Session 1: Incorporating (Distributional) Well-Being into the SNA

(subtitle : helping the micro-data folks find the top 1 percent, and their missing wealth, consumption and income)

Summary and Comments by Tim Smeeding
UW -Madison and OECD
Two papers to start; more to come

- **Jorgenson and Schreyer:**
  “(C) the consumption paper” — macro to micro
  “Measuring Individual Economic Well-Being and Social Welfare within the Framework of the System of National Accounts”

- **Fixler, Johnson, Craig and Furlong:**
  “(Y) the income paper” — micro to macro
  “A Consistent Data Series to Evaluate Growth and Inequality in the National Accounts”

(W) “the wealth papers” also important and coming later in the conference
  - e.g., —Bergman; Coli & Tartamella; Durant, et al.
Background and Setting:

- BOTH papers – on the renewed interest in the measurement of welfare & its distribution
  - Stiglitz, Sen, and Fitoussi (2009); HLEG continues

- Agenda of “beyond GDP” -- important measures often outside production and asset boundaries of *The SNA*

- **RECIPROCITY IN ACTION:**
  Key aspects of material well-being and social welfare well-being can be incorporated into SNA framework
  *AND* the SNA can also better inform distributional analyses
Paper #1 – Summary

“Measuring Individual Economic Well-Being and Social Welfare within the Framework of the System of National Accounts”

by

Dale Jorgenson and Paul Schreyer
Measuring Well-being in the SNA Macro to Micro

• Address both conceptual and empirical issues:
  – Theory and measurement of equivalence scales
  – Grouping and group-specific price indices
  – Explicit introduction of equity considerations
  – Matching survey information to national accounts

• Empirical example based on U.S. consumer expenditure survey
Equivalence scales and units

• Unit of analysis = "household"

• Simplifying assumption no 1: equivalence scale independent of prices, use of popular equivalence scale = (size of HH)^0.5

• Simplifying assumption no 2: the equivalence scaling factor is applied to groups of households: eg consumption deciles

• The group is then treated like a single, homogenous households

• Comment: could go other way around and adjust individual records
Group-specific price indices

- **Simplifying assumption 3**: preferences of a household only depend on relative prices but are otherwise independent of the level of income or household welfare, and only a single price index is needed for deflation.

- **Intermediate solution** in present paper: price indices specific to group of household where group = income quintile (but not clear why prices are dependent on income anyway).

- **Comment**: but choice of price indices is crucial (see next paper)
Linking Survey Data and SNA

- **KEY ISSUE:** Surveys provide distributional information; SNA broader in scope and usually gives larger amounts – needs consistency

- Matching is important for consistent micro-macro link, but far from trivial and with significant impact on resulting measures of inequality:
  - OECD Expert Group work (Fesseau and Mattonetti 2013)
  - Fixler and Johnson (2014, and *this conference*)
  - Atkinson, Alverado, Piketty, Saez: WTID work
  - Fisher, Johnson, Smeeding, Thompson: consistent microdata for C,Y and W for the same households

- **Paper confirms non triviality in present application to distribution of consumption in the U.S.**
From Individual Well-being to Social Welfare

- **Welfare function** needed to aggregate across individuals (=equivalised households) and to have a number of properties (e.g., symmetry, non-decreasing in its elements,...)

- Explicit **normative element** needs to be set: i.e, a measure of *Aversion to Inequality* (Jorgenson-Slesnick and Atkinson measures)

- **Result** = consumption-based measure of living standards

- Comment but could just live with numbers alone, without risk aversion or SWF

- Comment: Correspondance of Categories: SNA and CEX?
-- J-S utilitarian case (=geometric average) and Atkinson ‘middle class’ case yield very similar results
-- During crisis/GR years, living standards dropped & have not yet recovered

Figure 1. Middle-class and utilitarian case under two specifications
United States, constant 2005 $  

Source: authors’ calculations.
Some conclusions

• Real household consumption per capita is a measure routinely employed as an indicator of economic well-being with or without weighting, SWF, etc.

• Head-count measures of the population should be replaced by household equivalence scales for C.

• Authors use econometric model to measure individual and social welfare, using equivalent household members rather than headcounts.

• Also use group-specific price indices and explicit equity considerations (which can be left out).

• Matching of survey income/consumption categories with national accounts is VERY important.
BOLD RECOMMENDATIONS

• STATISTICAL OFFICES SHOULD EXPERIMENT WITH SIMPLIFIED APPROACHES

• OECD SHOULD EXTEND THE WORK OF EXISTING EXPERT GROUPS TO DEVELOP INTERNATIONAL STANDARDS FOR MEASURING INDIVIDUAL AND SOCIAL WELFARE

• Final Comment: and it should be done in a consistent framework for Consumption (C), Income (Y) and Wealth (W)
Paper #2 –Summary

“A Consistent Data Series to Evaluate Growth and Inequality in the National Accounts”

Dennis Fixler
David Johnson
Andrew Craig
Kevin Furlong

Bureau of Economic Analysis
Distributional Measures are important in US and Internationally

  - Recommendation 4: National statistical offices should “give more prominence to the distribution of income, consumption, and wealth.”
  - “...Developing distributional measures of full [national account] income is, however, a formidable task. The most difficult challenge is to allocate to various groups those income flows that have been imputed at the macro level...for example, imputed rents from own-occupied housing.” (pg. 136)
  - Comment: to which I would add other rents and capital gains and losses as well as other items
What happens when growth and median household income diverge?

Growth Hasn’t Translated Into Gains in Middle-Class Income

Until around 1999, overall economic growth tended to correspond with growth in earnings for middle-income Americans. Since then, the two have diverged sharply.

Percent change indexed to 1993 level

NYTimes, Sept 17 2014
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CBO Median before tax income
NIPA Adjusted Median income
(Fixler/Johnson 2014)

NYTimes, Sept 17 2014
Both income measures *and* price index matter (comment could have used eq. scales here too)
Various Ginis for income suggest inequality is rising

(Comment why is SCF income rising fastest?)

Money Income (Census)

After tax and Transfer Income (CBO)

SCF Household Income (Wolff)
Purpose of Research: Mandated

- BEA FY11 budget proposal, which included producing “a decomposition of personal income that presents median as well as mean income…”
- Survey data suffer from under-reporting, & therefore must determine how to deal with measurement error in income
- Demonstrate that one can use NIPA data to adjust survey data to obtain alternative distributions and measures of inequality.
- Build on earlier work at BEA to produce distributional estimates (mean, median, Gini and by quintile) fully consistent with the national accounts
Data and Methods: Micro to Macro

• Begin with household income from Current Population Survey, 2006-2012
• Integrate spending, benefits and housing data from the Consumer Expenditure Survey, 2006-2012
• Statistically match CE to CPS microdata using a variety of demographic characteristics.
• Create a concordance for Personal Income for over 65 detailed categories
• *Ratio adjust each category for each household so that total Personal Income matches NIPA totals*
• *(comment crude but a start)*
• Adjust measures to 2006($) using PCE deflator
Many differences between (disposable) money income and SNA personal income (key ones in bold)

<table>
<thead>
<tr>
<th>Source</th>
<th>Census Money</th>
<th>BEA Personal Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment income</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Employer contribution to Soc Sec</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Employer-provided benefits</strong></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Investment income</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Imputed investment income</strong></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Government cash transfers</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Employee contribution to Soc Sec</td>
<td>Yes</td>
<td>No (subtract)</td>
</tr>
<tr>
<td>Retirement income</td>
<td>Yes</td>
<td>No (only int.)</td>
</tr>
<tr>
<td><strong>Cash assistance from others</strong></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Lump sum (IRA disbursements)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>In-kind government transfers</strong></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Other In-kind transfers*</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Home production</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Imputed rent</strong></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Capital gains</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
## Comparison of income measures

<table>
<thead>
<tr>
<th>Source Description</th>
<th>Estimated from CPS (not scaled)</th>
<th>Adjusted to match NIPA (scaled)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money Income (Census)</td>
<td>$63,593</td>
<td>N/A</td>
</tr>
<tr>
<td>Wages and Salaries</td>
<td>$47,857</td>
<td>$50,091</td>
</tr>
<tr>
<td>Finance and Business (interest, dividends, farm/non farm, rent)</td>
<td>$6,058</td>
<td>$17,003</td>
</tr>
<tr>
<td>Government transfers</td>
<td>$5,924</td>
<td>$7,779</td>
</tr>
<tr>
<td>Retirement and other less comingled factors</td>
<td>$3,754</td>
<td>N/A</td>
</tr>
<tr>
<td>equals Pseudo Income</td>
<td>$59,626</td>
<td>$76,137</td>
</tr>
<tr>
<td>plus financial</td>
<td>$13,765</td>
<td>$13,765</td>
</tr>
<tr>
<td>plus health and other transfers</td>
<td>$5,517</td>
<td>$8,304</td>
</tr>
<tr>
<td>health</td>
<td>$9,370</td>
<td>$12,274</td>
</tr>
<tr>
<td>net transfers (payouts less contributions)</td>
<td>$(3,853)</td>
<td>$(3,970)</td>
</tr>
<tr>
<td>equals Personal Income</td>
<td>$78,908</td>
<td>$98,206</td>
</tr>
</tbody>
</table>
Comparing 10th and 90th percentile income for Money and Personal income
Gini for Personal income is lower than for money income, and trend is flatter.
The lower Gini and the flatter trend are due to health benefits (at market values) and transfers.
Comparing results to Jones (2015) on the mean for the top 5% (top end missing in CPS!)

Jones Uses Top-income Database

Fixler, et al
Authors’ further issues and future work: My comments in RED

• Extend the estimates back to 1979
• Construct a distribution for PCE, and obtain the average propensities to consume (YAY)
• Differential under-reporting -- scaling factors may be (ARE) larger for higher income
• Improve the imputations and creation of synthetic data (esp. returns for wealth holding)
• Compare to the distribution in the tax data (and, even better, USE the SCF to get the top end)
Bottom Line: Needed Income, Consumption and Wealth

• Workhorse Life-cycle model

\[
\sum \beta^t U(c_t, \alpha_t)
\]

s.t. \( c_t + a_{t+1} \leq y_t + a_t(1 + r_t) \)

Hence

\[
y_t = c_t + a_{t+1} - a_t(1 + r_t)
\]
\[
y_t = c_t + \Delta NW
\]
\[
Y = C + \Delta NW \quad \text{- Haig-Simons measure}
\]

– If \( Y > C \), \( W \) rises by saving or loaning, including holding gains

– If \( Y < C \), \( W \) falls by dissaving or borrowing, including holding losses

• Need a consistent measure of \( C, I \) and \( \Delta NW \) for micro and macro accounts
Final Comments

• This is VERY important work (I know that others have their favorite work too—but these papers are about what’s important for distributional analysis of well-being)

- Major shares of income worldwide are flowing to capital holders from labor (Bourgignon, 2015; Atkinson, 2015)

- Surveys and macro accounts have trouble assessing the Y, C and W of the rich (imp. for both micro-distributional work and macro-modelling of demand)

• The whole thing is held together by Haig-Simons—which ought to be the triumvirate goal for flows

• And finally need measure W itself as the stock yields important benefits (insurance, power, leverage, dynastic transfers in-vivos—not counted as consumption??—and bequests, etc.)