Income Distributions and Dynamics in America

Launch Event
November 13, 2023

The opinions and conclusions expressed here are those of the authors and should not be interpreted as reflecting the views of the U.S. Census Bureau, the Federal Reserve Board of Governors, the Federal Reserve Bank of Minneapolis, or any other person associated with the Federal Reserve System. The Census Bureau has ensured appropriate access and use of confidential data and has reviewed these results for disclosure avoidance protection (Project 7511151; Disclosure Authorization Numbers CBDRB-FY23-0277, CBDRB-FY23-0673, CBDRB-FY23-CES014-019, and CBDRB-FY23-CES014-016).
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Over the last four decades, the US workforce has seen large changes in earning power, affecting workers from the top to the bottom.

Yet much of what we know about these patterns comes from data with two major limitations: too few observations and (or) no tracking of workers over time.

Without such data, researchers and policymakers cannot answer many important but straightforward questions.
Income inequality in the U.S. has increased

REAL EARNINGS GROWTH SINCE 1967

Income inequality in the U.S. has increased

REAL EARNINGS GROWTH SINCE 1967

Did earnings in every US state widen this much?

What about the top 5% of earners? The top 2% or 0.5%?

Are earnings for non-majority groups between these trends? Or different all together?

What about for women? In different states? And age groups?

INTRODUCING
Income Distributions and Dynamics in America (IDDA)

A powerful resource for advancing our understanding of income differences across America.
The map displays data for the year you choose, while the line chart displays your selected values over time.

[Map of the United States with earnings data]

Explore the 50th percentile of the distribution of individual earnings among people who are Hispanic in 2005.

Compare these values with White incomes?  Yes  No

Hispanic individual earnings
50th percentile, 2005

Hispanic individual earnings, 2005-2019
50th percentile

All earnings are inflation adjusted to 2019 dollars. The race and ethnicity groups we consider are Hispanic, non-Hispanic American Indian or Alaska Native, non-Hispanic Asian, non-Hispanic Black, non-Hispanic Native Hawaiian or Pacific Islander, and non-Hispanic White. The map legend shows a truncated range to reduce the visual impact of outliers.
The map displays data for the year you choose, while the line chart displays your selected values over time.

Explore the 50th percentile of the distribution of individual earnings among Females in 2005.

Compare these values with male incomes? ☐ Yes ☐ No

Female individual earnings
50th percentile, 2005

Female individual earnings, 2005-2019

$20K $22.5K $25K $27.5K $30K

$25,000 $27,500 $30,000 $32,500 $35,000 $37,500

All earnings are inflation-adjusted to 2019 dollars. The race and ethnicity groups we consider are Hispanic, non-Hispanic American Indian or Alaska Native, non-Hispanic Asian, non-Hispanic Black, non-Hispanic Native Hawaiian or Pacific Islander, and non-Hispanic White. The map legend shows a truncated range to reduce the visual impact of outliers.
The map displays data for the year you choose, while the line chart displays your selected values over time.

Explore the 10th percentile of the distribution of individual earnings among females in 2005. Compare these values with male incomes? Yes No

Female individual earnings
10th percentile, 2005

Female individual earnings, 2005-2019
10th percentile

$2k $2.5k $3k $3.5k $4k

All earnings are inflation adjusted to 2019 dollars. The race and ethnicity groups we consider are Hispanic, non-Hispanic American Indian or Alaska Native, non-Hispanic Asian, non-Hispanic Black, non-Hispanic Native Hawaiian or Pacific Islander, and non-Hispanic White. The map legend shows a truncated range to reduce the visual impact of outliers.
The map displays data for the year you choose, while the line chart displays your selected values over time.

Explore the **90th** percentile of the distribution of **individual earnings** among females in **2005**.

Compare these values with male incomes? **Yes**. **No**.

Female individual earnings, 2005

90th percentile, 2005

90th percentile

Female and U.S. population earnings, 2005-2019

All earnings are inflation adjusted to 2019 dollars. The race and ethnicity groups we consider are Hispanic, non-Hispanic American Indian or Alaska Native, non-Hispanic Asian, non-Hispanic Black, non-Hispanic Native Hawaiian or Pacific Islander, and non-Hispanic White. The map legend shows a truncated range to reduce the visual impact of outliers.
The map displays data for the year you choose, while the line chart displays your selected values over time.

Explore the 90th percentile of the distribution of individual earnings among females in 2019.

Compare these values with male incomes? Yes No

Female individual earnings relative to male earnings
90th percentile, 2019

Female individual earnings compared with male earnings, 2005-2019
90th percentile

All earnings are inflation adjusted to 2019 dollars. The race and ethnicity groups we consider are Hispanic, non-Hispanic American Indian or Alaska Native, non-Hispanic Asian, non-Hispanic Black, non-Hispanic Native Hawaiian or Pacific Islander, and non-Hispanic White. The map legend shows a truncated range to reduce the visual impact of outliers.
What is IDDA?
• A comprehensive resource on income distributions and dynamics for US subpopulations and sub-national geographies

• Public good: data available to researchers and policymakers

• Better understanding of how the economy works (including to achieve FOMC mandate)
IDDA resource = data center + viz tool + articles

- Articles: narratives, features, and research papers
- Interactive data visualization tools
- Bulk data downloads

www.minneapolislisd.org/idda
IDDA = data center + viz tool + articles

Articles:
narratives, features, and research papers

The prosperity of high-earning foreign-born workers
August 17, 2023

The long shadow of the 2001 recession
August 17, 2023

Inclusive recessions, inclusive recoveries?
July 27, 2023
IDDA = data center + viz tool + articles

Interactive data visualization tools
IDDA = dataset + viz tool + articles

You can download the IDDA data from this page. Please refer to our guidelines below for citation format and for including your reports and papers in the IDDA bibliography.

Download the IDDA codebook and documentation.

Percentiles of income module
This file contains select percentiles of incomes by type of income, location, demographic group, and year.

Download full module: pctl_of_inc_all_data.csv

Download submodules by income type and geographic level:
Individual-level W-2 data for U.S.: pctl_of_inc_us_w2.csv (size: 0.8 MB)
Individual-level W-2 data for states: pctl_of_inc_state_w2.csv (size: 5.7 MB)
Address-level 1040 data for U.S.: pctl_of_inc_us_1040.csv (size: 0.6 MB)
Address-level 1040 data for states: pctl_of_inc_state_1040.csv (size: 3.3 MB)

Top income shares module
This file contains top income share within and across demographic groups by type of income, location, demographic group, and year.
IDDA statistics

• Large **granular** dataset constructed by combining two big data sources
  
  • IRS: tax records
    • all filed individual income tax return Form 1040s
    • all employer-filed wage and tax statement Form W-2s
  
  • U.S. Census Bureau:
    • individual demographic information, especially race and ethnicity

• Over 6M statistics built on 20+ years (1998-2019) of administrative data from the IRS and the Census
Building blocks

- Income Tax Return Form **1040**
  - Total wages, salaries and tips (line 7)
  - Adjusted gross income (line 37)
  - 1998-2019

- Wage and Tax Statement Form **W-2**
  - Total wages and salaries (box 1)
  - Deferred compensation (box 12a-12d)
  - 2005-2019

- Census linkages
  - Individual identifier (PIK)
  - Housing unit identifier (MAFID)

- Census demographic data
  - Social Security Administration
    - Sex, place of birth, year of birth/death
  - Best Race and Ethnicity Administrative Records
  - Composite File
  - Master Address File
Dimensions of IDDA statistics

- Wages & salaries
- Total compensation
- Gross income
- Non-wage income
- Age
- Gender
- Race and ethnicity [6 Census groups]
- US-born status
- Federal
- Individual state + DC
- Combined native areas boundaries
- All 1040 households (addresses)
- All W2 earners
- Prime-age working W2 earners
- Change window [1/5 year change]
- Income percentile
- Top income share
- Change percentile
- Income bin
- Transition shares
Consider Asian Women earnings in South Dakota in 2012

- **Top to bottom income value**
  - How much is the bottom/top decile of earnings?

- **Top incomes’ share of the pie**
  - What share of total earnings within group goes to its top earners?

- **Group share of top incomes**
  - What share of top earnings/earners across all groups in SD goes to this group?

- **Bin-to-bin income mobility**
  - What fraction moves from the bottom to top earnings quartile, say, after 5 years?

- **Top to bottom income change**
  - How much is the bottom/top decile of earnings changes among earners in the bottom quartile, say, after 1 year?
Income distribution: income percentiles

South Dakota all earners annual wages in 2012
Income distribution: income percentiles

South Dakota Asian Women annual wages in 2012

p10  2822
p25  9286
p50  21700
p75  34320
p90  50810
p95  73180
Income dynamics: quartile-to-quartile transitions

South Dakota all earners annual wages in 2007

South Dakota all earners annual wages in 2012

Transition matrix for Asian Women in SD

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* denotes suppressed statistics
South Dakota Asian Women annual wages below 25th percentile in 2012
IDDA = dataset + viz tool + articles

Bulk download modules

- Percentiles of income
- Top income shares
- Top income population shares
  - Full module
  - US x W2
  - States x W2
  - US x 1040
  - States x W2

- Income change distributions
- Income transition matrices
  - Full module
  - US x W2 @ 1 or 5-year horizon
  - States x W2 @ 1 or 5-year horizon
  - US x 1040 @ 1 or 5-year horizon
  - States x W2 @ 1 or 5-year horizon

+ Native Areas statistics
Limitations and caveats

Though built from universal administrative data

1. IDDA incomes are only pre-tax and taxable incomes from tax returns.
2. IDDA income therefore do not reflect informal incomes and non-taxable incomes.
3. IDDA does not contain public transfers to low income households, in particular.
4. IDDA does not have a breakdown of non-wage incomes by type.
5. IDDA is only representative of filed incomes, not all state-level or federal incomes.
6. IDDA statistics are not available for all feasible demographic groups or places.
7. IDDA does not contain any statistics on wealth.
Use *Income Distributions and Dynamics in America* statistics to analyze income growth, income mobility, and income inequality within and across groups defined by place, time, race, ethnicity, age, sex, and birthplace.

**download**
more than 6 million statistics

**visualize**
using our chart and map toolkit

**explore**
ongoing analysis of IDDA data

Join us for a virtual event introducing IDDA.

REGISTER NOW!

**November 13, 2023**
11:00 a.m.–12:00 p.m. CT
Following the 2001 recession, employment fell more for some groups than for others

Source: Current Population Survey
How do changes in employment relate to changes in income? IDDA data help provide insight.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America, U.S. household-level data.
State data point to larger earnings declines where employment fell more, especially for low earners

How annual income growth and employment changed for bottom 25 percent of income distribution, 2000–2007

50th percentile of income growth

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America, U.S. household-level data.
Data reveal differences in income growth following the recession across race/ethnicity groups as well.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America, U.S. household-level data.
Changes in income growth are more strongly associated with changes in employment for non-Hispanic White people

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America, U.S. household-level data.
Native Areas
Flash Talk
Native Incomes in IDDA

• Reliable income information for non-Hispanic American Indian or Alaska Native (AIAN) individuals and non-Hispanic Native Hawaiian or other Pacific Islander (NHOPI) individuals within U.S. states

• And for Native and non-Native individuals living in Native areas delineated by the U.S. Census Bureau
Income gaps between AIAN and White tax filers vary across U.S. states

**Median income (AGI)** among AIAN individuals relative to median White incomes (2005)

**90th percentile of income (AGI)** among AIAN individuals relative to White incomes (2005)

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America. U.S. Household-level data
Since 2009, income convergence in Native areas flattened and then reversed.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America
Incomes in tribal areas also diverge at the top

90th Percentile of Income (AGI) Relative to U.S. Population

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America
Incomes in tribal areas also diverge at the top

90th Percentile of Income (AGI) Relative to U.S. Population

Why are incomes diverging in a period of growth?

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America
Incomes in tribal areas also diverge at the top

What enabled relative incomes to hold steady in these still-turbulent years?
Incomes in tribal areas also diverge at the top

90th Percentile of Income (AGI) Relative to U.S. Population

What enabled relative incomes to hold steady in these still-turbulent years?

- Relative earnings fell for Native workers in tribal areas
- Migration into Native areas and falling labor force participation (Feir & Gillezeau 2018)
High mobility out of wage employment for low earners…

Transitions out of W-2 sample: Initial earnings in lowest quartile

Note: Each point gives the probability that a worker receiving a W-2 from their employer in the initial year (x axis) does not receive a W-2 in the subsequent year. Rate computed among workers living in Native areas in both years. Black lines show the median and maximum exit rate across U.S. states and the District of Columbia.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America
..and for high earners in Native areas

Transitions out of W-2 sample: Initial earnings in highest quartile

Note: Each point gives the probability that a worker receiving a W-2 from their employer in the base year (x axis) does not receive a W-2 in the subsequent year. Rate computed among workers living in Native areas in both years. Black lines show the median and maximum exit rate across U.S. states and the District of Columbia.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America
Native Incomes in IDDA

- Tribal incomes have diverged since early 2010s
- Non-labor income sources probably offset the large earnings declines from the Great Recession

- Importance of all types of incomes for granular subgroups
  - Especially alternative income sources in the context of Native economies
Q & A

For online attendees, please put your questions in the Zoom Q&A.
Learn more.

Use Stay Connected at www.minneapolisman.org/idda.

A recording of this webinar will be available shortly.

Or contact the Institute: MplsInstitute@mpls.frb.org
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