

## The Sixth IMF Statistical Forum

### SESSION I. FRAMEWORK FOR ECONOMIC WELFARE “BEYOND GDP”. WHAT IS NEW IN THE DIGITAL AGE?

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CHAIR: Louis Marc Ducharme (IMF Statistics Department)  
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#### SESSION TOPIC

*Why do we need measures of welfare that are directly linked to economic progress but not captured by existing national accounts and price statistics? Has the need for indicators of whether growth has been inclusive become more urgent? What about household non-market production (e.g., housekeeping, child care, cooking and services of volunteers)? Has digitalization allowed welfare and non-market production to grow more than GDP?*

#### SUMMARY OF PRESENTATIONS

**1. *Accounting for Growth in the Age of the Internet: The Importance of Output-saving Technical Change* (Charles Hulten and Leonard Nakamura)**

By modelling the effect of technical innovation on consumption—for example, the use of free digital services to inform decisions—the authors estimate output-saving through consumers using their incomes more efficiently to maximize their well-being. This new framework is not intended to replace GDP but rather to complement it by including the estimated value of welfare gains into an ‘expanded’ GDP (EGDP) measure. The framework treats consumer benefits arising from technological revolution as a separate component of consumer welfare that leverages conventional GDP—which in its optimization process stops at Output GDP. The new framework incorporates the Lancaster Consumption Technology assumption and the EGDP Welfare Metric (output-savings), allowing welfare to grow faster than real GDP. EGDP values the produced units of goods (resource-based GDP) separately from their uses (welfare).

**2. *Towards a Framework for Time Use, Welfare and Household-centric Economic Measurement* (Leonard Nakamura and Diane Coyle)**

The authors set out an alternative measure of economic progress to GDP that considers time allocation over paid work, household work, leisure and consumption with measures of well-being while engaging in different activities. They advocate an experimental set of time and well-being accounts, with a particular focus on digitally-driven shifts in behavior. The aspect of time

resource and constraint to consumption and production is very important to GDP measurement, and in this context, reference is made to the relationship of routine activities and non-routine activities to market production, home production and consumption and leisure with a different lens on production and productivity. Econometric studies highlight modalities of time-use choice margins concerning the allocation of household time between market and home production; and the link to digitalization of services.

**3. *The Elephant Curve of Global Inequality and Growth* (Lucas Chancel, Facundo Alvaredo, Thomas Piketty, Emmanuel Saez and Gabriel Zucman)**

The World Wealth and Income Database (WID) was created in 2015. Based on the input of over 100 researchers around the world, it systematically combines fiscal, survey and national accounts data to form a superlative topical source. GDP illustrates aggregate levels and growth but not distributional changes. Drawing from the WID, the authors find that global inequality almost universally widened from 1980 to 2016, with the wealthiest one percent capturing over double the income growth of the bottom 50 percent. They show that inequality both within and between most regions is growing, though at different speeds. When income growth shares are plotted by income percentile, the result is the ‘elephant curve’, depicting a bulge of above-average gains in low-income countries, muted gains in middle-to-high income countries, and a vast increase accruing to the wealthiest few. Forecasting from 2016 to 2050, they find no improvement in inequality between individuals, even under optimistic assumptions of growth in emerging economies, implying a present need to identify new policy approaches.

**QUESTIONS AND ANSWERS:**

Questions focus on (i) adapting sources and methods to the digital age;(ii) utility, consumption and time-use analysis; (iii) income measurement and inequality; and (iv) sustainability.

The modern, knowledge-based economy has decoupled the relationship between the cost of inputs and the value of outputs seen in the industrial era; while there are valuable uses of the existing concept of GDP, we must work harder to evaluate distributional/welfare changes. Distributional analysis illustrates that official statistics have missed a major shift in the economic landscape. Samuelsson noted GDP is, and always was, a parable – we can develop a modern parable.

Updating the parable by introducing the utility function into growth analysis moves growth accounting from an exercise based on a metric that is objective and in principle measurable (units of output largely transacted on the market) to one that is subjective and for which no directly measurable yardstick is available (utility). Accounting for changes in utility is very difficult when you have huge shifts in the economic environment that provide new choices and where new preferences arise—as an old example, the advent of street lighting had a major impact on welfare but not on income.

There are different concepts of income that one can do distributional analysis on. The measures shown in the WID presentation are distributions based on pre-taxed income. Post tax data are

also available for some countries in the WID, but they indicate a similar picture. With regards to the United States rising inequality since the 1980s, it is partly due to tax reform, but also the evolution of the minimum wage, which declined in real terms by 30% compared to the 1960s.

To understand sustainability and intergenerational effects indicators beyond GDP are needed. It is important to develop broader welfare measures that incorporate externalities such as environmental degradation; global agreements to address these externalities may have adverse impacts on welfare of lower income groups thus distributional information is essential.