for all

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THE MAGAZINE OF THE OPPORTUNITY & INCLUSIVE GROWTH INSTITUTE

THE MANY DIMENSIONS OF INCOME INEQUALITY

FEDERAL RESERVE BANK OF MINNEAPOLIS

CONTENTS

Income Distributions and Dynamics in America (IDDA) is a powerful resource for advancing our understanding of incomes across America. Visit **minneapolisfed.org/idda** for data downloads, interactive charts and maps, research papers, and short analytical articles.

COVER ILLUSTRATION BY RYAN PELTIER

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Did you miss our fall 2023 issue? Visit **minneapolisfed.org/for-all** to catch up on past issues. Subscribe to this free magazine and never miss another issue.

For this issue, I could think of no better introduction to the Institute's new resource for advancing our understanding of incomes across America than the remarks Nathan Hendren offered at our launch event. So I've handed this page to Nathan! —Institute Director Abigail Wozniak

Gold-standard data powers deeper understanding of incomes in America

Nathan Hendren is a professor of economics at the Massachusetts Institute of Technology and a member of the Institute's advisory board. He delivered these remarks at the event launching the Institute's Income Distributions and Dynamics in America resource, to which we are devoting much of this issue. Watch the event recording at minneapolisfed.org/idda.

When I first heard about the Income Distributions and Dynamics in America project, I was immediately reminded of the countless students who have walked into my office over the past decade. They often come with an interesting question, but they face a key constraint: lack of data. Sometimes they want to study economic outcomes for specific demographic groups that are too small to be represented in the American Community Survey or Current Population Survey. Other times, they want to study the impact of a trade shock or technology change not just on average incomes but on inequality and income volatility. Some students want to map incomes experienced by people today back to where those people lived a few years ago prior to when some policy began.

These data constraints mean my students often cannot answer the big questions that motivate them. They might want to know how incomes have grown for Native communities relative to U.S. earners as a whole, or if the move of a major employer to their home state changed income inequality over time. Publicly available data just aren't granular and detailed enough to answer these types of questions.

Now, the obvious solution to the problems these students face is to get access to tax data from the IRS or demographic data from the Census Bureau (or better yet: linked Census Bureau–IRS data). The challenge, of course, is that this is far from straightforward. The IRS and Census Bureau go to incredible lengths to support research, but they face constraints on their time. As a result, there are limited numbers of projects they can support.

The Income Distributions and Dynamics in America resource takes a giant leap in expanding access to the powerful information that is held in administrative data. Through a research collaboration with the Census Bureau, this resource makes available to everyone millions of statistics on income inequality and income mobility over the life cycle—broken down to the state level and into detailed demographic subgroups. The backbone for the data construction in these statistics is linked Census Bureau–IRS data: Form 1040s and Form W-2s are linked to the demographic information people provide on the decennial census and other records. I may be slightly biased, as I've had the pleasure to work with this individual-level data, but this backbone dataset is the gold standard for measuring incomes in the U.S. The statistics, in my view, are an exciting public good for every researcher, student, and organization seeking to better understand the income experiences of earners in America. ★

Building research, building community

How the research assistant program leaves its mark on participants and the Institute **BY LISA CAMNER MCKAY**

When the Opportunity & Inclusive Growth Institute launched the Income Distributions and Dynamics in America (IDDA) resource in October 2023, it was a culmination of years of research on the part of economists at the U.S. Census Bureau and the Minneapolis Fed—and the research assistants who support them.

In economics, research assistantships are an increasingly common stepping-stone between undergraduate and graduate studies. Often, research assistants (RAs) provide day-to-day research support for economists, which helps RAs build specific skills that graduate programs look for.

For instance, as one of the RAs who helped to generate the 6 million statistics released with IDDA, Brandon Hawkins learned how to code efficiently for large datasets with billions of observations. "I also learned which program was best suited to different situations, such as data sampling and data visualization," Hawkins said.

But day-to-day research support "is only one piece of the bigger picture," said Institute Director Abigail Wozniak. "In particular, it misses how research is used and communicated." The Institute RA program purposely includes RAs in all aspects of what the Institute does. RAs support long-term research projects, assist with real-time analysis, participate in events, interact with visitors, and contribute to and fact-check this magazine.

This big picture made an impression on Ken Cowles in his first months as an RA. "I'm learning about the research process from the ground up— where to pull information from, what rabbit holes are worth going down and which should be avoided. And then, how to take what I'm finding and present it in a clear way," Cowles said.

Attending near-daily seminars is another way to engage with a diversity of research topics and methods. For Hawkins, hearing about a specific methodology at seminar prompted her to look into it more. It was, she realized, a useful method for studying changes to the recertification process for recipients of government food assistance, a project

Research Analyst Zach Swaziek and Research Assistants Natalie Gubbay and Ken Cowles attend an economics seminar at the Minneapolis Fed.

proposal that won her a National Science Foundation Graduate Research Fellowship Program grant.

And sometimes, it's about the friends you make along the way. After two years as an Institute research assistant, Zach Swaziek chose to attend graduate school at the University of Minnesota in part because of the opportunity to return to the Minneapolis Fed with the research analyst program, in which doctoral students at the university can work with Minneapolis Fed economists. Now in his third year of graduate school, Swaziek is excited to be working with Senior Institute Economist Illenin Kondo—as it happens, analyzing the statistics from IDDA that three years ago Swaziek helped put together.

"Our interests and skills are nurtured here," Cowles said. It's the type of environment that Wozniak herself experienced as an RA at the Chicago Fed, one she has emulated at the Institute. For economists, often the best way to measure people's preferences is to observe their behavior: Wozniak is one of five Institute economists who worked as an RA in the Federal Reserve System before or during graduate school who later returned to the Fed in their career. ★

NINA LEO

The research community at the Institute includes visiting scholars, consultants, economists, research analysts, and research assistants. These scholars bring a diversity of backgrounds, interests, and expertise to research that deepens our understanding of economic opportunity and inclusion as well as policies that work to improve both. We talked with four of them about their work.

AURÉLIE OUSS
Janice and Julian Bers Assistant Professor of Criminology, University of Pennsylvania

CRIMINAL JUSTICE INSIGHT, IN SIGHT

To study why defendants fail to appear for their court dates and how to improve attendance, economist Aurélie Ouss' research team went to court, spending hours seated in the gallery watching the proceedings.

"A lot of our policy apparatus has things like cash bail, pretrial detention, electronic monitoring—all these things to make sure that defendants show up to court," said Ouss.

But Ouss quickly realized that absent defendants are only part of the picture. Police officers, victims, witnesses, and attorneys miss court as much or more often than defendants. "When you go to court and see the number of continuances that happen ... 'continued,' 'continued,' 'continued'... you just start to notice these patterns in a way that we wouldn't have if we had just looked at the data for defendants."

Ouss and her co-authors paired these observations with large administrative datasets from the Philadelphia Courts and the Philadelphia District Attorney's Office. The resulting research prompted discussion across the criminal justice system about policy solutions that could improve court appearance dynamics for other contributors to case continuances, not just defendants.

Observing systems from within has been an integral part of Ouss' broader body of work, which she has dedicated to studying the design of criminal justice institutions and policies that can make law enforcement fairer and more efficient. Her first experience was volunteering at a prison in college. While simultaneously taking a class in policy evaluation, she began to connect these two worlds. "I wanted to see if economic tools could answer these complicated causal questions. Do we actually know what works to reduce crime?"

As a postdoctoral researcher at the University of Chicago Crime Lab, Ouss partnered with several criminal justice agencies, including the New York City Police Department. Now in Philadelphia, she has been able to embed a team within the district attorney's office, working on-site. These formal relationships protect data while allowing access to sensitive records about case outcomes and legal actor decision-making, such as plea offers that were rejected. They also allow for rapid feedback on study design to aid with policy implementation, said Ouss, and they offer participating jurisdictions access to research findings.

Looking forward, Ouss said she is interested in developing econometric tools and methods to better understand complex policy questions. For the rhetoric-laden field of criminal justice, her real-world, data-driven approach feels right on time.

—*Danielle Cabot*

Observing systems from within has been an integral part of Ouss' broader body of work.

JESSE ROTHSTEIN
Carmel P. Friesen Chair in Public Policy and Professor of Economics, University of California, Berkeley

MAKING DATA ACCESSIBLE FOR ALL

Nonpublic data helped launch Jesse Rothstein's economics career. As an economics Ph.D. student and research assistant at the University of California, Berkeley, he began working with data obtained by his advisors about SAT scores. He had a sense that he could use information about SAT scores to answer additional questions about the economics of education, and with permission, that's what he did. Rothstein's dissertation showed that a number of widely shared beliefs—that school competition increases quality, that SAT scores are a good guide to college performance—were not very well supported by the data.

In the years since graduate school, Rothstein, who joined the Institute's advisory board this year, has published high-impact research on topics including school finance reforms, college admissions, and residential racial segregation. Sometimes his research uses data that anyone can download and analyze: public-use census samples, for example, or the data used to calculate unemployment rates. But much of it, like much of current economic research, requires special types of data, such as firms' tax returns or workers' unemployment insurance records. "I was at the very beginning of a movement in the discipline where what made someone successful as an economist was having access to the data that other people didn't have," he reflected.

Seven years ago, Rothstein spearheaded an effort to democratize access to such data. The California Policy Lab (CPL), which Rothstein co-founded and co-directs, negotiates data access agreements with government agencies in the state of California. By wading through this tricky and costly process, CPL offers researchers a faster way to connect their creative ideas with good data. Rothstein describes this as "an effort to try to create a path to access the data that isn't specific to somebody who has connections."

CPL's data resources and projects focus on seven areas: criminal justice, education, labor markets, social safety nets, health, homelessness, and low-cost service delivery improvements. The group runs many internal projects carried out by CPL staff, including an experimental analysis of simplifying in-state scholarship information sent to California high school graduates. For hosted projects, CPL acts as a broker between outside researchers and agencies that hold large administrative datasets. The costs of these arrangements would be prohibitive for individual projects, but with agency approval, CPL can provide data access quickly and easily. "We've got hundreds of those going," Rothstein said.

—Andrew Goodman-Bacon

SHERIDAN FULLER
Economist, Board of Governors of the Federal Reserve System

A PATH TOWARD PUBLIC SERVICE

Growing up, Sheridan Fuller was surrounded by public service. His father was a 30-year Army veteran. His hometown of Virginia Beach holds the largest active-duty military population in the United States. His sister is currently a doctor in the Navy.

However, it wasn't just proximity to public servants that inspired Fuller, an Institute visiting scholar. He also fondly remembers his late father as a consumer of the news—CNN always on, a newspaper always in hand.

"Watching policymakers try to pass legislation to implement programs or rules, ... it made me think, 'Oh, government is a natural place to be in the arena, contributing to this work.'"

Those experiences led Fuller to earn a Master of Public Policy and become a Presidential Management Fellow at the Department of Health and Human Services (HHS). There, Fuller helped prepare the budgets for several public programs, including Temporary Assistance for Needy Families (TANF), adoption assistance, foster care, and child care subsidies.

At HHS, Fuller observed there seemed to be groups of people with two distinct skill sets: "One group was academic researchers who were trying to use their insights about what the evidence said to inform policy discussions. Another group, folks who came from the Hill or other federal agencies, really understood the political process and the key legislators involved," Fuller said. "I wanted to have both skill sets, and that was the impetus for going back to grad school to get my Ph.D."—which he did, in the human development and social policy program at Northwestern University.

Fuller's HHS experience has since anchored his research. He studied the long-term consequences of changes to eligibility criteria for Aid to Families with Dependent Children, the precursor to today's primary welfare program. He found that after restrictive "man in the house" rules that disproportionately excluded non-White families were repealed in 1968, participation in the program and educational attainment among Black families rose.

Now a Federal Reserve Board of Governors economist, Fuller wrestles daily with big questions about income support programs, child care, and other fiscal policy issues. That intersection of research and policy is right where he wants to be.

"If you had told me at the beginning of my Ph.D. that this is the job I would have," Fuller said, "I would have told you, 'This is perfect.'"

—Landon Peterson

RAJASHRI CHAKRABARTI
Head of Equitable Growth Studies, Federal Reserve Bank of New York

REAL-TIME TOOLS TO TRACK EQUITABLE GROWTH

Before 2022, few scholars had published research on how different groups of Americans might experience inflation differently. Researchers grappled with sparse, imperfect data. After decades of stable prices, inflation had frankly become kind of a humdrum topic.

That was then. Fast forward to May 2023 and the launch of the Equitable Growth Indicators from the New York Fed. Every quarter, Rajashri Chakrabarti and her Equitable Growth Studies team publish the most recent data on inflation, retail spending, employment, income, wealth, and debt—broken down by race, gender, education, income, age, geography, and veteran status.

"Averages do serve as reference points, but they do not tell the whole story," said Chakrabarti, who represents the New York Fed on the Institute's System Affiliates Board. "Now that these indicators are available, we are in the room with policymakers to bring up how a specific macroeconomic pattern we might be seeing is not equal—different groups are facing different patterns."

Chakrabarti and her colleagues leverage data from public and private sources to produce standardized indicators that follow demographic-specific trends over time. One innovation Chakrabarti highlights is the ability to track real earnings by subgroup, adjusted for that group's particular inflation rate.

The new indicators showed that as inflation rose in 2022, Hispanic households—whose "basket" of goods is weighted more heavily toward transportation—experienced higher inflation as fuel and used car prices soared. Lately, the pain has shifted toward Asian households, who are more exposed to stubborn inflation in housing costs.

Chakrabarti is watching the data to see how post-pandemic trends bear out over time. These include narrowing gaps between men and women in earnings and labor force participation. Whether these improvements hold up over time may hinge upon the persistence of work-from-home arrangements.

Much of Chakrabarti's research lies, in her words, "at the intersection of macroeconomics and inequality." Though she began as a labor economist focused on education, over 17 years at the New York Fed her interests have broadened, inspired by presentations and collaborations across the Fed System. Her papers-in-progress include education market responses to labor demand changes, the effects of debt forgiveness and forbearance, and the effects of natural disasters on low-income and minority households.

"I still love education, but my interests have evolved a ton during my time at the Fed," Chakrabarti said. "Who knows where I'll be going, but inequality will always be part of whatever I do."

—*Jeff Horwich*
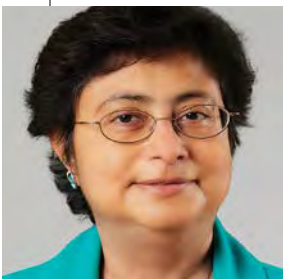
> **"We are in the room with policymakers to bring up how a specific macroeconomic pattern we might be seeing is not equal."**
>
> —Rajashri Chakrabarti

2023–24 Institute Visiting Scholars

The Institute annually invites selected scholars from many disciplines to pursue research while in residence at the Minneapolis Fed.

Rodrigo Adão
Associate Professor of Economics
University of Chicago Booth School of Business

Lukas Althoff
Postdoctoral Fellow
Stanford University

Joseph Altonji
Thomas DeWitt Cuyler Professor of Economics
Yale University

Bocar Abdoulaye Ba
Assistant Professor of Economics
Duke University

Brian Bucks
Section Chief, Credit Information Policy
Consumer Financial Protection Bureau

Marcus Casey
Associate Professor of Economics
University of Illinois at Chicago

Kathrin Ellieroth
Assistant Professor of Economics
Colby College

Sheridan Fuller
Economist
Board of Governors of the
Federal Reserve System

Michael Keane
Wm. Polk Carey Distinguished Professor
Johns Hopkins Carey Business School

Karen A. Kopecky
Economic and Policy Advisor
Federal Reserve Bank of Cleveland

Emily Leslie
Assistant Professor of Economics
Brigham Young University

Marta Morazzoni
Assistant Professor of Economics
University College London

Aurélie Ouss
Janice and Julian Bers
Assistant Professor of Criminology
University of Pennsylvania

Marta Prato
Assistant Professor of Economics
Bocconi University

Matthew Rognlie
Assistant Professor of Economics
Northwestern University

Jesse Rothstein
Carmel P. Friesen Chair in Public Policy
and Professor of Economics
University of California, Berkeley

Isaac Sorkin
Assistant Professor of Economics
Stanford University

Brittany Street
Assistant Professor of Economics
and Public Policy
University of Missouri

Conor Walsh
Assistant Professor in Economics
Columbia Business School

The Many Dimensions of Income Inequality

BY NATALIE GUBBAY AND LISA CAMNER MCKAY

ILLUSTRATION BY RYAN PELTIER

When Claudia Goldin won the Nobel prize in economics in 2023 for her research on women's labor market outcomes, it was simultaneously cause to celebrate women's progress toward economic equality and a sober reminder of how far there is to go. The gender gap in earnings closed significantly in the 1980s, but progress since has been slow, despite all the changes to the economic environment. In 2005, the median annual earnings of women was 69 percent that of men at the median. Fourteen years later, that number had inched up ... to 74 percent. Put another way: A woman earning the median income of $38,060 in 2019 would need to increase her income *by 35 percent* to reach the median male income of $51,430, according to data from Income Distributions and Dynamics in America (IDDA), a new resource from the Opportunity & Inclusive Growth Institute and the U.S. Census Bureau.

"We're often guilty of disregarding the enormous scale and long history of gender disparities," Goldin wrote in her 2021 book *Career & Family*. The stickiness of the gender earnings gap is a reminder that for all the ink that has been spilled on the subject of income inequality in the United States, we have more hypotheses than conclusions when it comes to explaining the persistence of disparities.

In the case of the gender earnings gap, researchers have pointed to "greedy" jobs (Goldin's term), nonwage amenities, the motherhood penalty, and salary histories as factors in women's lives and the economy at large that shape women's earnings. However, it's difficult to test hypotheses about why women still earn only $0.74 for every $1 men do if that's the only number we know. With so many potential contributing factors, we need more *facts* about incomes in America so we can do a better job identifying the causes of—and solutions to—income disparities.

Enter IDDA

By combining data from the IRS and the Census Bureau, IDDA statistics provide information on income levels and mobility for detailed demographic and geographic groups in the United States.

This means we can use IDDA to identify where income disparities are larger and smaller. Is the gender
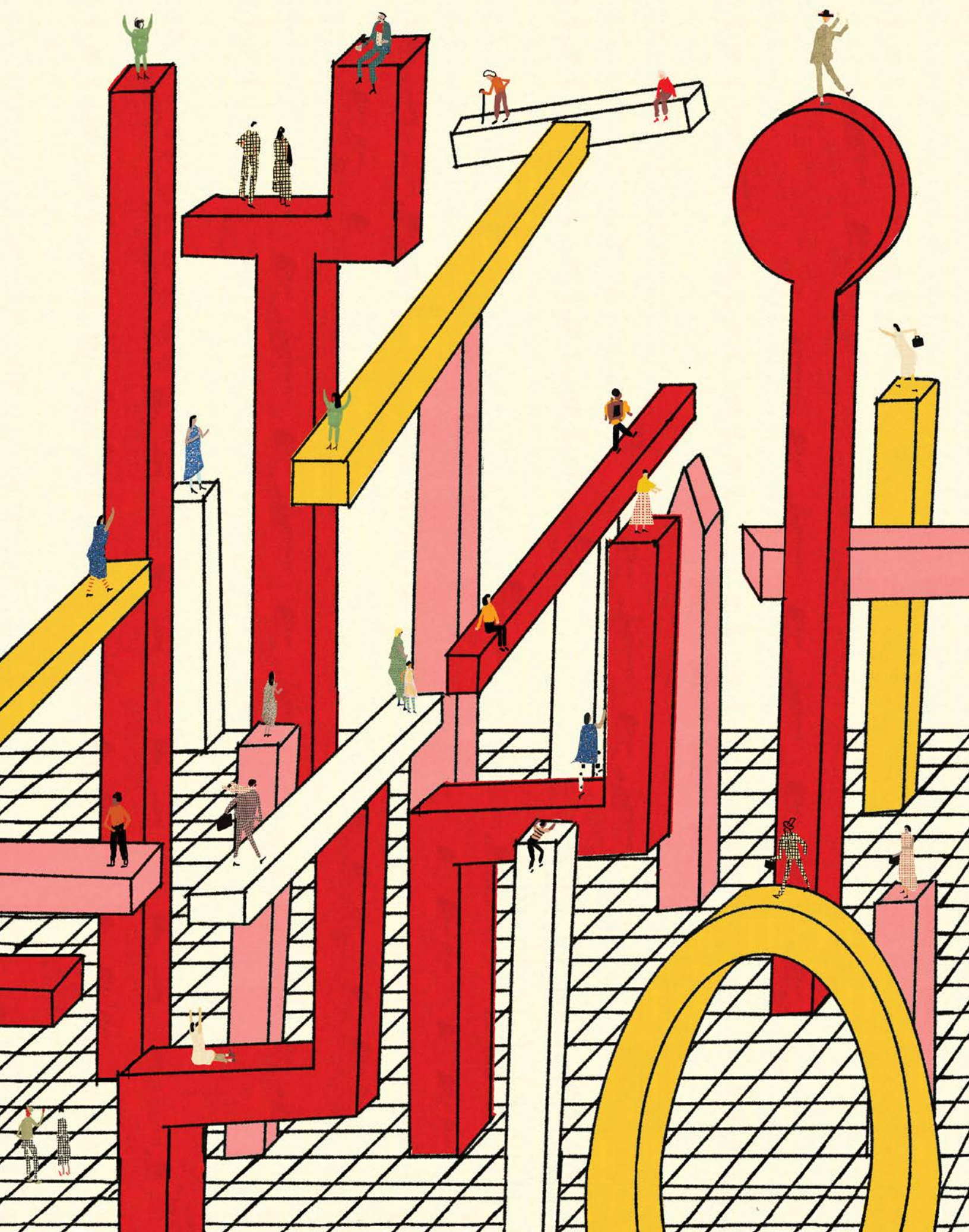
The IDDA statistics

Income Distributions and Dynamics in America summarizes extensive, anonymized data from restricted IRS and Census Bureau records. The statistics were constructed starting with all U.S. individual tax forms, making IDDA more comprehensive than sources based on surveys. All income measures in IDDA are pretax and pre-government transfer. Visit **minneapolisfed.org/idda** to explore the resource.

1: WOMEN'S EARNINGS AS A PERCENT OF MEN'S EARNINGS ACROSS THE INCOME DISTRIBUTION, 2005 AND 2019

This sample includes individuals ages 25 to 54 years old whose earnings were at least equivalent to working 20 hours a week for 13 weeks at the federal minimum wage for that year. Annual earnings include individual wages, salaries, tips, and some types of deferred compensation reported on Form W-2. Note that the x-axis is not to scale so that the values at high percentiles are visible.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America.

gap the same across the income distribution top to bottom, for instance? Do some states have much larger gaps than others? IDDA can shed light on these dynamics not only for men and women but also across states; by race and ethnicity; by age; and at the individual and household levels.

"Having data for 50 states helps us get a more nuanced picture of how incomes are evolving and gives us opportunities to test hypotheses about how local factors or policies might matter," said Kevin Rinz, an economist at the Census Bureau and one of the principal investigators on the IDDA team. Data alone won't automatically tell us what combination of economic factors and policies are causing income disparities. But when economic outcomes across states show varying degrees of success, that can be a starting point to identify where policies are working well and where they are not. On the other hand, consistency across states—and across time—might highlight patterns that are more deeply entrenched, requiring sustained national-level attention.

It is an ambitious and worthy goal to understand and address earnings gaps in the labor market. It's one that requires data resources that are up to the task.
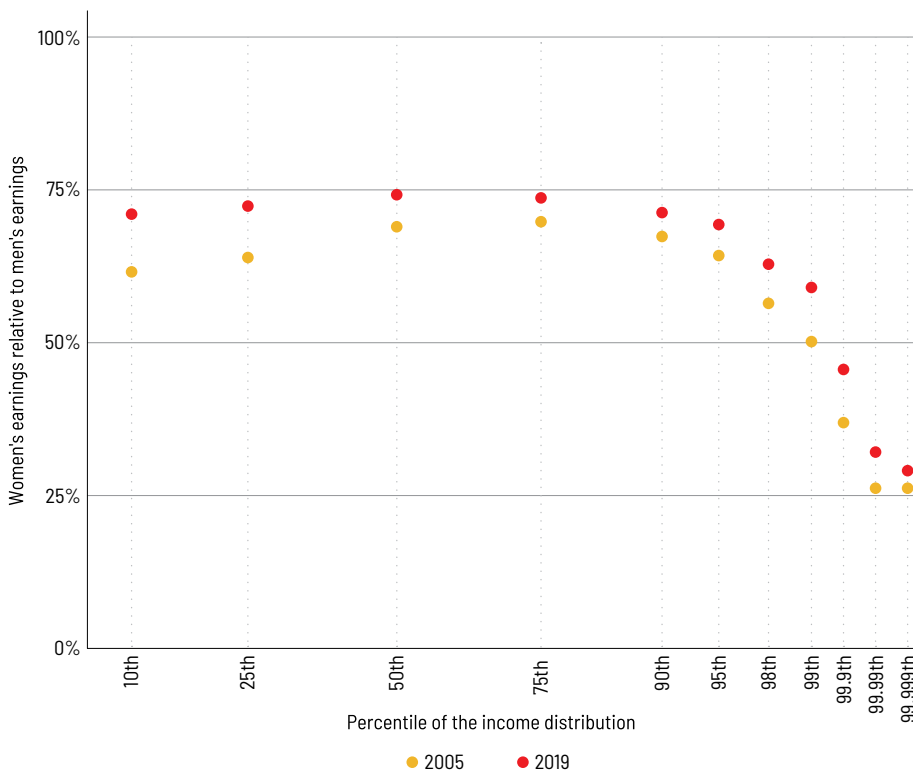
A gender gap that is not yet closed

Using annual earnings data from W-2 forms, IDDA shows where the earnings gap between men and women has closed the most—and where it remains wide.

A common way to measure the earnings gap is to compare the income distribution of men with the income distribution of women: If you line up all women in order of their earnings, how much are the women at the 10th percentile making? How much are the men making? This comparison shows that across most of the income distribution, women's earnings in 2019 were between 70 and 74 percent of men's (Figure 1). These values, called "relative earnings," saw modest growth over the decade and a half from 2005 to 2019.

At the top of the income distribution is where the earnings gap widens. In 2019, men at the 98th percentile earned $293,400 while women at the 98th percentile earned $183,500, just 63 percent of men's earnings. By the 99.9th percentile, women earned 46 percent of what men earned. While women's earnings lag men's across the income distribution, the particularly large disparity at the top suggests that obstacles to women's employment in top executive positions and board-

It is an ambitious and worthy goal to understand and address earnings gaps in the labor market. It requires data resources that are up to the task.

rooms—places where decisions impacting millions of U.S. workers are made—deserve more attention.

But relative earnings isn't the only place where women lag men. While women make up half of all earners in the IDDA data, only 21 percent of the oft-discussed "top 1 percent" in 2019 were women—and of the total earnings received by that top 1 percent, women got 18 percent. While these proportions too look better in 2019 than in 2005, it is clear women are not getting an even slice of the pie.

One way to think about where the inequality comes from is to study what happens when the pie is growing. When the fraction of total income that goes to the top 1 percent increases, what happens to the share that goes to the women in the top 1 percent? It turns out, the fraction going to women increases *less* in years when the top 1 percent as a whole sees larger increases. In other words, growing the pie—at least for top earners—does not seem to translate to growing equality of earnings.

Mapping earnings gaps

There's another intriguing dimension of variation in the gender gap: differences across states.

If the dozens and dozens of articles are any indication, Americans love ranking the 50 states. There are lists of the best states to live in and visit, states with the best education, even the states where people get the most sleep and which states are the most fun.

Perhaps state rankings intrigue us in part because the outcomes are not obvious. Which state would you guess has the highest relative earnings for women? The lowest?

Take a look at the map in Figure 2. Were you right?

The map highlights another insight from the IDDA data: The economic outlook for different demographic groups can look very different in neighboring states. Take Western neighbors Idaho and Nevada. At the median, women in Idaho earn just 64 percent of what men earn. In Nevada it's 79 percent—15 percentage points more than across the border. This snapshot focuses on relative earnings at one point of the income distribution in two states, but the broader pattern holds: At the bottom of the income distribution and at the top, states vary by 20 percentage points or more when it comes to how much women earn relative to men.

This focus on states makes sense: States are important administrative units in the U.S., with considerable latitude to set a large number of policies that impact economic opportunity and outcomes. Eligibility for benefit programs, minimum wages, occupational licensing, housing regulations, sales taxes, and many public edu-
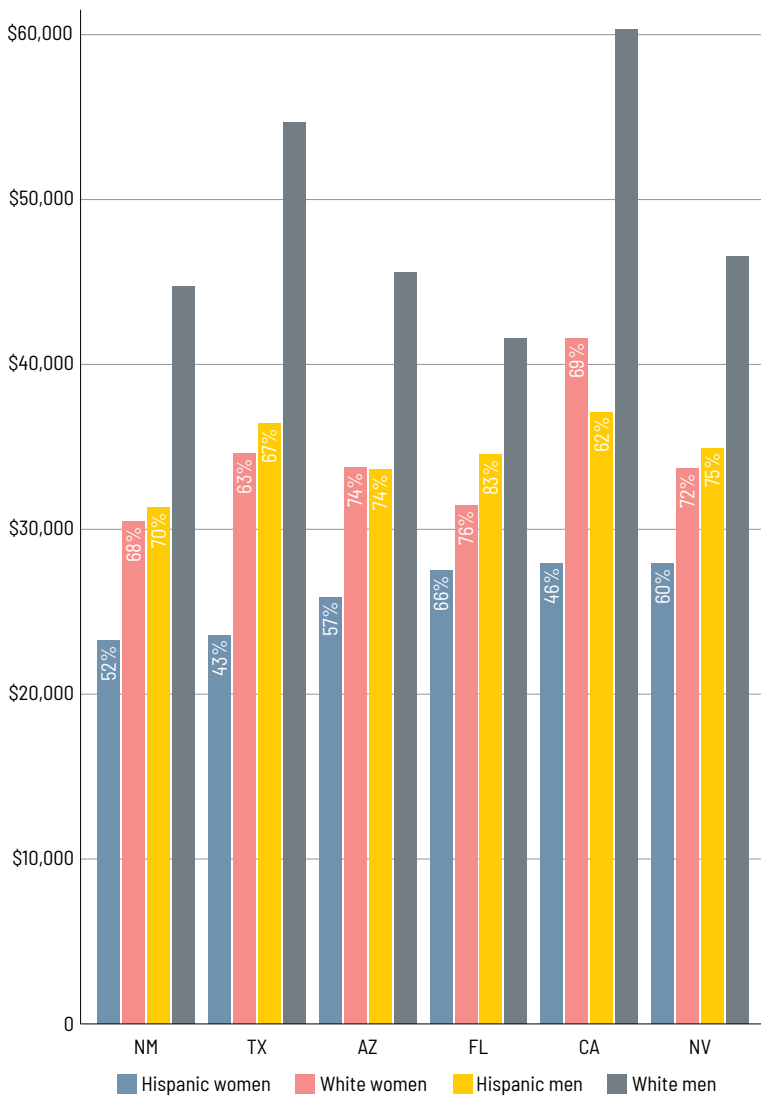

2: WOMEN'S EARNINGS RELATIVE TO MEN'S EARNINGS ACROSS THE UNITED STATES, 2019

Relative earnings is the ratio of women's earnings divided by men's earnings, expressed as a percent. These values were calculated using median earnings (50th percentile of the income distribution for women and for men).

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America.

≤ 65%   70%   75%   ≥ 80%
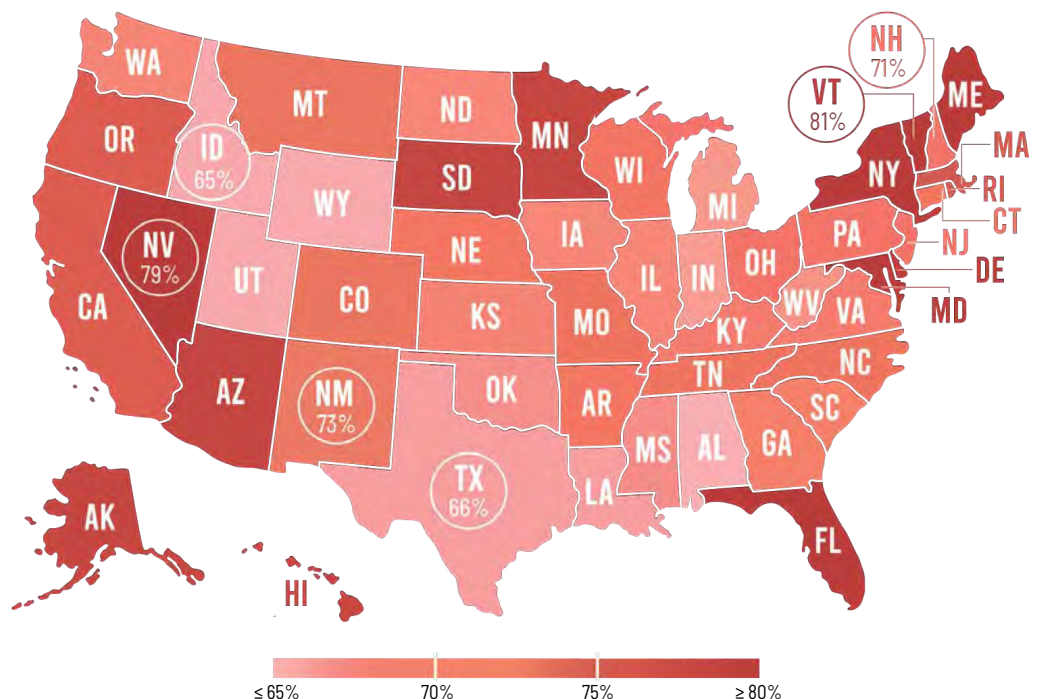
3: MEDIAN EARNINGS FOR HISPANIC WOMEN, WHITE WOMEN, HISPANIC MEN, AND WHITE MEN IN 2019

The percents on the bars indicate that group's earnings relative to the earnings of non–Hispanic White men in the same state. For example, at the median, Hispanic women in New Mexico earn 52% of what White men in New Mexico earn.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America.

cation programs are set at the state or local level, to name just a few. This policy variation provides an opportunity to investigate the impact of different policies on different groups—but doing so requires having robust income data for specific demographic groups within a state.

This is something datasets based on surveys are often unable to provide because they don't have enough respondents in some demographic groups to generate representative data across the income distribution. The result is meaningfully different estimates of earnings inequality. As one example, IDDA estimates that at the 25th percentile, Black women in Michigan earned 80 percent of what White women earned in earned in 2018. The Current Population Survey, a standard survey data source, estimates this statistic at 94 percent. The difference in these values leads to different conclusions about the magnitude of inequality.

Intersecting identities, meaningful patterns

Of course, gender is just one characteristic that influences an individual's experience in the labor market. Another dimension we know is important from decades of research on inequality is race and ethnicity. Because nearly two-thirds of women represented in the IDDA earnings data are White, the incomes of this group will drive average trends. But the states where women earn the most relative to men may or may not be the states where Black or Hispanic women are experiencing the greatest prosperity.

A simple bar chart shows how incomes by sex and race do not always move together, in absolute or relative terms. In 2019, Hispanic individuals made up more than 20 percent of the workforce in six states: Nevada, Arizona, Texas, California, Florida, and New Mexico. Figure 3 shows earnings at the median in those six states for Hispanic women, White women, Hispanic men, and White men. The median earnings of Hispanic women range from $23,600 to $27,970 in these states—not huge variation. The y-axis scale makes this range difficult to see, because it extends to almost three times the earnings of Hispanic women to accommodate the earnings of White men, which are considerably higher and show more variation.

The chart also indicates the earnings of Hispanic women, White women, and Hispanic men relative to

Why does detailed income information matter? Local social service providers care who in their community lacks access to a minimum level of resources because such knowledge is critical to their work to alleviate poverty.

Economic mobility is a central promise of the American dream. IDDA shows that movement up the income distribution from year to year varies across states and groups, affecting workers' chances to get ahead— and the stability of their earnings once they do.

those of White men in the same state. Looking at these percents, the states seem less similar to each other. In Texas, median earnings for Hispanic women was just 43 percent of the median for White men in 2019, the lowest ratio in any U.S. state. Relative earnings of Hispanic women in California was not much higher. On the other hand, median earnings for Hispanic women in Florida was 66 percent of median earnings for White men, the second highest in the country. Interestingly, White women have earnings similar to those of Hispanic men in these six states. In relative terms, Hispanic men do better in Florida; White women, in California.

Why might this information matter to more than those of us inclined to list-making? Local social service providers care who in their community has access to a minimum level of resources because such knowledge is critical to their work to alleviate poverty. These local inequalities also have direct implications for economic opportunity—where individuals can afford to live, whether they can buy a house, where they send their kids to school. Understanding what share of people lack those resources and who those people are can help providers target their efforts.

Relative earnings at this degree of granularity may also inform state lawmaking efforts to address inequalities. For instance, on January 1, a new law took effect in Minnesota that bans employers from asking for a job candidate's salary history. Advocates of the law pointed to wage inequalities along racial, ethnic, and gender lines in the state. They argued that banning the question will make it more likely that workers are paid commen-

surately with their skill, not their demographics. In the future, granular income data may help policymakers and researchers assess whether the policy had an effect.

Meeting the promise of economic mobility

Economic mobility is a central promise of the American dream. Americans have long sought upward mobility by moving to states, regions, or neighborhoods where opportunities for growth seem to abound. Rural workers have sought higher earnings in cities. Between 1940 and 1970, more than 4 million Black Americans moved from the U.S. South into industrial cities in the North and West, a movement known as "the Great Migration."

IDDA shows that movement up the income distribution from year to year does vary across states. From 2014 to 2019, the state with the least upward mobility was North Dakota, where 54 percent of individuals who started in the lowest quartile of earnings in 2014 and remained employed five years later had moved into a higher earnings quartile.

The state with the highest upward earnings mobility, meanwhile, was Utah, followed closely by its neighbors Idaho and Nevada. In Nevada, for example, 62 percent of individuals who started in the lowest earnings quartile had moved up. The 8 percentage point difference in upward mobility between North Dakota and Nevada translates to tens of thousands more workers who experienced movement up the income distribution. And that's just one five-year window. Seemingly small differences in mobility can compound over time, affecting workers' chances to get ahead—and the stability of their earnings once they do.

IDDA statistics also highlight that the role of race and sex in the labor market magnify differences in mobility. For example, about 64 percent of low-earning Asian workers in North Dakota saw mobility up from the lowest quartile, compared with 46 percent of low-earning American Indian or Alaska Native workers. And even in Nevada, just 54 percent of Black earners who started in the lowest earnings quartile in 2014 had moved into a higher quartile in 2019.

Figure 4 summarizes these comparisons, showing mobility rates across states for individuals starting in the lowest earnings quartile. Each dot represents a state. Dots that fall farther to the right highlight groups that experienced more upward mobility, while the spread of the dots indicates how much these rates

Top 5: Exploring the states

Highest median earnings for Hispanic women relative to White women
Utah
Vermont
Florida
West Virginia
Idaho

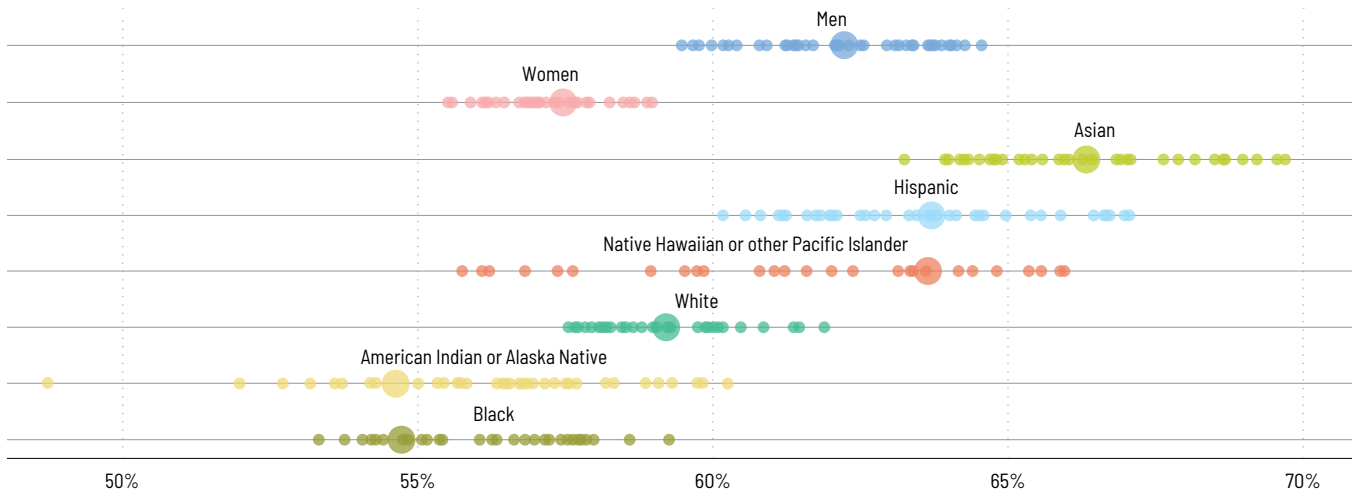**Highest median earnings for Black men relative to White men**
Hawaii
New Hampshire
South Dakota
Montana
Idaho

Highest inequality between the 10th and 90th percentiles of the income distribution
New Jersey
Virginia
Connecticut
Illinois
New York

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America, 2019 data.

This chart plots the probability that an earner in the indicated group moved up from the lowest earnings quartile (1st to 25th percentiles of the income distribution) to a higher quartile from 2014 to 2019. Higher percents indicate more economic mobility. The small dots indicate mobility rates in each of the middle 40 states, excluding the five states with the highest and five states with the lowest rates of mobility. The large dots are the mobility rates for that group in the United States as a whole. Because some groups' populations are not distributed evenly across states, the U.S. dots are not always in the middle. Rates are calculated among earners who received a W-2 in both 2014 and 2019. The race and ethnicity groups reported in IDDA are Hispanic, non-Hispanic American Indian or Alaska Native, non-Hispanic Asian, non-Hispanic Black, non-Hispanic Native Hawaiian or other Pacific Islander, and non-Hispanic White.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America.

varied across states. Hispanic and Asian earners experienced relatively high upward mobility over this recent time period, and that was true in almost all states.

Black and American Indian or Alaska Native earners saw lower rates of upward mobility than other groups. Black workers in the median state were less likely to move up in the earnings distribution than White workers in low-mobility states, for instance. And women saw less upward mobility than men.

How inclusive is income growth?

Another dimension to income inequality is the gap between those at the top and those at the bottom of the distribution. Have incomes grown by the same amount for everyone, or have some incomes grown faster than others?

Over the long term, there is little doubt. "While an awful lot has changed about America and the world since 1974, it sometimes seems that the biggest and most important change is the social fact of exploding income inequality," the journalist David Wallace-Wells wrote in the *New York Times* at the end of 2023.

A lot of that explosion happened in the 1980s and '90s. The trends in the two decades since then show both an acceleration and a deceleration—depending on what statistic you look at.

IDDA's granular data may help explain why different people have different impressions about the trajectory of incomes. We live our lives in households and local communities, not at a national median.

Between 2005 and 2018, individual earnings increased the most at the top and the bottom of the income distribution—by more than 20 percent, as the top chart in Figure 5 shows. Because the 10th percentile saw the most growth, earnings inequality between the 10th and 90th percentiles of the income distribution narrowed modestly.

But the picture looks different for household-level income. Individual earnings data in IDDA come from W-2 forms filed by employers, whereas household income data come from 1040 forms filed by individuals. The income reported on 1040 forms is summed for each address, so these values represent the resources available to individuals who share a residence.

Income growth across the distribution at the household level looks a lot more like conventional narratives about incomes in America: rapid growth at the top, near stagnation at the bottom. In fact, as the bottom chart in Figure 5 shows, income growth gets progressively larger the further up the household income distribution one falls.

According to research by Minneapolis Fed economists, this trend has long roots. "A household in the bottom 20 percent of the distribution now makes exactly the same as it was making 50 years ago, in real terms," said Minneapolis Fed Monetary Advisor Fabrizio Perri. "That is super striking. Society has evolved a lot in 50 years—it's become wealthier. But a household at the bottom makes the same."

The statistics in IDDA confirm that income disparities in America remain wide. But IDDA's granular data may help explain why different people have different impressions about the trajectory of incomes. We live our lives in households and local communities, not at a national median. Our age, sex, race, and ethnicity all play a role in the choices we face and the outcomes we experience, as do many other characteristics not captured in the Income Distributions and Dynamics in America statistics.

What IDDA does make clear is that relative incomes, income levels, and income mobility show incredible variation across places and across groups, producing a tapestry of income statistics as diverse as the country they reflect. At the end of the day, it is by seeking to collect and understand as many of these statistics as we can that we will be able to take more steps to foster prosperity and opportunity for all. ★
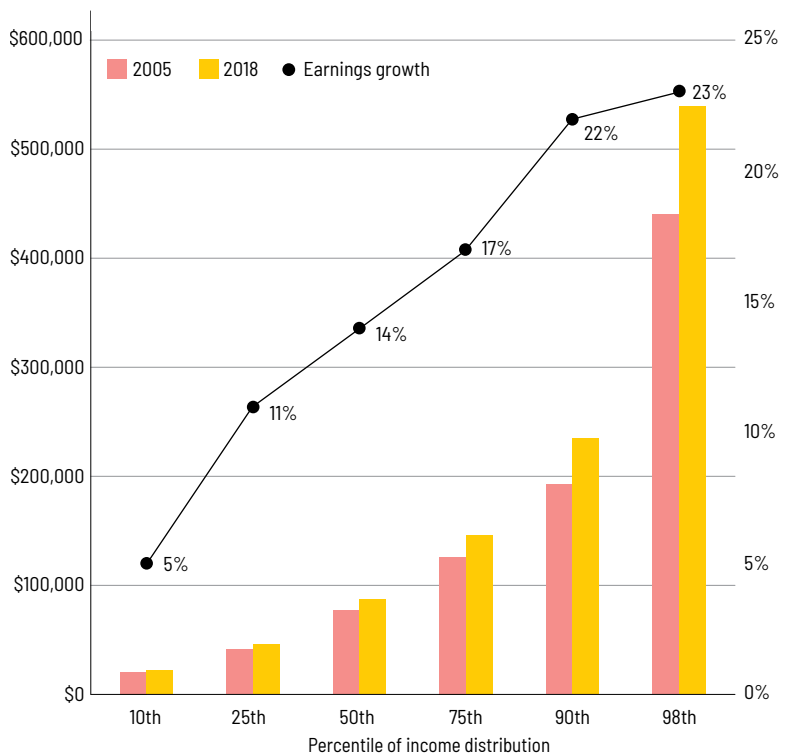
5: EARNINGS AND INCOME ACROSS THE DISTRIBUTION, 2005 AND 2018

Individual earnings (total compensation from Form W-2)
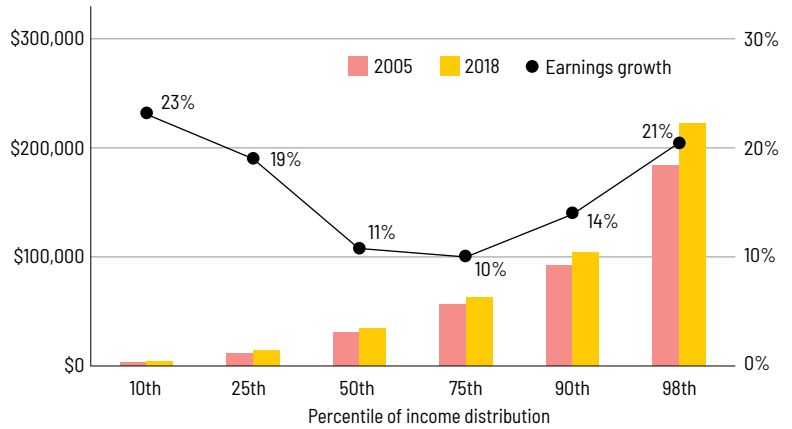
Household income (adjusted gross income from Form 1040)

The percents indicate how much income or earnings increased between 2005 and 2018 for that percentile of the income distribution. These charts end in 2018 because the COVID-era stimulus payments that started in 2020 used 2019 tax forms to determine eligibility. That caused an increase in 1040 filings, particularly among lower-income households, making the comparison of 2019 to previous years more complicated. Dollar amounts are inflation-adjusted to 2019 dollars.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America.

Flipping the Script

As he tells it, Illenin Kondo's childhood in Togo had many advantages: Relatively well-to-do parents who cared deeply about his education. Early exposure to five languages, including French and English. A love of learning—especially science—and a gift for numbers.

But in West Africa, as much as anywhere, history and institutions press against the universal desire to shape our own destinies. When Kondo was in elementary school, his family fled the country for many months amid a political crisis and military repression. When his education got back on track, he recognized he would need to leave Togo eventually, if he could.

Economist Illenin Kondo—a driving force behind IDDA—on the power of leading with data and learning from his own journey

BY JEFF HORWICH

"When institutions fail, individuals are caught between either working hard against the institution, giving in, or escaping," Kondo said. "If I can't change the institution, I need to carve a path for myself."

Even his family's resources and best efforts contended with struggling institutions. "In 10th grade I was in one of the best high schools in the country, hands down," Kondo said. "But there were still 70 or 80 of us in the classroom. I never entered a chemistry lab until I went to a college abroad."

Kondo's exam scores qualified him for a substantial college scholarship from the Togolese government. Still, institutions threatened. The scholarship was mired in bureaucracy. Kondo left for France with a plane ticket that his mother, who had not been paid in months, bought with a loan—and with the faith she could dislodge the scholarship eventually.

A year later, she did. And Kondo made it count. He completed his degree in electrical and computer engineering at one of France's premier engineering schools, a master's degree in the same at Georgia Tech, and a stint at Goldman Sachs before taking his math and programming skills

> **"I think these topics are polarizing because they speak to the idea of America. Whichever way we understand opportunity or mobility or the American dream affects how we view the data.... If you believe enough in the idea, then it's hard to deal with the data."**

to a Ph.D. in economics at the University of Minnesota. "It felt like economics had the language to ask and answer big questions I cared about around development, growth, and inequality," Kondo said.

In 2020, Kondo joined the Opportunity & Inclusive Growth Institute as a senior research economist and was immediately handed a major project: Coordinate with the U.S. Census Bureau to build and launch the massive public resource now known as Income Distributions and Dynamics in America (IDDA), to which we are devoting much of this issue.

The statistics in IDDA tell America's own story of the power of institutions, the long reach of history, and people striving to escape the patterns of the past. We talked with Kondo about what IDDA can bring to the American conversation about inequality and about his own unfolding journey through America and economics.

You say that IDDA "flips the script" on how economic research often comes together. What do you mean by that?

The normal process is that I have a working paper, it gets widely circulated and potentially picked up by a journal—and *then* there will be a public conversation about it. It's like a victory lap. And usually there is also some exclusivity around the data. The data's unique nature is leveraged first by those who put it together.

On some questions, that's good. But on some, that's a disservice. I think of it as an underprovision of public goods in economics because of how our publication process works.

With IDDA we flip the script, in my opinion, because we've chosen in our partnership with the Census Bureau to maximize access for others—to not view it as a competition between what we can milk out of the data and what others could. The project is answering our research questions, but at the same time we have produced a resource that others can use to answer even more questions alongside us.

You're a trained macroeconomist. How does it feel to put data out there in the world without having to construct an impressive, super-mathy model?

I had to be wrangled into doing it that way! My inclination by training is, Hey, you need a model, you need structure. But a model, by design, will catch some things from the data and leave some things out, and that lens is not the only lens. I've come to appreciate the breadth of dimensions we have

in IDDA, and that one need not put one model structure on it before letting the data out. It's exciting to see what we and others can do with it, all together, whether it's teachers or policymakers or people using it for their research.

Have you had any initial revelations or "aha" moments yourself while working with the data?

One aspect is that it's amazing how "fractal" inequality is. Here is what I mean by that: Because IDDA is granular, you can look at, say, earnings for Black people ages 35 to 44, or you can look at Black women in Minnesota, and so on. When you look within each one of those potential combinations of place and gender and race and age, you can see: How unequal are the earnings?

In general, something like one-third of total income goes to the top 10 percent of people. And that is relatively consistent within different subgroups, which is why I call it almost "fractal." Hispanic women in Florida, Black men in Alabama, American Indians in Oklahoma, White men in Iowa—there are some outliers, but typically there is a narrow band for how concentrated incomes are, and they are super similar.

I wasn't expecting that. This tells you that there's an order of things *within* groups that seems similar from group to group. To me, this makes more puzzling the fact that we have big differences *across* those groups.

Another thing that was striking to me arises because we can see very far into the upper tail of the distribution. Women earn less than men, so obviously when you go further up in incomes, you'll see fewer women. If I look at people with annual incomes above $200,000 or $1 million, on average I would expect the women in this group would be earning less than the men—both because there should be fewer of them *and* because their earnings are lagging behind systematically.

But the IDDA data suggest that they don't lag that much. There are fewer women at those top income levels, but those women seem to be on a more equal footing than I would have expected. This requires a little bit of something else to be happening, and I haven't figured out the math for this yet. But to me this is very interesting.

You operate in an academic sphere where it is natural to talk about income disparities and inequality of opportunity. What's your sense of how the American public views these conversations? I feel like this is a conversation that some very much want to engage in. Others are less eager.

Yes, and the data back you up. I was at a data science conference recently where researchers from Wesleyan and the University of Minnesota presented a survey about people's perceptions of COVID-related mortality—the disparate effects of the pandemic by income and by race. And the data was just staggering. It was super polarized politically. There are big differences across political groups in how aware they were of the disparate effects of COVID.

Ivy Onyeador at Northwestern has done really cool work with her co-authors on the subjective perception of racial inequality. Essentially, we systematically underestimate how big the gaps are. And when we are told that we are underestimating, the way we rationalize it is that we say, "Well, the past was bad," but we are super optimistic about today. We still want to think that today is good.

I think these topics are polarizing because they speak to the idea of America. Whichever way we understand opportunity or mobility or the American dream affects ultimately how we view the data in time, in space, across generations. If you believe enough in the idea, then it's hard to deal with the data.

I think that we all want to believe in the idea. But the data is the data. What would be good is for each cluster, if you will—Republican and Democrat, former manufacturing town and booming Silicon Valley town, immigrant and nonimmigrant—to wrestle with what it means when these numbers look this way.

You shared your thoughts with the *Star Tribune* when former Institute advisor Bill Spriggs passed away last year. Tell me about your interactions with him and what he represented to you.

I identify as a Black economist, but I'm careful not to identify as an African American economist out of respect for people like Bill Spriggs and others who came before him. There's work

I helped organize the National Economic Association's "Freedom and Justice" conference last summer where we were hoping he would come, but he passed away. And so we asked [University of Minnesota economist] Samuel Myers to give a lecture in his honor. Sam pointed out, of course, how much of Bill's work was really influential. For example, Bill thought about things as simple as how, underneath test scores, we put the heavier weight on components of the test where White people are doing better, systematically making Black people look weak on that test.

But Sam Myers also pointed out how Bill's Ph.D. dissertation—which was on racial wealth disparities—has never been published. This is a Black economist who was doing research on racial disparities at a top university, under a top advisor—and his thesis has never been published. The average researcher who's going to jump into this topic today is probably not going to see what this man wrote about it.

Bill was fighting to make sure that the stories we tell as economists really work for all and are reflective of as many experiences as possible. In particular, when it comes to America, understanding that race comes with a lot and that we need to grapple with that. It was a joy to know him briefly. It was inspiring. I keep his open letter after George Floyd ["Is now a teachable moment for economists?"] near my desk, and I read it all the time.

How does your own global journey inform the way you look at inequality in the U.S.?

I think my journey has helped me appreciate the nuance around labels—in my case, that "Black in America," "Black in France," and "Black in Togo" mean different things. When you see a label like "Black" in economic research, people can be quick to take that as a shorthand. But my experience helps me understand that these labels are encoding more history

"We've chosen in our partnership with the Census Bureau to maximize access for others–to not view it as a competition between what we can milk out of the data and what others could."

that he and others have done institutionally to create space for minority communities in economics that have not traditionally been centered there, and he did it consistently.

Getting the chance to know him and to hear his voice—especially when George Floyd was murdered and everybody was interested in his perspective on how we as economists approach the question of race—I view it as a privilege. I hold him and others of his generation in a place of both esteem and honor. But I also acknowledge that for all the work, and all that he means, I think he was marginalized by the economics community.

and institutions than you think. We need to think hard about what's behind the label, and what is really causing or explaining what we observe.

I have learned what it means to be Black as a journey across these countries. I wasn't really conscious of Blackness as a predictor where I grew up. Actually, it turns out there is an advantage to being non-Black even on the [African] continent, but it wasn't necessarily the biggest marker of differences as I grew up.

Then I went to France and saw the experience of other Black immigrants in France, and how France itself wrestles

"'Black in America,' 'Black in France,' and 'Black in Togo' mean different things.... I have learned what it means to be Black as a journey across these countries."

with the notion of race. I had to understand that history, and what it means to have a country that had to rebuild from World War II—to have a generation of people come from all over the French "empire" to help rebuild the country—only to be considered second-class citizens. These kids know nothing but France, but they are still considered a little foreign.

And what was my place in that? In France I went to one of the best engineering schools. There were a handful of us that were Black, but most of us had attended high school in Africa. And to me that was glaring. How come we were so close to a densely populated, working-class area in France, but the Black and Brown kids there could never dream of going to this amazing engineering school that was nearby?

And how about your experience being Black in America?

Coming to America was a whole other experience. When you speak to African Americans, they will explain to you how understanding the economic outcomes for Black people requires understanding the story of enslavement. If you go to a top econ Ph.D. program today, they will do the heaviest math possible. But they will probably not spend two hours understanding what the history of slavery means.

These economists are going to be writing a lot of papers talking about economic disparities, and race is always going to be one of them. The math is a requirement to get into that academic world. But understanding something as simple as an institution of enslavement is not.

I am still on that journey of understanding what it means to be Black in America. Now I have a son who, though he's very smart, I have had to change schools for him twice—because of his color, that seems to be affecting how he's experiencing things. As a father, I have African American kids. And I'm seeing the experiences they have, and things I have to worry about with them that I realize some of my colleagues and friends don't have to worry about.

For me, it means when my father-in-law needed something the other night at 11:00 p.m. here in the Twin Cities, my wife is like, "Do you really need to be out driving?" It's something she might not be worried about if she didn't worry about what an interaction between me and a police officer would be like.

I'm not suggesting there are not other dimensions and layers we all carry. But race comes with this weight of, for better or worse, the knowledge of how you appear in the eyes of others, the knowledge of what it means in the data, and the knowledge of your own authentic experience. It's harder for me when I think about my kids than for myself, because in a way I feel like I grew up not experiencing those things very

young. But when your kid experiences those things super young, that hurts more.

When I say I don't identify as African American, it's a way of acknowledging that I have privileges due to my journey of immigration that others don't. It would be really disrespectful to those who have taken the time to study the Black experience in America. At the same time, I need to take responsibility for what sometimes my presence in some rooms means and doesn't mean.

On that point, do you have a particular example in mind?

This past week we had some high schoolers visit the Minneapolis Fed. Most of them were Black and Brown kids from a local high school. Talking to them, I mentioned how I was a little bit of a nerd, and that I love computer programming. And there's this very tall 16- or 17-year-old, 6-foot-2, with [dread]locks. He comes up to me, says his name, shakes my hand, and he's like, "Yeah, I do a little bit of programming. Just basic things. I taught myself Python, C, C++."

I'm looking at this kid, he's doing all those things, and he calls it "basic." What I liked is that because I put myself out there saying, "Actually, I'm a little bit of a nerd," he came to me in this humble way and we could chat about it. I'm sure he talks to other peers about programming, but from my personal experience, I knew it mattered that he felt we could chat. I told him about my friends who work for Google and other programmers I know, and I told him about Morehouse and Georgia Tech—how they train a lot of Black engineers and coders.

It's actually the same way I feel about my daughter—the same way we want to empower daughters to be free from gender norms. When the data is so glaring in terms of a divide, representation matters. Being in the room matters.

How does "being in the room" matter as an economist?

We're in a field that often talks about pipeline issues. The common excuse we'll hear for not having enough women or enough Blacks in a department is, "Oh, we didn't have enough of a good pool of applicants." So, when I show up, I'm showing up as either one additional statistical point to reinforce your stereotypes, whether valid or not—or, hopefully, I will dispel the myth. That's a burden that I think a lot of underrepresented groups face.

There's this expression that nobody wants to be a token. What that means is being conscious that my presence is authentic to who I am, the quality of the work I do—but that this does not absolve our institutions from the work they have to do. I hope that wherever I am, that it's creating more opportunities for people like me, not fewer.

Kondo in Paris with classmates in 2002.

I can be lovingly candid with my alma mater, the econ department at the University of Minnesota, just as I'm chatting with you about it. Yes, the small number of Black Ph.D. graduates in recent years have had outstanding job placements. But statistically, if the average Ph.D. cohort is about 20 students each year, over 10 years that's 200 students. How come we regularly see *no* Black graduates from many top Ph.D. programs?

That's the sense in which successful examples cannot be absolving. I think hard about that. For me, I think that means mentoring. That means taking on that extra service work. That means representation. Not because it builds my research—that time I spent with the high schoolers, I could have spent working on a research paper. But that's the burden, in a way, of being in a world where we still have these glaring divides.

You have devoted a huge portion of your recent professional life to making IDDA happen. What are you excited to work on now that IDDA has launched? I noticed you've got a lot of work in progress related to China.

When I came to the Bank, I started working on racial wealth disparities, and the more I have looked into it, the more interested I have become. We talk a lot about incomes, and if people earn less, all else equal, they're going to be less wealthy. But I've been thinking hard about what else is happening to make the ways we accumulate wealth very different. Interestingly, the research tells us that a big part of why some people are more wealthy is heterogeneous returns to investments. I think maybe there's something racialized about it that we need to better understand.

And yes, I am working on China quite a bit. There's been a lot of recent progress on U.S. labor market power, especially relating it to the minimum wage, but I think trade reforms are a unique place to also think about that. In other research I'm thinking about domestic outsourcing, and I have dabbled a little bit into Chinese infrastructure and institutions. Maybe that's the engineer side of me that likes networks—I need to finish a paper about China and how politicians there shape the highway system. I can't wait to get back to that. ★

> "If you go to a top econ Ph.D. program today, they will do the heaviest math possible. But they will probably not spend two hours understanding what the history of slavery means."

World-class research can be lengthy and complex. Here, we present key findings, methods, and policy implications from several studies by Opportunity & Inclusive Growth Institute scholars and their colleagues. These examples represent a fraction of the Institute's growing body of research. For our full library, visit minneapolisfed. org/institute/publications/ working-papers.

The geographic divide in Native incomes and earnings

Data from Income Distributions and Dynamics in America highlight recent divergence between incomes in tribal and non-tribal areas

BY NATALIE GUBBAY AND H TROSTLE

Over the past four decades, tribal economies have experienced remarkable economic growth. The exercise of sovereignty, empowered by the 1975 Indian Self-Determination and Education Assistance Act, provided new opportunities for employment in Native communities, harnessing the expertise of tribal leaders to align economic development with the goals and needs of the local population. Tribes developed new revenue streams from gaming operations, federal contracting, and natural resource extraction. For example, research from the Center for Indian Country Development shows that federal contracting revenue earned by tribes grew from about $50,000 in 1988 to $4.8 billion in 2021.

Despite these profound gains, income disparities persist between Native and non-Native individuals. To chart a path toward greater prosperity, policymakers and tribal leaders need reliable information on diverse groups of Native earners. How have the highest-income individuals fared, for instance, compared with lower earners? Has this expanded opportunity been unique to those living in tribal areas, or shared among Native populations throughout the U.S.?

Yet detailed data has been difficult to access, in part because Native communities are not well represented in public data sources. Researchers and policymakers have tended to rely on data from the American Community Survey (ACS), which has key limitations. The ACS can only approximate whether respondents live in a tribal area, lumping together other individuals in adjacent towns and communities. While the ACS is larger than most alternatives, it is still difficult to zoom in on the experience of small subgroups—workers

ILLUSTRATIONS BY DADU SHIN

aged 25–34, for instance, or high-income Native women. And it is not possible with this data to follow the same individuals over time in order to track how their incomes change.

New data from Income Distributions and Dynamics in America (IDDA) help fill this gap, providing over 70,000 summary statistics related to income levels, income mobility, and migration for individuals and households living in Native areas as defined by the Census Bureau. Because IDDA is built from all tax returns filed with the IRS from 1998 to 2019, we can use its statistics to zero in on different parts of the income distribution in Native areas and to follow individual filers over time.

Using IDDA to take a closer look at income growth in Native areas uncov-ers several concerning trends. Follow-ing a period of economic growth, since the 2010s, both Native and non-Native incomes in tribal areas have fallen rel-ative to the U.S. economy. This offers researchers and policymakers a starting point to analyze how economic policies and circumstances have affected Native communities over the last 10-plus years.

Two decades and three phases of Native income growth

According to the IDDA statistics, in 1998, the median income among Native people living in Native areas was $46,626—64 percent of the median income in the over-all U.S. population. The top chart in Figure 1 (on the following page) shows how this ratio, called "relative income," evolved over the following two decades for Native and non-Native people living in tribal areas. The chart also plots median relative income for non-Hispanic American Indi-an or Alaska Native (AIAN) people in the U.S., including those living both inside and outside of tribal areas. Together, these comparisons help break apart trends that are affecting Native people from those that are affecting tribal lands.

The bottom chart in Figure 1 repro-duces the same three comparisons at the 90th percentile of the income distribu-tion. Income is measured using house-hold-level adjusted gross income, which totals wage earnings, self-employment income, and other nonwage income reported on IRS Form 1040 for all indi-viduals residing at the same address.

Relative income at the 50th percentile

Income relative to U.S. population

Native people in Native areas (any ethnicity)
Non-Native people in Native areas (any ethnicity)
Non-Hispanic American Indian or Alaska Native people in the U.S.
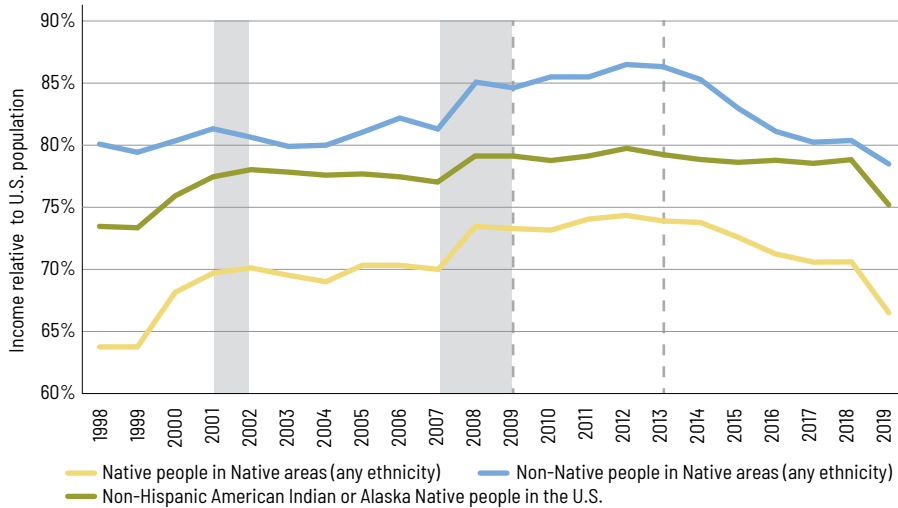
Relative income at the 90th percentile
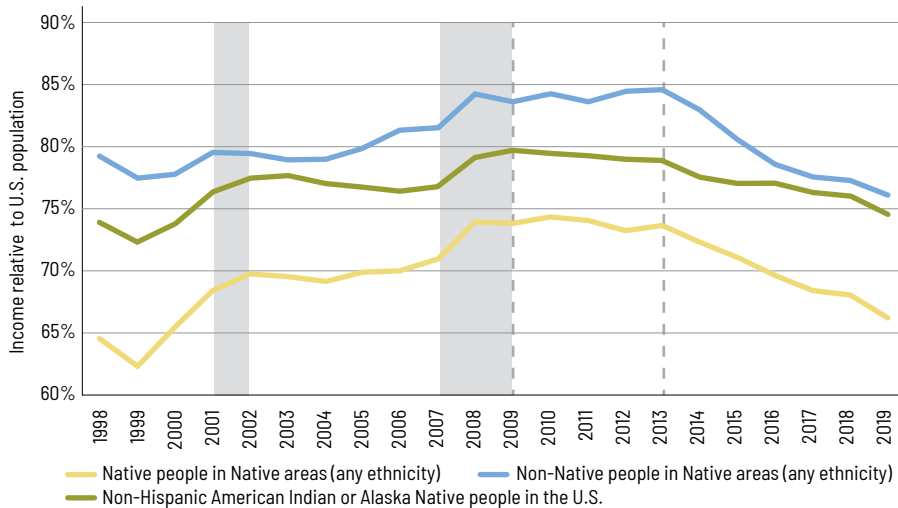
Income relative to U.S. population

Native people in Native areas (any ethnicity)
Non-Native people in Native areas (any ethnicity)
Non-Hispanic American Indian or Alaska Native people in the U.S.

Gray bars indicate recessions.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America.

Household-level income measures should be interpreted as the total household resources available for individuals.

Both charts at left follow an inverted-U shape: Between 1998 and 2009, incomes for all three groups—Native people in tribal areas, non-Native people in tribal areas, and all AIAN individuals—converged toward the U.S. population. Native people living in tribal areas experienced the largest initial disparity, but they also showed the strongest relative income growth, closing the income gap by almost 10 percentage points at the median and at the 90th percentile.

The years after 2009 paint a very different picture. From 2009 to 2013, relative incomes leveled off for all three groups. Since 2013, relative incomes have fallen for both Native and non-Native individuals living in tribal areas. Median relative income for Native people in Native areas fell by 4 percentage points from 2013 to 2018. High-income Native individuals saw a slightly larger decline: At the 90th percentile, relative incomes for Native people living in Native areas fell by 6 percentage points. Among non-Native individuals, relative incomes decreased by 6 percentage points at the median and 7 percentage points at the 90th percentile.

Importantly, this decline relative to the overall U.S. population occurred in the context of a growing economy. Over that same period from 2013 to 2018, median household income in the U.S. population increased from $78,181 to $87,812, just over 12 percent. Median household income among Native people in Native areas increased too—but only by 7 percent, from $57,768 to $61,575. For non-Native people in Native areas, median income increased just 4 percent. Because income growth was higher in the overall U.S. population, relative income among Native people declined.

The charts in Figure 1 also highlight that the relative incomes of AIAN people in the U.S. did not fall as strikingly after 2013—especially at the median, they stayed almost flat. While all three lines follow similar trajectories between 1998 and 2013, they differ after that. These

patterns suggest that the prosperity of the overall U.S. economy, particularly in the latter half of the recovery from the Great Recession, was not shared evenly with individuals living in tribal areas, highlighting the important role of place in addition to identity.

Another consequence of these patterns is that income disparities within Native areas have persisted. Median Native incomes have hovered around 87 percent of median non-Native incomes on tribal lands since 2001, through both sides of the inverted-Us in the charts. The persistence of that gap highlights privileges that people who don't identify as Native might experience in very local economic landscapes. It brings to the forefront questions such as, What jobs do non-Native people hold in tribal areas? If these two populations—non-Native and Native people in tribal areas—were grouped together, that would hide these layered dynamics.

Responding to labor market churn

The charts in Figure 1 show that relative incomes in tribal areas evolved in three phases: convergence toward the U.S. population, a period of little change, and divergence. These patterns are clear, but they are not intuitive. Relative incomes grew slightly during both the

2001 and 2008 recessions, a pattern that might seem surprising if, for example, lower-paying jobs are more impacted by recessions. In the period from 2009 to 2013, relative incomes were flat, even though research has documented large disruptions to tribal economies over this period. In fact, the IDDA statistics show individual earnings—that is, wages from formal employment reported on W-2 tax forms—fell for Native workers in tribal areas beginning in 2010. In that year alone, median earnings among Native men in tribal areas declined by 5 percentage points relative to all men in the U.S. population. How did tribal communities offset these impacts so that the relative income gap stayed flat during this four-year period?

We can look more closely at this puzzle by examining movement out of wage employment. The longitudinal dimension of IDDA shows the likelihood that an individual who starts in a particular earn-

ings quartile does not receive a W-2 the following year. This is different from looking at overall employment or labor force participation in tribal areas, because it zeroes in on the flow of individuals who receive earnings from an employer in one year, then shift into nonemployment or self-employment the next.

The charts in Figure 2 (on the following page) plot movement out of wage employment for Native and non-Native workers in tribal areas compared with the range of "exit rates" across U.S. states. Workers in the lowest earnings quartile (top panel) are more likely than high earners (bottom panel) to move out of wage employment from year to year. But at both the bottom and top of the income distribution, Native and non-Native earners in tribal areas tend to move out of wage employment more often than workers with comparable earnings levels across U.S. states. For example, from 2005 to 2006, around 25 percent of low-earning Native workers in tribal areas exited the W-2 sample, compared with 18 percent of low earners in the median state.

As the Great Recession hit, movement out of wage employment increased for low earners inside and outside of tribal areas. However, this increase was more persistent in tribal areas than in the overall population. Exit rates declined slowly in U.S. states beginning in 2009, ultimately reaching their pre-recession levels. But in tribal areas, movement out of the W-2 sample rose again in 2012 and 2013, and it remained elevated in 2018.

The employment volatility experienced in tribal areas from 2009 to 2013 is even more distinct for high earners. Across U.S. states, one-year exit rates from the top earnings quartile were low, ranging from 1 to 3 percent, and flat. In

The fall in relative income in tribal areas occurred in a period of overall economic growth—prosperity that was not shared evenly with tribal communities.

What is a Native area? How is Native identity defined in IDDA?

The Native areas geography in IDDA includes all tribal areas defined by the Census Bureau as well as Native Hawaiian trust lands, delineated as of 2017. These include federally and state-recognized Indian reservations and Native statistical areas. Although they are an imperfect measure of the boundaries of tribal lands, the areas defined under the U.S. Census Bureau's "tribal areas" geography are nonetheless one of the best national data sources. The Census Bureau regularly solicits corrections to the boundaries from tribal governments. Native people, however, have many ways of defining what is "Indian Country."

Defining Native identity is complex. IDDA uses self-reported race and ethnicity information from the American Community Survey and decennial census, reported to the Census Bureau. These data are not verified by tribal governments. We use a broad definition of Native: We include anyone who reported one of their racial identities as American Indian, Alaska Native, Native Hawaiian, or other Pacific Islander. This includes Hispanic and non-Hispanic individuals.

2: PROBABILITY OF MOVING OUT OF WAGE EMPLOYMENT

Earnings in initial year were in the bottom 25 percent of the distribution
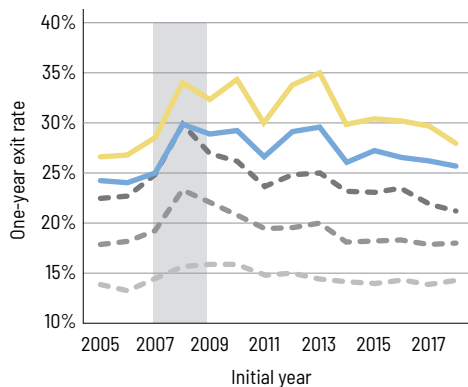
Earnings in initial year were in the top 25 percent of the distribution
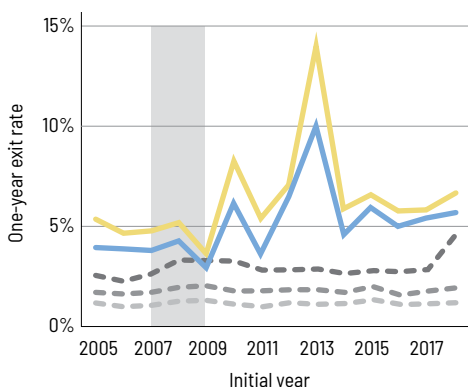
— Native people in Native areas (any ethnicity)
— Non-Native people in Native areas (any ethnicity)
-- Maximum exit rate across states
-- Median exit rate across states
-- Minimum exit rate across states

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. Dashed lines show the minimum, median, and maximum exit rate across U.S. states and the District of Columbia. Gray bars indicate recessions.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America.

contrast, exit rates among high earners in tribal areas increased from less than 5 percent in 2009 to about 10 percent in 2013 (and higher for Native individuals). The data show a churn in the tribal labor market that contrasts with the steadiness of relative household incomes from 2009 to 2013.

Understanding these patterns requires a recognition of how Native cultures and tribal homelands are unique. Research from sociologists and anthropologists highlight how Native cultures can be understood through individuals' decisions not to participate in the wage economy, leading researchers to an intentional focus on "subsistence economies." A study of Alaska Native peoples by Lucas Trout, Lisa Wexler, and Joshua Moses determined that young people feel disconnected from their culture by participating in a wage economy, "and in many cases, [they] consider oneself 'whitened' or 'domesticated' by the work." Subsistence economies are a recognized segment of tribal lands and AIAN cultures. A separate ethnographic study published in *Social Service Review* described how AIAN households that were "living off the land" did so not only for cultural reasons, but also to "offset the economic strain of purchasing food."

The fact that individuals living in tribal areas moved out of formal employment at such high rates could reflect the strength of subsistence alternatives, especially in times of uncertainty. It could also indicate shifts into self-employment and entrepreneurship. Analysis of a subsample of the IRS records suggests AIAN individuals are more likely than the overall population to live in a household where at least one earner is listed on a Form 1099-MISC for miscellaneous information (29 percent of AIAN individuals versus 20 percent in the overall population in 2012). The high number of 1099s can reflect self-employment or contractor income. It can also be a product of how some tribes provide per capita payments to

tribal members—a payment of casino revenues on a per capita basis. Entrepreneurship is another important component of tribal economies that is shaped by Indigenous worldviews.

The disparity between tribal lands and non-tribal lands needs more research

Although incomes in Native areas increased following the Great Recession, they fell relative to the incomes in the broader U.S. economy. The divergence between incomes in Native areas and overall U.S. incomes appears broad-based and structural. There are many potential explanations for this. Long-term infrastructure projects from the American Recovery and Reinvestment Act of 2009 may have started to see results in non-tribal communities in the early 2010s. However, infrastructure projects take longer to complete on tribal lands. For instance, St. Regis Mohawk Tribe used recovery funding to build Internet infrastructure, but the project was not completed until 2015. It could also be that opportunities for earning nonwage income have shifted in recent years.

Whatever the explanation, the fact remains that tribal lands are being left behind. The IDDA resource and statistics are available to help researchers tease out the roots of this rising inequality. ★

The prosperity of high-earning foreign-born workers

At the top of the income distribution, earnings of foreign-born workers have increased more than earnings of U.S-born workers

BY BRANDON HAWKINS

the United States has famously been called a nation of immigrants. But despite the integral role immigrants have played in shaping the country through its history, their effect on the economy remains contested. Some people believe that immigrants fill low-paying jobs that U.S.-born workers do not want, while others claim that immigrants are close substitutes for U.S.-born workers and thus depress wages.

These and other similar narratives tend to focus on workers at the lower end of the income distribution. But immigrant workers hold a range of low- and high-paying jobs, and economics research has documented the important contributions of high-earning immigrant workers to the U.S. economy. These workers support a healthy economy by creating jobs, increasing GDP per capita, and strengthening the tax base, which bolsters social safety net programs such as Social Security.

Given these contributions, it seems important to ask whether high-earning foreign-born workers have flourished in recent years. And, to have a meaningful point of comparison, how have high-earning foreign-born workers fared relative to U.S.-born workers? For this article, foreign-born workers are defined as workers who were

1: SHARE OF WORKERS WHO ARE FOREIGN-BORN
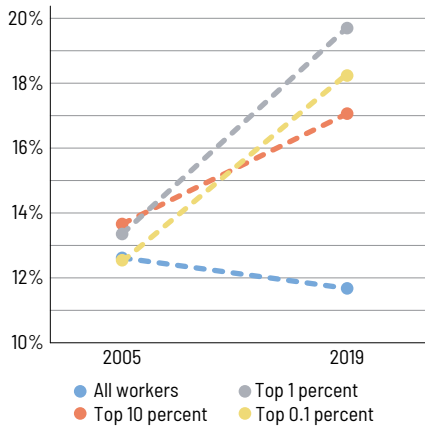
Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America.

born outside of the U.S. to parents who were not U.S. citizens. U.S.-born workers are workers who are not foreign-born.

Statistics from the Income Distributions and Dynamics in America (IDDA) resource can shed light on these questions. This dataset contains summary statistics describing income levels and changes for a variety of demographic groups at the national and state levels. These data capture everyone who worked as an employee of an organization and received a W-2 form. These data from the IRS are then linked to demographic data from the Census Bureau. Workers without a Social Security number (SSN) are not included in the data, because linking IRS tax with Census Bureau demographic data requires an SSN.

Increased prosperity among foreign-born workers

Since 2005, foreign-born workers have increased their presence among the country's top earners. This occurred over a time period in which the share of all

workers who are foreign-born actually *declined* slightly, according to the data in IDDA (Figure 1). At the same time, the share of workers with incomes above the 99th and 99.9th percentiles who are foreign-born increased nearly 50 percent.

The increase in the share of top earners who are foreign-born is a result of the fast income growth these workers have experienced. Figure 2 shows that the earnings of foreign-born workers at the top of the income distribution have been rising significantly faster than the earnings of their U.S.-born counterparts. As a result, by 2019, the top earnings of foreign-born workers far exceeded those of U.S.-born workers. For instance, in 2005, foreign-born and U.S.-born workers at the 99th percentile earned similar amounts, about $240,000. By 2019, the earnings of U.S.-born workers had increased 19 percent while the earnings of foreign-born workers had increased a whopping 55 percent, meaning foreign-born workers were earning about $100,000 more a year.

Examining the path to prosperity

How can the IDDA data help us understand the prospering of high-earning foreign-born workers since 2005? One way is to look at variation across U.S. states to see where high-earning foreign-born workers made the biggest gains. Were gains evenly distributed across the states? And if not, are there any characteristics that seem to be correlated with the states that saw larger and smaller gains in the share of top-earning foreign-born workers? Finding such patterns may help to identify what is driving the trend.

Interestingly, the states that already had large shares of high-earning foreign-born workers in 2005 are where the shares increased the most (Figure 3). For example, Figure 3 shows that in 2005, 16.6 percent of New Jersey workers with incomes above the 98th percentile were foreign-born, the fourth highest share in the country. By 2019, this share had increased 6.8 percentage points, to 23.4 percent. In contrast, in Oklahoma, only 6 percent of workers at the 98th percentile were foreign-born in 2005, and this

2: EARNINGS OF TOP-EARNING FOREIGN-BORN AND U.S.-BORN WORKERS, 2005–2019
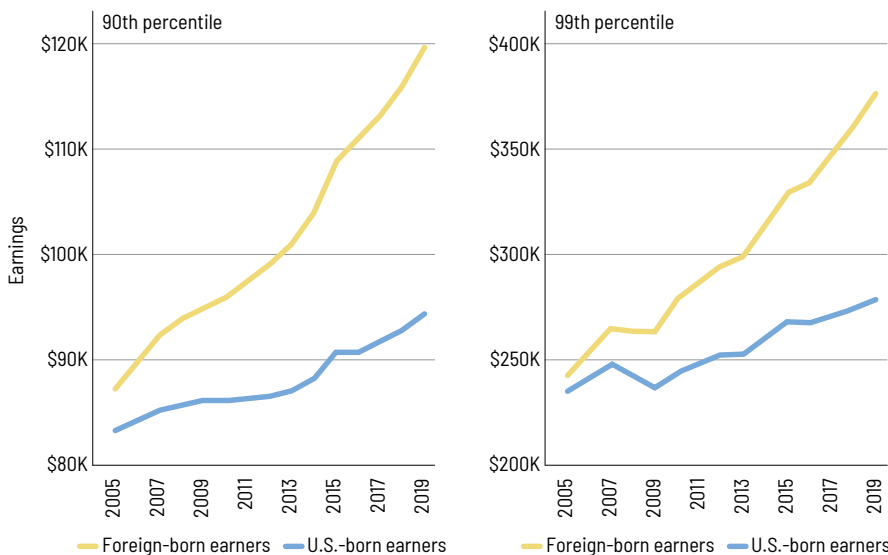
All values are inflation-adjusted so they represent an individual's purchasing power in 2012.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America.

share had inched up by only 1 percentage point by 2019.

One hypothesis for this trend might be that states which saw larger increases to the share of foreign-born workers at the top are those states that saw larger increases to their overall population of foreign-born workers, making the finding simply mechanical: Increase the total, increase the share at the top. However, the data show this is not the case. In New Jersey, for instance, the total population of foreign-born earners declined slightly over this time period, from 21 to 20 percent.

It is evident that foreign-born workers made larger inroads into top income bins in states where foreign-born labor was already a big presence among top earners. What could explain this trend?

3: CHANGE IN SHARE OF HIGH-EARNING FOREIGN-BORN WORKERS BY STATE, 98TH PERCENTILE
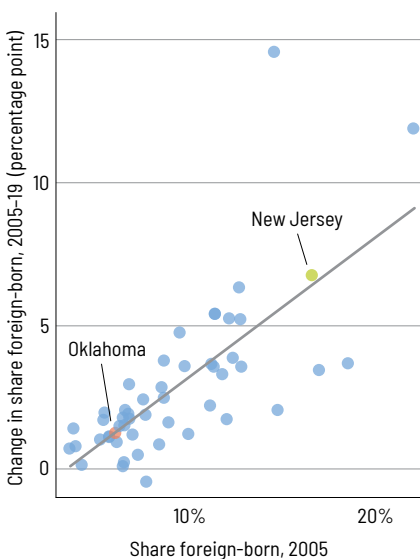
The x-axis plots the share of workers with earnings above the 98th percentile of the earnings distribution in 2005 who were foreign-born. The y-axis shows how much that share increased between 2005 and 2019. The upward-sloping line indicates that states that had larger shares of foreign-born earners at the top in 2005 are those that saw the largest gains.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America.

Not only are foreign-born workers disproportionately represented among the country's top earners, their incomes are also somewhat more persistent than those of U.S.-born workers.

Perhaps states with the highest shares of high-earning foreign-born workers are home to high-earning industries in which foreign-born workers are disproportionately represented, like science and engineering. Or maybe once immigrants reach the highest earnings bins, they are likely to give a helping hand to ensure that the next cohort of immigrants thrives in the labor market. Future research leveraging the Income Distributions and Dynamics in America data can hopefully provide a fuller understanding of what is driving this trend.

Not only are foreign-born workers disproportionately represented among the country's top earners, their incomes are also somewhat more persistent than those of U.S.-born workers: Foreign-born workers are more likely than U.S.-born workers to continue earning high incomes in future years. Among foreign-born workers who earned incomes above the 90th percentile in 2014, 74 percent of them continued to earn incomes above the 90th percentile in 2019. This outcome was 68 percent for U.S.-born workers, 6 percentage points lower. This may not seem huge, but it is a large difference in the context of mobility rates for other groups. The rate of mobility out of the top 10 percent for White and Black earners differs by 4 percentage points, for instance, while the difference for men and women is 2 percentage points.

This pattern suggests that once foreign-born workers reach the highest rungs of the income ladder, their incomes are somewhat more secure than the incomes of U.S.-born workers. Thus, once foreign-born workers prosper, they are more likely to continue to prosper. Previous research found that the share of women among top earners increased once women became less likely to drop out of the top percentiles. The higher level of income security experienced by foreign-born workers is thus likely one reason why the share of high earners who are foreign-born increased between 2005 and 2019.

Opportunities to move beyond descriptive analysis

The statistics in IDDA show that high-earning foreign-born workers flourished between 2005 and 2019. Additional research, potentially leveraging the IDDA data, is now needed to understand what has driven this prosperity. Is it connected to the changing composition of the immigrant population? Are foreign-born workers aging into prime-working ages while U.S.-born workers are aging out?

Answering these and similar questions will illuminate the mechanisms that have enabled the relative prospering of high-earning foreign-born workers, which may in turn help researchers and policymakers think through policies that support continued prosperity for all. ★
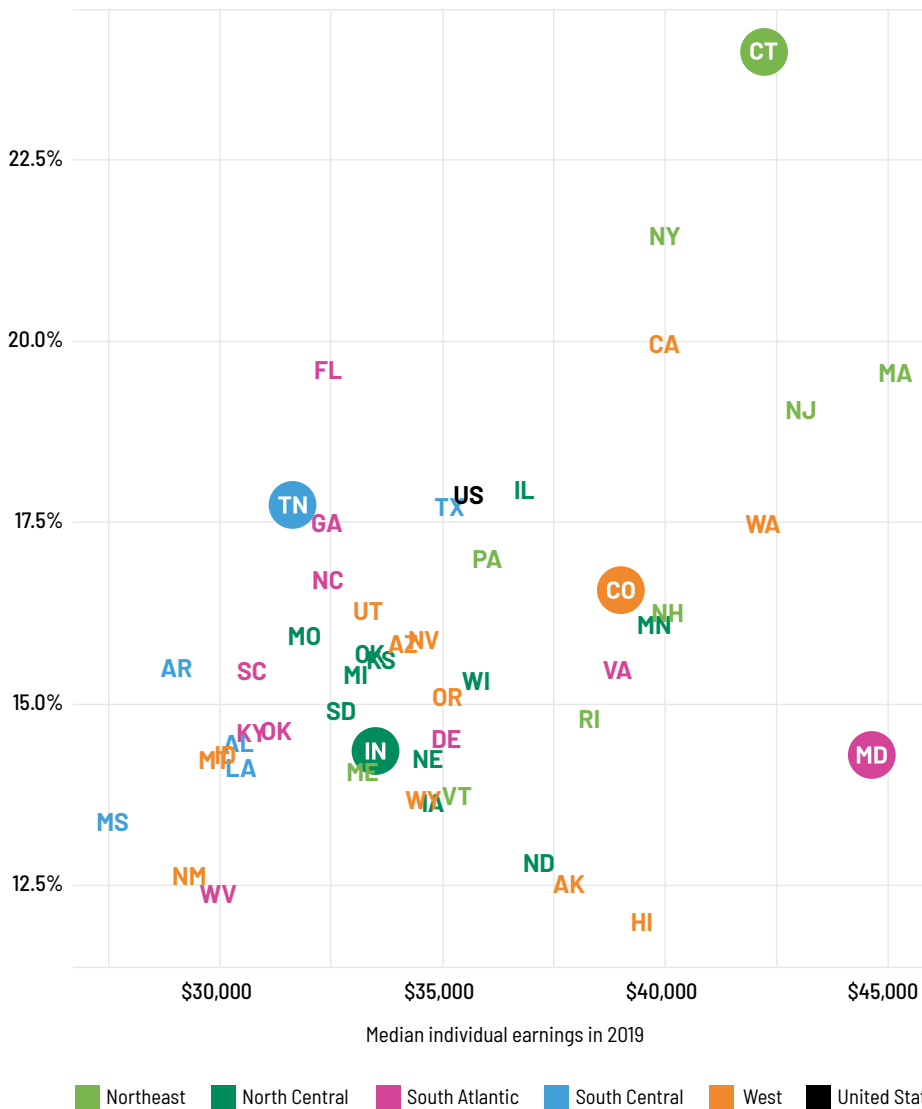
TAKEAWAYS ↗↗

· Share of high-earning workers who are foreign-born increased substantially between 2005 and 2019

· Incomes of high-earning foreign-born workers have grown faster than those of U.S.-born workers

· High-earning foreign-born workers are more likely to stay at top of income distribution over time than high-earning U.S.-born workers

THE INCOME/EQUALITY TRADE-OFF: ARE RICHER STATES ALSO MORE UNEQUAL?

One way to think about income inequality is to look at how income is concentrated at the top: Just how much of total income do the highest earners receive? In the United States, the top 2 percent of individual earners received almost 18 percent of total income in 2019. But national averages obscure large differences in how income is distributed within the 50 states.

Share of earnings received by top 2 percent in 2019 (concentration of income)

Median individual earnings in 2019

Northeast · North Central · South Atlantic · South Central · West · United States

$ Median individual earnings	⊙ Concentration of income	↗ Income mobility from third to top quartile, 2014–2019	
$35,610	17.9%	20.9%	United States
$42,240	24.0%	20.3%	Connecticut
$31,580	17.7%	21.5%	Tennessee
$39,040	16.5%	22.5%	Colorado
$33,460	14.3%	21.3%	Indiana
$44,790	14.3%	21.0%	Maryland

Do states with higher concentrations of income also tend to have higher rates of upward mobility, giving workers more opportunity to make it to the top echelons? Interestingly, rates of economic mobility from the third quartile (that is, the 50th to 75th percentile of the income distribution) into the top quartile did not vary all that much across states.

The chart suggests there may be an income/equality trade-off: States with higher median incomes also tend to be states where income is more concentrated. But the correlation is not perfect. For example, Connecticut and Maryland have similar median earnings but very different income concentrations.

Source: Federal Reserve Bank of Minneapolis, Income Distributions and Dynamics in America. Regions follow Census Bureau divisions.

FEDERAL RESERVE BANK OF MINNEAPOLIS

The Federal Reserve Bank of Minneapolis is home to the Opportunity & Inclusive Growth Institute and *For All* magazine. The Minneapolis Fed has a long history of research designed to inform policymakers. Some of the hallmark policy initiatives driven by pioneering research are studies around banks that are too big to fail and the powerful return on public investment in early childhood education. One of 12 Federal Reserve Banks, the Minneapolis Fed monitors the Federal Reserve's Ninth District economy to help determine the nation's monetary policy and strives to promote economic well-being.

FINAL THOUGHT

❝Often the most useful work will summarize an enormous literature in an apples-to-apples comparison in a single table or graphic....If it is easier to use, it is more likely to be used.❞

Former Under Secretary of Commerce for Economic Affairs **Jed Kolko** at the 2023 Institute Research Conference, reflecting on how economists can make research products more useful for policy analysis and implementation.

CAROLINE YANG
FOR THE MINNEAPOLIS FED
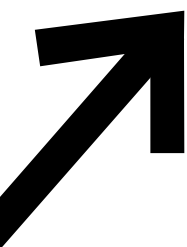
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