

Economic Growth and Sustainable Welfare

„The Welfare Puzzle“

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Background

The discussion about welfare measures has gained momentum in 2007. OECD and the European Parliament jointly organized a conference under the title “beyond GDP”. At about the same time a commission for measuring progress, true wealth and the well-being of nations was formed in France. Chaired by Nobel laureate Joseph Stiglitz the commission published a report that contained proposals for alternative ways to measure welfare. Besides those recent developments it has to be mentioned, that the debate about deficiencies of GDP as an indicator for welfare and alternative welfare measures is quite old. It started already in the 1970s. But contemporary discussions about the limitations of GDP as an indicator for welfare are mostly ignored in growth theory and macroeconomics, which is clearly reflected in textbooks. Also in politics, no alternative indicator of welfare has gained enough ground to be of significance, compared to GDP. In public debate the situations seems to be even worth. What are the reasons for this?



Mission

- Probably the single most important reason for a welfare indicator that replaces, or at least supplements GDP, is to **guide (economic) policy**.
- The terms sustainability and welfare show an important similarity: they require an **integrated treatment of ecological, social and economic aspects**.
- This poster and the underlying paper aim to create awareness and understanding of the **challenges and obstacles** associated with an integrated measurement of economic, social and ecological targets.
- We believe that such an understanding helps to **strengthen cooperation** between different scientific disciplines, **clarify causal relationships** between economic, social and ecological problems and helps to develop more sophisticated **tools and indicators to guide policy**.

Economic Jigsaw Piece

Gross Domestic Product (GDP): The system of national economic accounts has been developed and implemented in response to the great depression during the 1930s and 1940s. Its main task was to better understand the crisis and help to improve planning of war production. At that time of high unemployment, ecological and social problems were considered to be less important than economic ones. The resulting indicator, gross domestic product (GDP) basically measures **production**. Producing and selling goods creates income. The fact that income is part of welfare should not prevent us from recognizing that there are other relevant components as well. The critique of GDP as a measure of welfare rests on three pillars:

1. How it treats natural resources and natural destruction (ecological critique). The removal of environmental damages as well as the depletion of non-renewable resources count as contribution to GDP. Reductions in the stock of “natural capital” are not considered (Leipert 1986).
2. Omissions of social aspects like the distribution of income (social critique).
3. It only includes market transactions (economic critique). Other economic activities like housework are either neglected or systematically underrepresented.

GDP focuses on production (and consumption possibilities). Its interpretation as a measure of welfare coincides with a determined materialistic worldview. The main problem in economics (based on GDP as a performance indicator) is the employment of resources (i.e. to prevent unemployment) and not the conservation of environmental stocks or the prevention of environmental damage.



Social Jigsaw Piece

The Human Development Index (HDI) is part of the annual Human Development Report of the UN (UNDP 2007/2008). It consists of three equally weighted sub-indices: GDP at purchasing power parity, life expectancy and educational attainment. It is easily seen that HDI focuses on the social dimension of welfare and neglects environmental aspects. Its primary task is to enable the comparison of different countries.



Ecological Jigsaw Piece

The **Ecological Footprint (EF)** is one of the most prominent and popular environmental indicators. It measures the resources (land and water) required to keep people at their actual level of material requirements. The required resources are calculated in square kilometres and can be compared to the locally or globally available land. An EF larger than one is unsustainable. The Ecological Footprint is able to cope with one of the major environmental concern which is “**carrying capacity**”. This requires calculation in physical terms and provides a straightforward and easily understandable interpretation. Economic aspects and causal relationships as well as social ones are neglected.



Compound Indicators (GDP correction approaches)

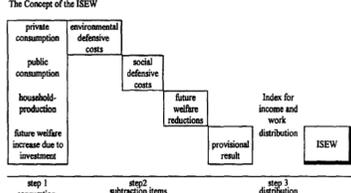
The **Environmental Performance Index (EPI)** is based on more than seventy policy related variables. They are scaled from 0 to 100 and compiled to 25 indicators. Indices are used to aggregate them. The EPI is calculated for about 150 countries and designated to help economic and environmental policy makers to carry out their jobs. The EPI includes a corrected GDP.

System of Environmental and Economic Accounts 2003 (SEEA 2003): The idea behind this indicator is to calculate a “green GDP”. Such a project requires the valuation of the depletion of natural resources, costs for the removal of environmental damage and environmental pressures, in terms of money. Besides the fact that the SEEA has been worked on conceptually for years, there are still no estimation results for a “green GDP”.

Index for Sustainable Economic Welfare (ISEW)

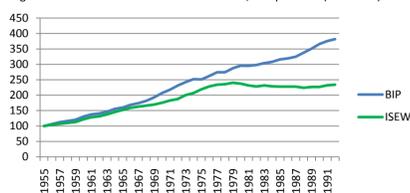
The ISEW is an economic welfare indicator that integrates the ecological, social and economic dimensions of welfare in terms of money. It tries to calculate the level of welfare that can be kept for a long time. Calculation mainly consists of three steps which are illustrated in Figure 1. The ISEW has been proposed by Daly and Cobb (1989) and was calculated for some countries. The Austrian ISEW has been calculated for the period 1955 – 1992 (Figure 2). The comparison between GDP and ISEW shows a continuously increasing GDP. ISEW increases only until the beginning of the 1980ies and stagnates afterwards. The main reasons behind these deviations are rapidly increasing ecological long-term damages (CO₂ emissions), increasing income inequality and the increased female labour market participation (associated with a substitution of household labour with market goods). One has to keep in mind that there are many problems involved in such a calculation. It is a pragmatic attempt, based on available data, to overcome specific problems of GDP as a measure of welfare.

Figure 1: The Concept of ISEW



Source: Stockhammer et al (1997)

Figure 2: GDP and ISEW for Austria 1955–1992; real per head (1955=100)



Source: Stockhammer and Fellner (2009)

Conclusions

Many ecological, social and economic performance indicators have been developed. Besides the effort put into reporting of different aspects of welfare, the different approaches have parted ways. Environmental approaches care about future welfare reductions. They typically use physical indicators to tackle the problems of carrying capacity and system thresholds. Social indicators usually care about distributional effects and social participation. Economic indicators try to capture and calculate all relevant aspects of actual welfare in monetary units. While there was an intense debate on the fusion of the ecological, social and economic dimensions of sustainable welfare already 20 years ago, we still lack an integrated welfare measure to guide economic policy. In view of the global ecological challenges (Stern 2006) a renewed effort to develop integrated indicators is necessary.



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Abstract The paper gives an overview of economic and ecological indicators of sustainable economic welfare. The Gross Domestic Product and the Index of Sustainable Welfare are discussed as potential indicators of welfare. While there was an intense debate on the fusion of the ecological, social and economic dimensions of sustainable welfare already 20 years ago, in the past ten years the ecological and economic approaches have parted ways. A renewed effort to develop integrated indicators is urgently necessary.
 Keywords: Economic growth, sustainability, economic welfare, ecological degradation