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# Economic Measurement

Ben S. Bernanke

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I appreciate the opportunity to speak at a conference with the important theme of economic measurement. In many spheres of human endeavor, from science to business to education to economic policy, good decisions depend on good measurement. More subtly, what we decide to measure, or are able to measure, has important effects on the choices we make, since it is natural to focus on those objectives for which we can best estimate and document the effects of our decisions. One great pioneer in this subject area, of course, is Simon Kuznets, who was awarded the Nobel Prize in 1971 for his work on economic measurement, including the national income accounts. Over the years many economists have built on his work to further improve our ability to quantify aspects of economic activity and thus to improve economic policymaking and our understanding of how the economy works. The remarkably broad and ambitious research program of this conference and the impressive expertise that has been assembled illustrate the continued vitality of this field. Evolving technologies that allow economists to gather new types of data and to manipulate millions of data points are just one factor among several that are likely to transform the field in coming years.

As we think about new directions for economic measurement, we might start by reminding ourselves of the purpose of economics. Textbooks describe economics as the study of the allocation of scarce resources. That definition may indeed be the “what,” but it certainly is not the “why.” The ultimate purpose of economics, of course, is to understand and promote

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the enhancement of well-being. Economic measurement accordingly must encompass measures of well-being and its determinants.

In the tradition of national income accounting, economic policymakers have typically focused on variables such as income, wealth, and consumption. The Federal Reserve has a statutory mandate to foster maximum employment and price stability, which motivates our extensive efforts to monitor and forecast measures of employment and inflation. Substantial research and the development of data collection infrastructures have, over the years, greatly enhanced our ability to receive timely and accurate measures of those variables. Aggregate measures, such as gross domestic product and personal consumption expenditures, are useful for monitoring people's ability to meet basic material needs and for tracking cyclical and secular changes in the economy as a whole. Indeed, the experience of the recent financial crisis and the ensuing recession was strongly reflected in nearly all of these aggregate measures, indicating the severe economic stress felt by millions of people and hundreds of communities across the country.

But, as many of you will discuss this week, aggregate statistics can sometimes mask important information. For example, even though some key aggregate metrics—including consumer spending, disposable income, household net worth, and debt service payments—have moved in the direction of recovery, it is clear that many individuals and households continue to struggle with difficult economic and financial conditions. Exclusive attention to aggregate numbers is likely to paint an incomplete picture of what many individuals are experiencing. One implication is that we should increase the attention paid to microeconomic data, which better capture the diversity of experience across households and firms. Another implication, however, is that we should seek better and more-direct measurements of economic well-being, the ultimate objective of our policy decisions.

Although the field is still young, there have been interesting developments in the measurement of economic well-being. In a commencement address two years ago titled “The Economics of Happiness,” I spoke about the concepts of happiness and life satisfaction from the perspective of economics and other social science research.<sup>1</sup> Following the growing literature, I define “happiness” as a short-term state of awareness that depends on a person's perceptions of one's immediate reality, as well as on immediate external circumstances and outcomes. By “life satisfaction” I mean a longer-term state of contentment and well-being that results from a person's experiences over time. Surveys and experimental studies have made progress in identifying the determinants of happiness and life satisfaction. Interestingly, income and wealth do contribute to self-reported happiness, but the relationship is more complex and context-dependent than standard utility theory would

1. See Bernanke (2010).

suggest.<sup>2</sup> Other important contributors to individuals' life satisfaction are a strong sense of support from belonging to a family or core group and a broader community, a sense of control over one's life, a feeling of confidence or optimism about the future, and an ability to adapt to changing circumstances. Indeed, an interesting finding in the literature is that the overwhelming majority of people in the United States and in many other countries report being very happy or pretty happy on a daily basis—a finding that researchers link to people's intrinsic abilities to adapt and find satisfaction in their lives even in very difficult circumstances.<sup>3</sup>

This line of research has generated alternative measures of well-being that are frequently survey-based and incorporate elements such as psychological wellness, the level of education, physical health and safety, community vitality and the strength of family and social ties, and time spent in leisure activities. These measures have begun to inform official statistics and have started to be discussed in policy debates. An interesting and unique case is the Kingdom of Bhutan, which abandoned tracking gross national product in 1972 in favor of its Gross National Happiness index based on a survey that incorporates these types of indicators. Taking the measurement of well-being in a cross-country framework, the Organisation for Economic Co-operation and Development (OECD), as part of its OECD Better Life Initiative, has created a "better life index" that allows a side-by-side comparison of countries according to various quality-of-life indicators that could, at least in principle, be followed over time.<sup>4</sup> Other somewhat-more-conventional economic indicators that bear on quality of life, and that accordingly might be developed and followed in more detail, include changes in the distribution of income, wealth, or consumption; the degree of upward mobility in material measures of well-being; indications of job security and confidence about future employment prospects; and households' liquidity buffers or other measures of their ability to absorb financial shocks. All of these indicators could be useful in measuring economic progress or setbacks as well as in explaining economic decision-making or projecting future economic outcomes.

Continued work on the measurement of economic well-being will likely lead to greater recognition by economists of the contributions of psychology—an area that has been explored by pioneers like 2002 Nobel laureate Daniel Kahneman. One topic on the frontier of economics and psychol-

2. Canonical models of economic decision-making presume individual maximization of "utility," or well-being. They tend to focus on the consumption of goods or services and assume that more consumption is preferred to less. For example, see Mas-Colell et al. (1995)

3. For examples drawn from Organisation for Economic Co-operation and Development countries from the mid-1970s to the mid-1990s, see Di Tella and MacCulloch (2008). For a survey of evidence on adaptability, see Frederick and Loewenstein (1999), pp. 302–29.

4. See Organisation for Economic Co-operation and Development (2011).

ogy is the neurological basis of human decisions, including decisionmaking under risk and uncertainty, intertemporal choice, and social decision-making.<sup>5</sup> Researchers are investigating behavioral tendencies in a variety of circumstances—for instance, by examining human responses to perceived inequality, losses, risk, and uncertainty; the need for autonomy; and the importance for well-being of social ties and community. For example, brain imaging research has documented differences in the brain regions that light up in response to losses and gains—a clear physical manifestation of the “loss aversion” documented in the earlier behavioral studies in economics and psychology.<sup>6</sup> Evolutionary psychologists suggest that humans experienced evolutionary benefits from brain developments that included aversion to loss and risk, and from instincts for cooperation that helped strengthen communities.

Measurement of well-being is an important direction, but just one of many new directions for economic measurement being explored in the field generally and at this conference in particular. I am glad to see scholars and practitioners continuing to push the frontiers of economic measurement with a broad perspective and with open minds. As Arthur Conan Doyle’s immortal character Sherlock Holmes aptly put it, “It is a capital mistake to theorize before one has data.”<sup>7</sup> As I said at the beginning, good economic analysis and policymaking depend on good measurement, and the work you are doing will accordingly yield significant benefits. I thank you for the opportunity to give these short remarks, and I wish you the best for a productive and stimulating conference.

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5. For example, see Loewenstein et al. (2008).

6. See Tom et al. (2007).

7. See Doyle ([1892] 1900), p. 7.

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