growth rises 0.016% per year. Between 1929 and 1998, measured nominal GDP growth rises 0.002% per year, real GDP growth falls 0.002% per year and TFP growth rises 0.004% per year. These changes are not nearly enough to reverse the recent slowdown in growth.

Our method for accounting for ‘free media’ is production oriented in the sense that it is a measure of the resource input into the entertainment (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 measured GDP. In contrast, other researchers used broader approaches to measure value. 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.

In particular, this production oriented accounting has no method to account for instances where the good or service precedes the revenue that it eventually generates. Over the past two decades, many Silicon Valley firms have followed the disruptive business model described as URL: Ubiquity now, Revenue Later. Some firms have been creating proprietary software or research, which is already captured in the national accounts as investment. Other firms have been

creating intangible investments in open source software, customer networks and other organizational capital. Despite their long-run value, none of these intangible assets are currently captured in the national accounts as investment. If we treat these asset categories as capital, then the productivity boom from 1995 to 2000 becomes even stronger and the weak productivity growth of the past decade may be ameliorated somewhat.