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Economic growth, inequality, and well-being

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ABSTRACT

In advanced industrial societies, rising levels of inequality have contributed strongly to the observed gap that has emerged between per capita income and the Index of Sustainable Economic Welfare (ISEW), which in its current versions is known as the Genuine Progress Indicator (GPI). Yet the ISEW/GPI approach to measuring the social costs of inequality has been criticized as ad hoc. The present paper reviews the literature on this topic and efforts to resolve it based on the construction of indicators grounded in: (a) a classical utilitarian ethical framework; and (b) empirical evidence on the relationship between income and well-being. In the United States, after-tax income per capita grew at an annual rate of 1.7% between 1979 and 2011. A growth rate of 1.2% per year arises when income is adjusted to account for the social costs of inequality. The most common adjustment used in ISEW/GPI studies yields a similar growth rate despite much smaller subtractions from baseline income.

1. Introduction

In the decades preceding the 2008 financial crisis, a cascade of new technologies and institutional transitions were associated with a period of rapid economic growth. Although income growth is often interpreted as a measure of rising social welfare, ecological economists have long argued that the process of growth generates a wide array of social and environmental costs that serve to decouple the relationship between well-being and material prosperity (Daly, 1977; Victor, 2008). The seminal work of Daly and Cobb (1989), for example, evaluated economic trends in the United States between 1950 and 1986. Although per capita income rose by 2.0% per year during this period of analysis, an adjusted welfare measure — the Index of Sustainable Economic Welfare (ISEW) — increased by just 1.0% per year.

More recent studies have updated and extended the ISEW, which in revised form is now generally known as the Genuine Progress Indicator (GPI). The resulting literature supports an even stronger conclusion than the initial findings of Daly and Cobb. In a broad range of industrialized nations, the ISEW/GPI metrics reached their maxima during the 1970s and 1980s with a subsequent downturn or plateau in more recent decades (Lawn, 2003; Talberth et al., 2007; Jackson, 2011). Kubiszewski et al. (2013) present a detailed summary of this literature, concluding that economic growth fails to improve the quality of life once gross domestic product reaches a level of roughly $7000 per capita, a finding that is consistent with Max-Neef's (1995) work on the "threshold hypothesis."

A decoupling between growth and welfare is supported by data on people's subjective life satisfaction, which has remained largely unchanged since World War II in the high-income societies of Europe, North America, and Japan (see Kahneman et al., 1999; Layard, 2005). A number of factors have been advanced to explain this decoupling, including increased economic inequality and reductions in the provisioning of various social, cultural, and environmental services. On these points, the work of Pickett and Wilkinson (2009) is particularly salient. These authors present a battery of evidence documenting the links between inequality and a variety of social maladies, including declining trust, impacts on psychological and physical health, adverse educational outcomes, violent crime, and impaired social mobility.

Yet despite the importance of establishing a well-grounded method for quantifying the costs that have accompanied growth, core questions remain concerning the theories and methods employed in this area of research (Bleys, 2008; Bagstad et al., 2014). For example, although the ISEW/GPI framework adjusts personal consumption to account for a wide range of effects, Neumayer (1999) presents evidence that the disparity between ISEW/GPI indicators and standard measures of economic growth is dominated by just two factors: (a) the environmental costs imposed by greenhouse gas emissions; and (b) the social costs imposed by rising economic inequality. Moreover, Neumayer notes that the ISEW/GPI approach to valuing inequality is ad hoc, grounded in neither a formal theory of welfare measurement nor in empirical research on society's willingness to allocate scarce resources to reduce the gap between the rich and the poor.

There is no question that rising inequality presents important issues that should be addressed in a suitably specified welfare index. In the United States, for example, data from the Congressional Budget Office (2014) show that high-income households have witnessed relatively large increases in purchasing power in recent decades with significantly smaller increases for middle- and low-income households (Fig. 1). One key point is that the share of after-tax income paid to the top 1% of

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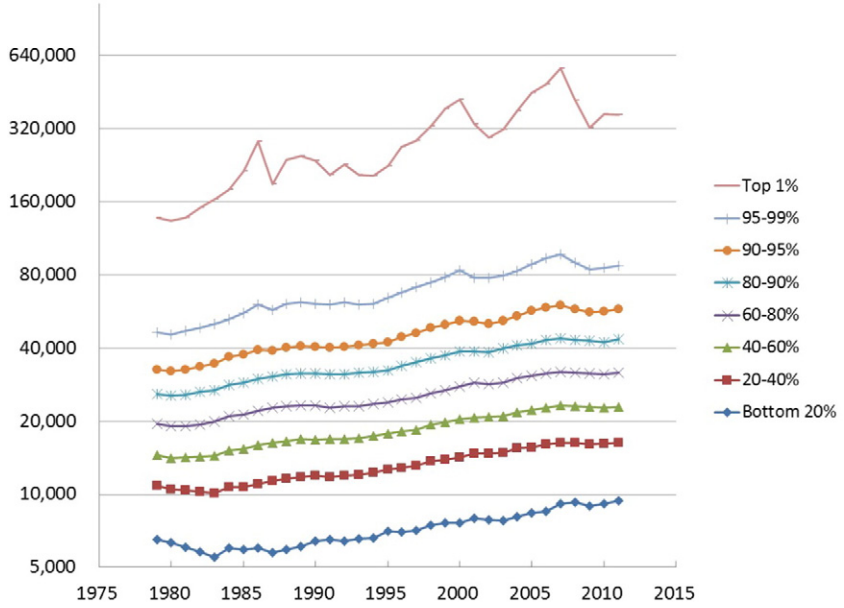

Fig. 1. U.S. after-tax household income by percentile. (2011 USD per person).

households increased from 8% in 1979 to a peak value of 17% in 2007. This observation is linked to structural changes in the economy that have been brought about by technological change and globalization. In the eyes of some observers, these changes have resulted in a "winner-takes-all" economy (Frank and Cook, 1996) in which the gains of growth have been directed disproportionately to highly skilled professionals and — most especially — the owners of financial wealth (Piketty, 2014).

The present paper reviews the response to Neumayer's challenge to develop a theoretically and empirically sound method for adjusting a standard measure of income for inequality. First, it examines in greater detail the back and forth between Neumayer and Lawn (2003) regarding the proper way to incorporate inequality into the ISEW/GPI framework. Second, it reviews the contributions to developing a welfare-theoretic approach to gauging inequality, focusing specifically on the literature associated with the Atkinson index (Atkinson, 1970), which accounts for both the empirical distribution of income and the society's aversion to economic inequality.

Third, it discusses a significant limitation of the standard formulation of the Atkinson index — its omission of the importance of positional effects and social status in mediating the relationship between income and well-being. To address this issue, we review the empirical literature on the influence of relative income effects and the implications that ensue for the construction of a modified Atkinson index as a theoretically preferred method for measuring the social costs of inequality. Finally, to illustrate the application of this approach, we compare the growth of absolute income with an adjusted measure of social welfare based on U.S. data for the period 1979 through 2011. In the modified Atkinson index calculations for the U.S. presented below, average income rose at an annual rate of 1.7% per year in the period of analysis, while our adjusted measure grew at a rate of just 1.2%. By way of contrast, the standard ISEW/GPI approach yields a similar growth rather despite much smaller absolute adjustments. Accounting for additional costs such as the social cost of carbon dioxide emissions would lead to a wider gap between growth and welfare.

2. Inequality in the ISEW/GPI Framework

The declining marginal utility of income, or more colloquially the assertion that an "additional [say] thousand dollars in income adds more to the welfare of a poor family than it does to a rich family" (Daly and Cobb, 1989, p. 31), has been widely accepted by economists working on subjective well-being. The ISEW/GPI approach accounts for the social costs of inequality by multiplying per capita consumption by a measure that corrects for inequality. The original ISEW calculations presented by Daly and Cobb utilized the "Least Quintile" index, which is linked to the maximin criterion associated with Rawls (1971). Subsequent work, however, has typically relied on the better-known Gini coefficient (Lawn, 2003). The first step required in the ISEW/GPI Gini coefficient approach is to establish a baseline year and measure inequality with reference to distributional changes relative to the reference year. The adjusted measure of per capita consumption at date t is then calculated using the formula:

$$\tilde{C}(t) = C(t) * G(0)/G(t). \tag{1}$$

In this equation, $C(t)$ is the unadjusted measure of per capita consumption and $G(t)$ is the Gini coefficient given the base year $t = 0$. The Gini coefficient represents the concentration ratio of income — where complete concentration is equal to one, and complete equality is zero. [See Dagum (2008) for a detailed exposition and interpretation.]

Lawn (2003) views this method of accounting for inequality as objective because it makes no explicit value judgment regarding society's preference for levels of inequality. Due to the large body of research conducted by Easterlin (1974, 1995, 2005) and others (Blanchflower and Oswald, 2004), it is empirically clear that an unequal distribution of income contributes negatively to a nation's overall welfare. According to Lawn, the ISEW/GPI approach avoids any value judgment regarding the desirable level inequality by utilizing a base year and adjusting the welfare derived through overall consumer spending only as the distribution becomes *more* unequal.

On the other hand, Neumayer (1999, 2000); Dietz and Neumayer (2006), and Jackson and Stymne (2000) see numerous problems with the standard ISEW/GPI method of accounting for inequality. First, Jackson and Stymne (2000) criticize the Gini adjustment because it does not satisfy the principle of diminishing transfers, which requires that the effect of a transfer lessens as the absolute level of income grows (Schwartz and Winship, 1980). Furthermore, Jackson and Stymne (2000) argue that the Gini coefficient is premised on hidden value judgments — implicitly valuing distributions closer to the center. Finally, Dietz and Neumayer (2006) and Jackson and Stymne (2000) both identify the Gini coefficient as bereft of any welfare-theoretic