Currently, inequality data have two notable deficiencies:

- They miss a large fraction of national income, either because of measurement errors or narrow concepts.
- They are published at a low annual frequency with a significant lag, unlike most macroeconomic statistics (aggregate income and wealth, UI claims, employment).

This project mobilizes data from IRS, BLS, BEA, DOL, etc. to create:

- Monthly/quarterly synthetic micro-data consistent with national accounts.
- Released immediately after each national account update.

This allows us to follow month-by-month how national income is distributed (and redistributed).
Methodology

We start from annual microdata of Distributional National Accounts (Piketty, Saez, Zucman 2018) to create monthly/quarterly microdata files.

For every month/quarter,

- We take moving average of current and adjacent yearly microdata.
- For 2020 and 2021, we start from 2019 (latest DINA year).
- We rescale each component to its monthly/quarterly aggregate.

Works well as short-term aggregate changes swamp short-term distributional changes for most components (e.g., corporate profits).

In addition for labor income and govt benefits:

- We rescale the number of wage workers and unemployment benefits recipients.
- We replace the distribution of labor income by a direct monthly estimate.
- We explicitly simulate some government programs during COVID.
Our monthly/quarterly data are directly comparable to **annual** data in both levels and distribution.

- NIPA also presents monthly and quarterly data on an annualized basis.
- True monthly/quarterly data have more inequality that gets smoothed out at annual frequency.
- Our method bypasses this issue which is good for 2 reasons:
  - Limited longitudinal high frequency data (Fixler, Gindelsky, Kornfeld 2021)
  - Our Monthly, quarterly, and annual data are all directly comparable.
- Our monthly stats tell us how annual stats would look like if monthly stats stayed frozen for 1 year.
Sources

- Aggregate quarterly and monthly income components from the BEA.
- Monthly employment from the BLS. (BLS employment series)
- Weekly unemployment claims from the Department of Labor. (DOL UI series)
- Wage distribution from BLS *Quarterly Census of Employment and Wages* (QCEW):
  - Administrative dataset, published quarterly.
  - Monthly employment.
  - Quarterly wages.
  - Data by (6-digit NAICS industry code) × (county) × (ownership sector).
  - 1,000,000 observations each month.
  - Can be used to infer complete wage distribution (following Lee 2020)
Top 1% wage income share: adjusted QCEW vs. Tax Data

![Graph showing the share of income over time for Tax Data and QCEW (adjusted).](image)

- **Tax Data**
- **QCEW (adjusted)**
  - NAICS
  - SIC (legacy)
Validation: predicted vs. realized annual factor income growth

- Bottom 50%
- Middle 40%
- Next 9%
- Top 1%

Regular year
Tax reform year
45deg line
Linear fit
Validation of the method: yearly change in the top 1% factor income share

We correctly anticipate the sign about 80% of the time.
Microdata makes it easy to model new gov't programs

- Rule-based simulation of stimulus checks.
  - 04/2020: $1,200, phasing out from $75,000 to $99,000 (≈ $300bn, 1.5% of NI).
  - 01/2021: $600, phasing out from $75,000 to $87,000 (≈ $170bn, 0.9% of NI).
  - 03/2021: $1,400, phasing out from $75,000 to $80,000 (≈ $400bn, 2% of NI).

- Unemployment benefits:
  - Extended duration.
  - Extra $600 per week from March 2020 to July 2020 (≈ $260bn, 1.3% of NI).
  - Extra $300 per week from January to September 2021 (≈ $360bn, 1.8% of NI).
COVID-specific programs (continued)

- Paycheck Protection Program (PPP):
  - Loan program to keep small businesses afloat ($1,000bn, 5% of NI).
  - Loans forgiven if business keeps its number of employees and their wages stable.

- Following Autor et al. (2022), assume the subsidy fell 70% on owners’ profits and 30% on workers’ earnings.

- Novel estimate of the program’s distributional effects on labor:
  - Data for each individual individual loan publicly available.
  - Match to QCEW cells by (date) × (county) × (6-digit NAICS industry code).
  - About 5,700,000 individual loans matched to 5,500,000 QCEW cells.
  - **Extensive margin**: workforce covered by wage percentile.
  - **Intensive margin**: share of wage bill covered by wage percentile.
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Income of the bottom 50% since COVID (working age population, 20–64) (equal-split within couples, ranking by factor national income)
Before transfers, all groups lost, especially the bottom 50%
But disposable income gives a different picture
Data diffusion and next steps

- Monthly, public-use synthetic microfiles will be made available.
- Results will be published each quarter on realtimeinequality.org when BEA publishes its quarterly national income estimates.
- Launch at end of January 2022 when GDP and Personal Income for full 2021 year come out.
- This is a prototype to be continually improved.
Share of workforce covered by PPP

Percentile of wage distribution

Share of workforce (%) vs. Percentile of wage distribution
Share of wages covered by PPP

Percentile of wage distribution

Share of 6-month wage bill (%)
Breakdown of PPP loan proceeds

Provisions spent on:
- EIDL refinancing
- Debt interest
- Mortgage interest
- Utilities
- Rent
- Health care
- Payroll

Percentile of wage distribution

Share of PPP loan amounts (%)
Share of PPP loans forgiven

Percentile of wage distribution

Share forgiven (%)
### Targeting of the different programs

<table>
<thead>
<tr>
<th></th>
<th>PPP loans</th>
<th>UI benefits</th>
<th>Stimulus checks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom 50%</td>
<td>17%</td>
<td>60%</td>
<td>49%</td>
</tr>
<tr>
<td>Middle 40%</td>
<td>31%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>Next 9%</td>
<td>20%</td>
<td>4.4%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Top 1%</td>
<td>31%</td>
<td>0.25%</td>
<td>0.016%</td>
</tr>
</tbody>
</table>
Undistributed profits of top 1%, predicted vs. actual (absolute change in % of national income)