Measuring the Distribution of Household Wealth Using the Financial Accounts of the United States

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Board of Governors of the Federal Reserve System

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Note: The analysis and conclusions set forth are those of the authors and do not indicate concurrence by the Board of Governors.
Why Do We Care about the Wealth Distribution?

“The extent of and continuing increase in inequality in the United States greatly concern me. The past several decades have seen the most sustained rise in inequality since the 19th century after more than 40 years of narrowing inequality following the Great Depression. By some estimates, income and wealth inequality are near their highest levels in the past hundred years, much higher than the average during that time span and probably higher than for much of American history before then. It is no secret that the past few decades of widening inequality can be summed up as significant income and wealth gains for those at the very top and stagnant living standards for the majority. I think it is appropriate to ask whether this trend is compatible with values rooted in our nation's history, among them the high value Americans have traditionally placed on equality of opportunity.”

Federal Reserve Chair Janet L. Yellen remarks at the Conference on Economic Opportunity and Inequality, Federal Reserve Bank of Boston, Boston, Massachusetts on October 17, 2014.
Recommendation II.9: Household Distributional Information

The Inter-Agency Group on Economic and Financial Statistics (IAG), in close collaboration with the G-20 economies, to encourage the production and dissemination of distributional information on income, consumption, saving, and wealth, for the household sector. The OECD to coordinate the work in close cooperation with Eurostat and ECB.

The **Target** is that by 2021 G-20 economies are:

Encouraged to compile and disseminate data on the distribution of income, consumption, savings and wealth by household groups (first priority: by income quintile), according to the methodology put forward by the Expert Group.
Distributional Financial Accounts (DFA)

- **Goal:** create a Distributional Financial Accounts (DFA), a quarterly data set that shows household wealth by income quintile

- Describe two different source data sets:
  1. **Survey of Consumer Finance (SCF):** a nationally representative survey of households
  2. **Financial Accounts of the United States (FA):** an integrated macro-level data set that shows balance sheets and capital flows of different sectors of the economy

- Explain methodology for combining micro SCF data with macro FA data
- Illustrate how DFA can shed new light on household wealth inequality in the United States
Survey of Consumer Finances (SCF)

- Micro level survey on household income, wealth, demographic characteristics, etc.
- Sponsored by the Board of Governors of the Federal Reserve System in cooperation with Department of the Treasury
- Survey contractor: National Opinion Research Center at the University of Chicago
- Consistent triennial survey, 1995-2016; Data available about 1 year after reference period
Survey of Consumer Finances (SCF)

- About 6,300 households are surveyed in an lengthy, voluntary, self-reported interview
- Duel-frame sampling:
  - **Area-probability sampling** - about a 65% response rate
  - **Separate list sample** - compiled from administrative data to over-sample wealthy people, about 30% response rate
- Use weights to combine samples into high-quality, nationally representative, detailed data set on U.S. households
### SCF 2016 Income Groups

Households are divided into income groups based on **pre-tax usual income:**

<table>
<thead>
<tr>
<th>Income Group</th>
<th>Annual income (2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quintile 1: 0% - 20%</td>
<td>&lt; $25,300</td>
</tr>
<tr>
<td>Quintile 2: 20% - 40%</td>
<td>$25,300 - $43,500</td>
</tr>
<tr>
<td>Quintile 3: 40% - 60%</td>
<td>$43,500 - $69,500</td>
</tr>
<tr>
<td>Quintile 4: 60% - 80%</td>
<td>$69,500 - $111,400</td>
</tr>
<tr>
<td>Quintile 5: 80% - 100%</td>
<td>&gt; $111,400</td>
</tr>
<tr>
<td>Top 10%: 90% - 100%</td>
<td>&gt; $177,100</td>
</tr>
</tbody>
</table>
Financial Accounts of the United States (FA)

- Macro level data set that includes consistent flow and balance sheet detail for sectors in the U.S. economy
- Published by Board of Governors of the Federal Reserve System
- Quarterly data 1952:Q1 – 2017:Q2; Annual data beginning 1945
- Published 10 weeks after the end of the reference quarter
Financial Accounts of the United States (FA)

- Full macro level household and nonprofits organizations sector balance sheet with detailed nonfinancial and financial assets, liabilities, and net worth
- Separate nonprofit organizations sector with annual data for 1989-2013, allowing its removal from the household and nonprofit organizations sector
- Mostly consistent with international standards described in the System of National Accounts (SNA2008), allowing better comparisons with other countries
- Household variables are computed from counterparty data or residually
Distributional Financial Accounts (DFA)

- **Higher frequency**: 1995:Q3 - 2017:Q2 (FA)
- **More timely**: latest quarter available with a 10 week lag (FA)
- **More comparable**: consistent with international reporting standards (FA)
- **More detailed**: household demographic information (SCF)
Methodology

1. Calculate SCF shares
   a. Receive household balance sheet data from SCF by income quintile
   b. Calculate each quintile group’s instrument share
   c. Linearly interpolate triennial shares into quarterly shares
   d. Hold last SCF share values constant through the last FA publication quarter
# SCF Data: Balance Sheet 2016

**Billions of dollars**

<table>
<thead>
<tr>
<th></th>
<th>Top 10%</th>
<th>Total</th>
<th>Top 10% Shares</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total assets</strong></td>
<td>61,250.2</td>
<td>99,119.5</td>
<td>0.62</td>
</tr>
<tr>
<td>Real estate</td>
<td>13,431.7</td>
<td>30,089.5</td>
<td>0.45</td>
</tr>
<tr>
<td>Consumer durable goods</td>
<td>1,030.6</td>
<td>3,278.6</td>
<td>0.31</td>
</tr>
<tr>
<td>Deposits</td>
<td>4,739.0</td>
<td>8,846.8</td>
<td>0.54</td>
</tr>
<tr>
<td>Securities</td>
<td>23,067.0</td>
<td>29,650.1</td>
<td>0.78</td>
</tr>
<tr>
<td>Equity in noncorporate business</td>
<td>13,383.8</td>
<td>17,232.0</td>
<td>0.78</td>
</tr>
<tr>
<td>Assets in retirement accounts</td>
<td>4,550.3</td>
<td>8,166.1</td>
<td>0.56</td>
</tr>
<tr>
<td>Other assets</td>
<td>1,047.9</td>
<td>1,856.3</td>
<td>0.56</td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td>4,217.0</td>
<td>11,942.6</td>
<td>0.35</td>
</tr>
<tr>
<td>Home mortgages</td>
<td>3,677.3</td>
<td>9,446.1</td>
<td>0.39</td>
</tr>
<tr>
<td>Consumer credit</td>
<td>437.9</td>
<td>2,357.9</td>
<td>0.19</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>101.9</td>
<td>138.7</td>
<td>0.73</td>
</tr>
<tr>
<td><strong>Net worth</strong></td>
<td>57,033.2</td>
<td>87,176.9</td>
<td>0.65</td>
</tr>
</tbody>
</table>
Methodology

1. Calculate SCF shares

2. Adjust FA instrument categories to better align with the SCF
   a. Exclude nonprofit organizations
   b. Exclude major household appliances and furniture from consumer durable goods
   c. Include non-corporate business real estate and mortgages in household measures
Methodology

1. Calculate shares

2. Adjust FA instrument categories to better align with the SCF

3. Apply quintile shares
   a. Multiply FA adjusted household assets and liabilities by calculated quarterly SCF quintile shares
   b. Aggregate series for each quintile group: total assets, total liabilities, and net worth
# Methodology

**DFA: Balance Sheet by Quintile, 2016**

Billions of dollars

<table>
<thead>
<tr>
<th>Quintile</th>
<th>Assets</th>
<th>Liabilities</th>
<th>Net Worth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2,049.1</td>
<td>539.4</td>
<td>1,509.7</td>
</tr>
<tr>
<td>2</td>
<td>3,595.9</td>
<td>1,059.2</td>
<td>2,536.7</td>
</tr>
<tr>
<td>3</td>
<td>6,776.2</td>
<td>1,891.3</td>
<td>4,884.9</td>
</tr>
<tr>
<td>4</td>
<td>11,056.3</td>
<td>3,218.8</td>
<td>7,837.5</td>
</tr>
<tr>
<td>5</td>
<td>59,754.6</td>
<td>7,540.3</td>
<td>52,214.3</td>
</tr>
<tr>
<td><strong>Of which: top 10%</strong></td>
<td>48,804.9</td>
<td>4,973.9</td>
<td>43,831.1</td>
</tr>
<tr>
<td><strong>DFA Total</strong></td>
<td><strong>83,232.1</strong></td>
<td><strong>14,248.9</strong></td>
<td><strong>68,983.2</strong></td>
</tr>
</tbody>
</table>
DFA: Net Worth by Income Quantile

Quarterly

Trillions of dollars

1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017

Top 10% 80-90% Quintile 4 Quintile 3 Quintile 2 Quintile 1

0 10 20 30 40 50 60 70 80

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<table>
<thead>
<tr>
<th></th>
<th>1995:Q3</th>
<th>2017:Q2</th>
<th>Change</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securities</td>
<td>6.7</td>
<td>24.6</td>
<td>17.9</td>
<td>267%</td>
</tr>
<tr>
<td>Retirement assets</td>
<td>2.3</td>
<td>10.1</td>
<td>7.8</td>
<td>339%</td>
</tr>
<tr>
<td>Equity in real estate</td>
<td>6.0</td>
<td>17.9</td>
<td>11.9</td>
<td>198%</td>
</tr>
<tr>
<td>Deposits</td>
<td>3.4</td>
<td>11.6</td>
<td>8.2</td>
<td>241%</td>
</tr>
<tr>
<td>Other</td>
<td>3.6</td>
<td>10.1</td>
<td>6.5</td>
<td>181%</td>
</tr>
<tr>
<td><strong>Net worth</strong></td>
<td><strong>22.0</strong></td>
<td><strong>74.3</strong></td>
<td><strong>52.3</strong></td>
<td><strong>231%</strong></td>
</tr>
</tbody>
</table>

Note: Units are trillions of dollars. The “other” category is unidentified assets net of consumer credit and other liabilities.
Balance Sheet of Income Quintiles 1 through 4

Quarterly

- Net worth
- Securities
- Retirement accounts
- Real estate
- Deposits
- Other assets
- Other liabilities
- Mortgages

Trillions of dollars

1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017

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Equity in Real Estate by Income Quintile

Quarterly

Trillions of dollars

Note: Equity in real estate is calculated as the market value of real estate holdings less mortgages.
Security Holdings by Income Quintile

Note: Securities include corporate equities, mutual fund shares, and bonds.
Next Steps

- Address remaining inconsistencies between the two data sets, such as defined benefit pension plans
- Investigate adapting this method to look at the effect of wealth shocks on consumption
- Consider splitting groups by different variables such as level of education, age, and geographic region