Aggregate Productivity and the Level of Living

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The purpose of GDP is to measure production, though it is often used as a broader indicator of economic well-being. The purpose of aggregate productivity (TFP) is to measure the change in aggregate output per unit of input and is often used to assess innovation, but it too is also used to proxy welfare change. GDP and TFP measures sit within the production account, but (Basu & Fernald, 2002) argues that changes in aggregate TFP are, in fact, directly proportional to changes in aggregate welfare (in their stylized closed economy representative agent model). Thus, they provide a clear conceptual link between the production account and welfare measurement.

This paper argues that once their stylized economy includes other features, such as international trade, it's no longer output per unit of input that is linked to welfare, but expenditure per unit of income, termed the level of living by (Jorgenson, 2010). The level of living can be measured within in the Income and Expenditure Account and fits within the basic framework of the national accounts, but is currently not implemented as a part of the official statistics in the U.S. This paper assembles such an account for the U.S. by building off the official U.S. national accounts. The empirical contribution of this paper is to present estimates of the level of living in comparison to aggregate TFP in the U.S. between 1947 and 2016. Preliminary estimates indicate that between 1947 and 2010, aggregate total factor productivity grew by 0.59% per year, while the level of living grew by 0.74% per year. Focusing on the more recent period that includes the productivity growth slowdown in the U.S., between 2007 and 2010 productivity grew at 0.06% per year, while the level of living fell by about 0.40% per year, though this does not take into account the various cyclical factors that affect measurement over the business cycle. The completed paper will present revised estimates that cover the entire postwar period between 1947 and 2016. Given the conceptual link between the level of living and welfare change, one way to increase the SNA's congruence with economic theory is to include the Income and Expenditure Account in current and constant prices, along with the level of living.