# Racial Gaps in Financial Outcomes

Big Data Evidence

JPMorgan Chase & Co.

INSTITUTE

## Abstract

Even amidst strong macroeconomic conditions, families experience high levels of income volatility that have important implications for well-being. Families with limited liquid assets are dramatically less likely to smooth consumption in the face of income fluctuations, and it stands to reason that racial gaps in liquid assets could result in racial differences in consumption smoothing. In this report, the JPMorgan Chase Institute uses administrative banking data to study racial gaps in liquid assets, take-home income, and families' consumption response to income volatility from the vantage point of a novel de-identified data source: administrative banking data paired with self-reported race information from voter registration files. We find large racial gaps in take-home income and liquid assets which persist across age, income, gender, and geographic segments. Additionally, we find racial differences in consumption smoothing. Compared to White families, Black and Hispanic families exhibit sharper drops in spending after involuntary job loss and larger increases in expenditures after the arrival of the tax refund. However, these racial differences in consumption smoothing are explained by racial gaps in liquid and financial asset buffers. Taken together, our results shed light on the distributional impacts and importance of efforts to reduce financial volatility and increase liquid assets for low-income families and address the structural factors that contribute to racial gaps in income and assets.

## About the Institute

The JPMorgan Chase Institute is harnessing the scale and scope of one of the world's leading firms to explain the global economy as it truly exists. Drawing on JPMorgan Chase's unique proprietary data, expertise, and market access, the Institute develops analyses and insights on the inner workings of the economy, frames critical problems, and convenes stakeholders and leading thinkers.

The mission of the JPMorgan Chase Institute is to help decision makers—policymakers, businesses, and nonprofit leaders—appreciate the scale, granularity, diversity, and interconnectedness of the global economic system and use timely data and thoughtful analysis to make more informed decisions that advance prosperity for all.

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In this report we study racial gaps in liquid assets, take-home income, and families' consumption response to income volatility.

Even amidst strong macroeconomic conditions, families experience high levels of income volatility that have important implications for well-being. Previous JPMorgan Chase Institute research has shown that families cut consumption on everyday necessities when they experience job loss, and delay spending on healthcare and durable purchases until their tax refund arrives. A key reason for this is that they have an insufficient liquid cash buffer. Families with limited liquid assets are dramatically less likely to smooth consumption in the face of income fluctuations.

It stands to reason then that racial gaps in liquid assets and wealth could result in racial differences in consumption smoothing. Longstanding gaps in income and wealth between White families and Black and Hispanic families have been well documented and have only grown following the Great Recession. What are the downstream consequences of these racial gaps in financial circumstances, particularly when families' incomes fluctuate on a day-to-day and month-to-month basis?

> Longstanding racial gaps in income and wealth have only grown following the Great Recession.

This report provides a first-ever high-frequency look at racial gaps in liquid assets, take-home income, and families' consumption response to income volatility from the vantage point of a novel de-identified data source: administrative banking data paired with self-reported race information. We matched Chase banking records with 2018 voter registration records in the states that had Chase branches in 2018 and that, under the Voting Rights Act, collect race information during voter registration.

This match yielded a large sample of 1.8 million families for whom we observe the race of the primary account holder along with other demographic characteristics, and a high-frequency, integrated view of income, spending, and liquid assets. This sample is broadly representative of the respective income distributions of Black, Hispanic, and White registered voters nationally and provides a reliable window into racial gaps in financial outcomes compared to benchmarks.

With this new data asset, we answer three key questions in this report. First, how large are the racial gaps in take-home income and liquid assets among Black, Hispanic, and White families and to what extent do they persist after accounting for other demographic factors? Second, are there racial differences in how much families smooth their consumption? We examine changes in everyday spending in response to two different sources of income volatility: involuntary job loss identified through the receipt of unemployment insurance benefits, a negative cash-flow event; and the arrival of a tax refund, a positive cash-flow event. Third, to what extent do racial gaps in liquid and financial asset buffers account for racial differences in families' consumption response to job loss and tax refunds?

We examine racial differences in the spending response to involuntary job loss and the arrival of tax refunds.

**Banking Records of 20 million families**
who held a Chase checking account between October 2012 and January 2019

MATCHING PROCESS

**Voter Registration Files**
that contain self-reported race information In 2018

YIELDS A SAMPLE UNIVERSE OF
## 1.8 million families in FL, GA, and LA

Who held a Chase checking account between October 2012 and January 2019

**&**

For whom we also observed self-reported race for the primary account holder along with other demographic attributes

### CORE SAMPLE
**915,723**

Includes families who:

- Were active checking-account users in all 12 months of 2018

- Had at least $5,000 in take-home income in 2018

### JOB-LOSS SAMPLE
**40,017**

Includes families who:

- Received a direct deposit of Unemployment Insurance (UI) into the checking account

- Had at least one trans-action in the checking account in all 6 months preceding UI receipt and 10 months following

### TAX REFUND SAMPLE
**297,382**

Includes families who:

- Were active checking-account users in all 12 months of 2017

- Had at least $5,000 of take-home income in 2017

- Received at least one tax refund in the deposit account in 2017, with total value of all tax refunds received in 2017 at least $100

### BENCHMARKING SAMPLE
**722,205**

Includes families who:

- Were active checking-account users in all 12 months of 2015

- Had at least $5,000 take-home income in 2015

Note: Eight Southern states (AL, FL, GA, LA, TN, PA, NC, SC) collect data on race as part of voter registration. We matched Chase banking records with 2018 voter registration records in the three states among those eight that had Chase branches in 2018 (GA, FL, LA). See the Data Asset section for a detailed description of this matching process.
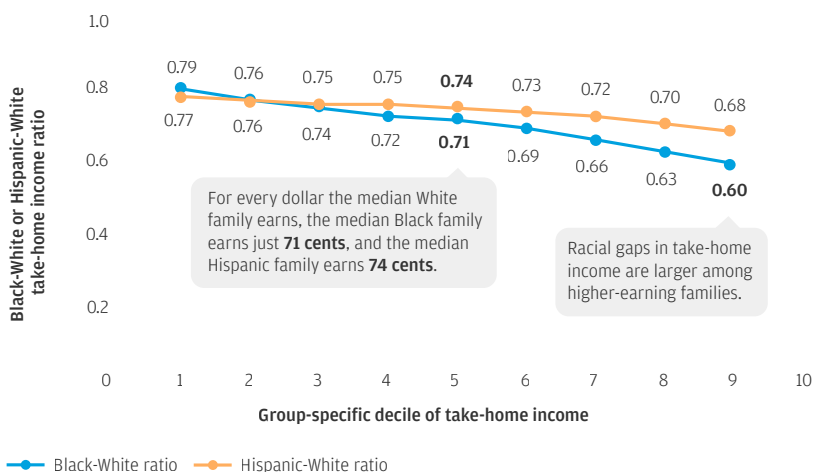
Source: JPMorgan Chase Institute

# Finding One

**Median Black and Hispanic families earn roughly 70 cents in take-home income for every dollar earned by White families, and racial gaps in earnings are largest for higher-income and older account holders.**

We measure the racial gap as the ratio of the take-home income for Black and Hispanic families, respectively, relative to White families, where race refers to the race of the primary account holder. Given that these measures are expressed as ratios, a ratio of 1.0 represents parity, and a lower ratio represents a larger racial gap.

**Black-White and Hispanic-White ratios of annual take-home income (2018), by group-specific decile of take-home income**



For every dollar the median White family earns, the median Black family earns just **71 cents**, and the median Hispanic family earns **74 cents**.

Racial gaps in take-home income are larger among higher-earning families.

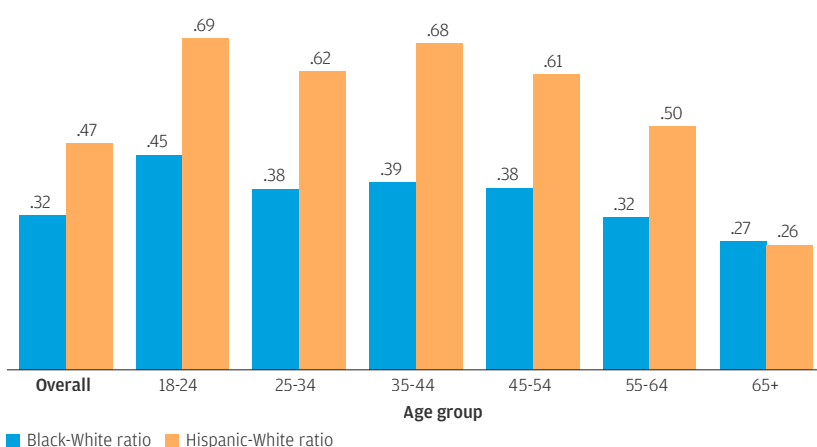*Black-White ratio*    *Hispanic-White ratio*

Note: Take-home income reflects the income after taxes and other payroll deductions that is deposited into one's checking account, which includes labor income, government benefits, tax refunds, capital and retirement income, ATM deposits, check deposits, and other electronic deposits

Source: JPMorgan Chase Insitute

# Finding Two

**Racial gaps in liquid assets are twice as large as gaps in take-home income. They persist across the income spectrum and are widest in the 65+ age cohort.**

**Black-White and Hispanic-White ratios of liquid assets (2018), by age**



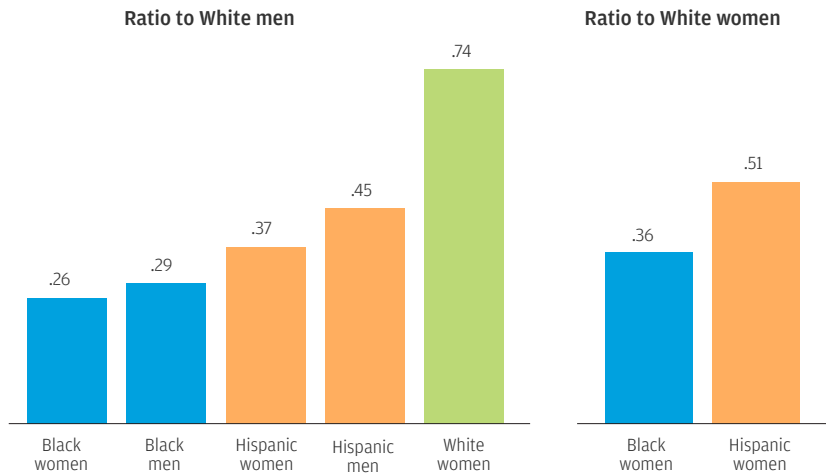*Black-White ratio*    *Hispanic-White ratio*

Note: Liquid assets is the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts

Source: JPMorgan Chase Insitute

## Finding Three

**Black women face the greatest gap in take-home income and liquid assets compared to White men, but racial gaps are larger among men than women.**

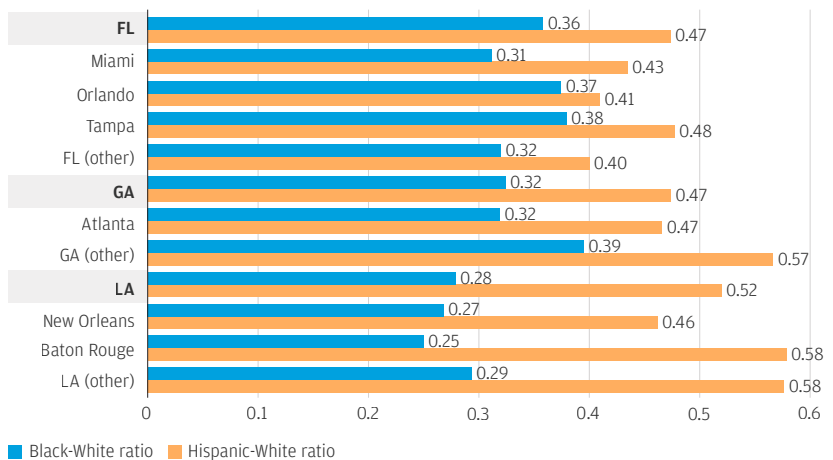**Black-White and Hispanic-White ratios of median liquid assets (2018), by gender**

Ratio to White men

Ratio to White women



Source: JPMorgan Chase Insitute

## Finding Four

**Across geographies, the financial outcomes of Hispanic families vary the most, while the financial outcomes of Black families vary the least. Black-White gaps in financial outcomes are largest in Louisiana, while Hispanic-White gaps are largest in Florida.**

**Black-White and Hispanic-White ratios of annual median liquid assets (2018), by geography**



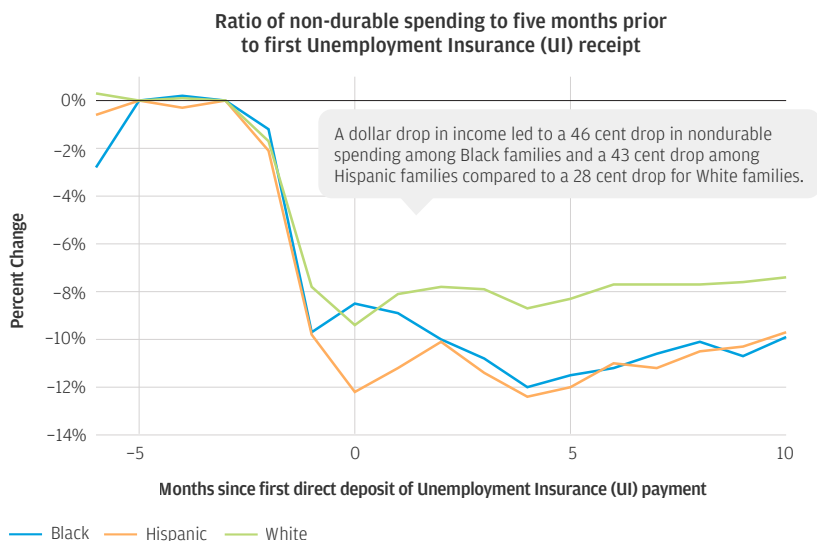■ Black-White ratio  ■ Hispanic-White ratio

Note: Liquid assets is the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts. Cities refer to CBSAs (e.g., Miami refers to the Miami-Fort Lauderdale-West Palm Beach CBSA).

Source: JPMorgan Chase Insitute

## Finding Five

After involuntary job loss, Black and Hispanic families cut their everyday spending more so than White families, differences that are explained by racial gaps in liquid and financial asset buffers.

**Ratio of non-durable spending to five months prior to first Unemployment Insurance (UI) receipt**

A dollar drop in income led to a 46 cent drop in nondurable spending among Black families and a 43 cent drop among Hispanic families compared to a 28 cent drop for White families.

Percent Change

Months since first direct deposit of Unemployment Insurance (UI) payment
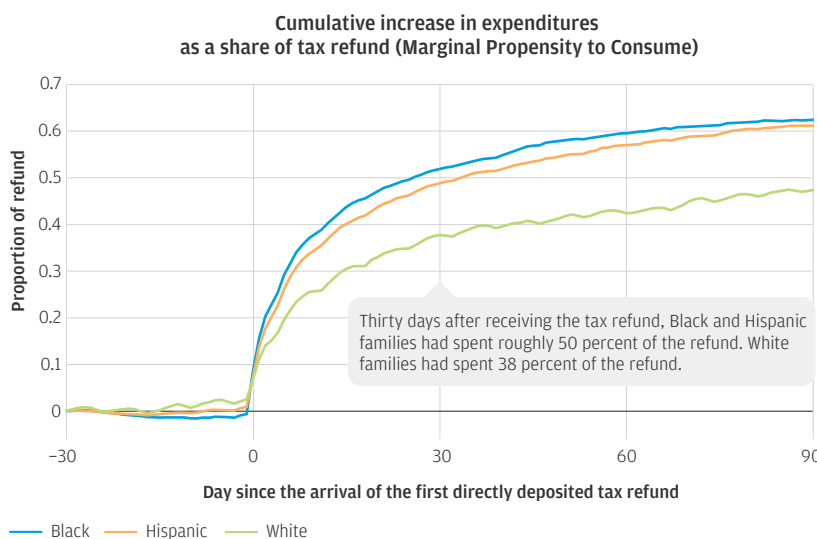
— Black   — Hispanic   — White

Note: Unemployment Insurance (UI) refers to UI payments direct deposited into the checking account, labor income only includes inflows to the checking account identifable as labor income, and non-durable spending refers to expenditures on non-durable goods from the checking account and using Chase credit cards. The ratio is relative to month -5 (5 months before first UI payment).

Source: JPMorgan Chase Insitute

## Finding Six

Upon receipt of a tax refund, Black and Hispanic families increase their expenditures more so than White families, differences that are explained by racial gaps in liquid and financial asset buffers.

**Cumulative increase in expenditures as a share of tax refund (Marginal Propensity to Consume)**

Proportion of refund

Thirty days after receiving the tax refund, Black and Hispanic families had spent roughly 50 percent of the refund. White families had spent 38 percent of the refund.

Day since the arrival of the first directly deposited tax refund

— Black   — Hispanic   — White

Source: JPMorgan Chase Insitute

Racial Gaps in Financial Outcomes: Big Data Evidence

In conclusion, we find large racial gaps in take-home income and liquid assets which persist across age, income, gender, and geography. The racial gap in liquid assets makes Black and Hispanic families more vulnerable to income fluctuations. Families with lower liquid asset buffers—disproportionately Black and Hispanic families—cut their consumption to a greater extent when they experience involuntary job loss and increase their consumption to a greater extent when they receive a tax refund. However, racial gaps in consumption smoothing disappear when we account for the racial gaps in liquid and financial asset buffers.

These findings have important implications for public policy and the distributional impacts of policy interventions. They raise broader questions about how to reduce financial volatility and increase liquid assets for low-income families and, importantly, address the structural factors that contribute to racial gaps in income and assets.

Efforts to reduce income volatility, particularly among low-income families, may include expanding unemployment insurance benefits and ensuring access to workplace benefits and protections such as paid sick and family leave and a predictable work schedule. They could also include distributing tax credits and withholdings throughout the tax year.

In addition, we must consider ways to help families manage financial volatility. We estimate that a liquid asset buffer of roughly $5,000 to $6,000—as a form of "private insurance"—might enable Black and Hispanic families to sustain their typical consumption levels through a job loss or major cash-flow event. This is considerably more than the $1,000 to $1,500 that the median Black and Hispanic family in our sample currently has. Thus, a key question is how to support families in building these liquid assets.

Policies and programs that boost income and address the underlying challenges Black and Hispanic families face within the labor market could help to close racial gaps in income in the short-run. These could include increasing the minimum wage, strengthening the Earned Income Tax Credit, investing in job training programs, and reducing the barriers to employment for individuals with criminal backgrounds.

To close the racial gap in liquid assets, which is much larger, we also need stronger programs, policies, and innovations to both reduce expenses that disproportionately burden Black and Hispanic families and promote asset building among low-income families. These might include efforts to make housing, high-quality childcare, and higher education more affordable as well as employer- and government-sponsored supports for asset building.

The private, nonprofit, and government sectors all have important roles to play as policymakers, service providers, and employers in closing racial gaps in income and wealth. Our research shows the importance of disaggregating economic and financial statistics by race and measuring these statistics at a high frequency. Doing so can help shed light on the factors that contribute to racial differences in financial outcomes and instruct us on how to design more efficient and equitable policies.

# Introduction

Even amidst strong macroeconomic conditions, families experience high levels of month-to-month income volatility: the typical family experiences month-to-month income changes of more than 30 percent and five major income swings a year (Farrell et al. 2019a). Income volatility impacts families' spending patterns in ways that have important implications for well-being, leading families to cut consumption on everyday necessities when they experience job loss and delay spending on healthcare and durable purchases until their tax refund arrives (Ganong and Noel 2019; Farrell et al. 2018a; Farrell et al. 2019b).

A key reason for this is that they have an insufficient liquid cash buffer. Families with limited liquid assets are significantly less likely to smooth consumption in the face of income fluctuations (Farrell et al. 2016; Farrell et al. 2018a). For example, in previous research we observed that families with less than $500 in their checking account increased their healthcare spending by 220 percent in the week after their tax refund arrived, a twenty-fold larger increase than those with more than $3,600 in their checking account, who increased their healthcare spending by just 11 percent (Farrell et al. 2018).
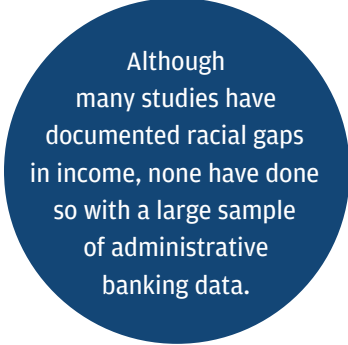
If access to liquidity is strongly associated with a family's ability to smooth consumption, then racial gaps in liquid assets could result in racial differences in consumption smoothing. Longstanding gaps in income and wealth between White families and Black and Hispanic families have been well documented and have only grown following the Great Recession (Bayer and Charles 2018; Chetty et al. 2019; McKernan et al. 2014a; Thompson and Suarez 2019). Many factors have systematically contributed to wealth-building of many White families while impeding wealth-building among Black and Hispanic families, including:

- Intergenerational transfers of wealth within families (e.g., Meschede et al. 2017; Chiteji and Hamilton 2002; McKernan et al. 2014b)

- Neighborhood conditions such as poverty rates, racial bias, and home values (e.g., Chetty et al. 2019; Perry et al. 2018)

- Geographic and financial barriers to human capital accumulation (e.g., Dobbie and Fryer 2011; Jackson and Reynolds 2013; Addo et al. 2016)

- Racial segregation and discrimination in the labor market (e.g., Grodsky and Pager 2001; Bertrand & Mullainathan 2004)

- Racial biases in the policies and practices of government, institutions, and the private sector (e.g., Oliver and Shapiro 2013; Katznelson 2005; Robles et al. 2006; Bayer et al. 2014; Asante-Muhammad et al. 2017; Bartlett et al. 2019).

These forces, most of which have substantial if under-examined structural components (Emmons and Ricketts 2017; Aspen Institute 2004; Kijakazi et al. 2019), not only have a direct effect on wealth and wealth accumulation at a given point in time, but may create racial differences in the key determinants of wealth over time and across generations. What are the downstream consequences of these racial gaps in financial circumstances, particularly when families' incomes fluctuate on a day-to-day and month-to-month basis?

> Although many studies have documented racial gaps in income, none have done so with a large sample of administrative banking data.

This report provides a unique high-frequency look at racial gaps in liquid assets, take-home income, and families' consumption response to income volatility from the vantage point of a novel de-identified data source: administrative banking data paired with self-reported race information. We matched Chase banking records with 2018 voter registration records in the states that had Chase branches in 2018 and that collect race information during voter registration.[1] Specifically, voter registration records contain personal identifiers which were matched to bank records and then delivered to the JPMorgan Chase Institute stripped of these personal identifiers.[2] This matching yielded a large de-identified sample of 1.8 million families in Florida, Georgia, and Louisiana for whom we observe, on a de-identified basis, the race of the

primary account holder along with other demographic characteristics, and a high-frequency, integrated view of income, spending, and liquid assets. We focus exclusively on the racial gaps between White, Black, and Hispanic families, who collectively represent 94 percent of our sample, as those are the racial and ethnic groups for whom we observe the largest and most representative samples (see the Data Asset section for a full breakdown of the sample by race).

Our sample is roughly 150-fold larger than existing public surveys typically used to study financial outcomes by race and is unfettered by the low response rates and reliance on respondent recollections that frequently encumber surveys.[3] Moreover, our large sample lets us provide detailed results for six metro areas—Miami, Orlando, Tampa, Atlanta, New Orleans, and Baton Rouge.

With this new data asset, we answer three key questions in this report. First, how large are the racial gaps in take-home income and liquid assets among Black, Hispanic, and White families and to what extent do they persist after accounting for other demographic factors? As mentioned above, racial gaps in financial outcomes have been widely documented by others but never through the lens of administrative banking data. Such data offer us a window into take-home income, the income after taxes and other deductions that arrives into one's bank account and reflects a family's purchasing power on a cash-flow basis. We measure racial gaps in financial outcomes as the ratio

of the take-home income and liquid assets in 2018 for Black and Hispanic families relative to White families, where race refers to the race of the primary account holder. Given that these measures are expressed as ratios, a ratio of 1.0 represents parity, and a lower ratio between Black and White families represents a larger racial gap. For example, we document a Black-White ratio of 0.32 in liquid assets, implying that Black families have 32 cents in liquid assets for every dollar held by White families.

Second, are there racial differences in how much families smooth their consumption in the face of income volatility? We examine changes in everyday spending (e.g. basic necessities) in response to two different sources of income volatility: involuntary job loss identified through the receipt of unemployment insurance benefits, a negative cash-flow event; and the arrival of a tax refund, a positive cash-flow event. These two cash-flow events allow us to put racial differences in financial outcomes in the context of two important policy levers used to reduce inequality and financial instability: unemployment insurance, a form of public insurance used to help workers mitigate the impacts of job loss that was no fault of their own; and tax policy, a tool to redistribute income through tax credits and progressive taxation. In our companion academic paper we also explore consumption responses to firm-wide changes in monthly pay (Ganong et al. 2020). To our knowledge we are the first to document Black-White and Hispanic-White differences in consumption smoothing at a month-to-month and daily

frequency.[4] We interpret large cuts in consumption after job loss and large increases in consumption after the tax refund as having potential impacts on a family's well-being, insofar as they are indications that families may be under-consuming after job loss or between tax refunds. For example, if families defer healthcare after they lose a job or until the tax refund, that could impact their physical health. Thus, families' ability to "smooth" their consumption through these events suggests well-being is less impacted. In each case we quantify families' marginal propensity to consume (MPC) as the ratio of the consumption change to the income change—the dollar change in consumption associated with a dollar change in income. We then examine whether the MPC differs by race.

Third, to what extent do racial gaps in liquid and financial asset buffers account for racial differences in families' consumption response to job loss and tax refunds? As mentioned above, we know from prior work that liquid assets play a central role as the first line of defense—a form of private insurance—in helping families smooth consumption through cash-flow events such as involuntary job loss and tax refunds (Farrell et al. 2016; Farrell et al. 2018; Farrell et al. 2018b). Thus, racial gaps in liquid asset buffers could account for racial inequality in consumption smoothing. Insofar as liquid assets are just a small fraction of a family's balance sheet and understate even larger racial gaps in net wealth (see Box 1), we also explore the role of total financial assets, which families may also draw on to cope with financial stability.

## Our findings are as follows:

**Finding 1:** Median Black and Hispanic families earn roughly 70 cents in take-home income for every dollar earned by White families, and racial gaps in earnings are largest for higher-income and older account holders.

**Finding 2:** Racial gaps in liquid assets are twice as large as gaps in take-home income. They persist across the income spectrum and are widest in the 65+ age cohort.

**Finding 3:** Black women face the greatest gap in take-home income and liquid assets compared to White men, but racial gaps are larger among men than women.

**Finding 4:** Across geographies, the financial outcomes of Hispanic families vary the most, while the financial outcomes of Black families vary the least. Black-White gaps in financial outcomes are largest in Louisiana, while Hispanic-White gaps are largest in Florida.

**Finding 5:** After involuntary job loss, Black and Hispanic families cut their everyday spending more so than White families, differences that are explained by racial gaps in liquid and financial asset buffers.

**Finding 6:** Upon receipt of a tax refund, Black and Hispanic families increase their expenditures more so than White families, differences that are explained by racial gaps in liquid and financial asset buffers.

> The private, nonprofit, and government sectors all have roles to play in closing racial gaps in income and wealth.

In conclusion, we find large racial gaps in take-home income and liquid assets which persist across age, income, gender, and geography. The racial gap in liquid assets makes Black and Hispanic families more vulnerable to income fluctuations. When faced with a job loss or when the tax refund arrives, families with lower liquid asset buffers—disproportionately Black and Hispanic families—exhibit a larger marginal propensity to consume: they cut their consumption to a greater extent when they experience involuntary job loss and increase their consumption to a greater extent when they receive a tax refund. Racial differences in consumption smoothing disappear when we account for the racial gaps in liquid and financial asset buffers, however. Put differently, regardless of race, families with similar liquid and financial asset buffers respond similarly when they experience job loss or receive a tax refund.

These findings have important implications for public policy and the distributional impacts of policy interventions. Specifically, they raise broader questions as to how to reduce financial volatility and increase liquid assets for low-income families and, importantly, address the structural factors that contribute to racial gaps in income and assets.

Efforts to reduce income volatility particularly among low-income families, include expanding unemployment insurance benefits and ensuring access to workplace benefits and protections such as paid sick and family leave and a predictable work schedule. They could also include distributing tax credits and withholdings throughout the tax year.

In addition to reducing financial volatility, we must consider ways to help families buffer against financial volatility. We estimate that a liquid asset buffer of roughly $5,000 to $6,000—as a form of "private insurance"—might enable Black and Hispanic families to sustain their typical consumption levels through a job loss or

major cash-flow event. This is considerably more than the $1,000 to $1,500 that the median Black and Hispanic family in our sample currently has. Thus, a key question is how to support families in building these liquid assets.

Policies and programs that boost income and address the underlying challenges Black and Hispanic families face within the labor market could help to close racial gaps in income. These could include increasing the minimum wage, strengthening the Earned Income Tax Credit, investing in job training programs, and reducing the barriers to employment for individuals with criminal backgrounds.

However, to close the racial gap in liquid assets, which is much larger, we also need more effective programs, policies, and innovations to both reduce expenses that disproportionately burden Black and Hispanic families and promote asset building among low-income families. These might include efforts to make housing, high-quality childcare, and higher education more affordable as well as employer- and government-sponsored supports for asset building.

The private, nonprofit, and government sectors all have important roles to play as policymakers, service providers, and employers in closing racial gaps in income and wealth. Interventions that aim to improve equity will need to be effectively targeted to low-income families and specifically communities of color. Further research is needed to identify, pilot, and examine the impacts of such interventions. Our research shows the importance of disaggregating economic and financial statistics by race and measuring these statistics at a high frequency. Doing so can help shed light on the factors that contribute to racial differences in financial outcomes and instruct us to design more efficient and equitable policies.

**Box 1:** Racial gaps in income, liquid assets, total assets, and net wealth—evidence from the Survey of Consumer Finances

As important context for examining racial gaps in liquid assets, it is helpful to understand how Black, Hispanic, and White families arrange their finances across different asset classes and how the racial gaps in income compare to racial gaps in liquid assets, total assets, and net wealth. Table 1 shows the median value of a range of financial outcomes by race and the racial gap in each financial outcome. For each outcome the table reports the conditional median, the median value among families who report any non-zero value. It shows that for every dollar of income earned by White families, Black families

earn roughly 58 cents, and Hispanic families earn 63 cents.

In contrast, racial gaps in assets and net wealth are much larger than racial gaps in income. Specifically, Black and Hispanic families have roughly 20 cents in liquid assets for every dollar White families hold. These racial gaps are still roughly 20 cents when considering total assets, but this belies important racial differences in the composition of total assets. Compared to Black and Hispanic families, White families have a much larger share of their total assets in other (non-liquid) financial assets, such as investment accounts, and a

smaller share in nonfinancial assets, such as real estate.

When we consider net worth, consisting of the excess of a family's assets over its debts, racial gaps are even larger. Black families have just 10 cents and Hispanic families 12 cents of net worth for every dollar of net wealth of White families. In fact, the share of families with negative net wealth (not shown) is 9 percent for White families, compared to 19 percent for Black families and 13 percent for Hispanic families (Dettling et al. 2017). Thus, racial gaps in financial outcomes get progressively larger as we consider a more complete financial picture.

**Table 1:** Liquid assets represent a small share of total assets but racial gaps in liquid assets and total assets are similar

| | Conditional Median Financial Outcome in 2016 | | | Racial Gaps in Conditional Median Financial Outcomes in 2016 | |
| --- | --- | --- | --- | --- | --- |
| | White non-Hispanic | Black or African-American non-Hispanic | Hispanic or Latino | Black-White Ratio | Hispanic-White Ratio |
| Income | $61,200 | $35,400 | $38,500 | 0.58 | 0.63 |
| Liquid assets held in transaction accounts* | $7,000 | $1,400 | $1,500 | 0.20 | 0.21 |
| Financial Assets | $51,500 | $4,000 | $3,000 | 0.08 | 0.06 |
| Non Financial Assets | $193,500 | $62,400 | $68,000 | 0.32 | 0.35 |
| Total Assets (financial and nonfinancial) | $264,700 | $46,600 | $54,000 | 0.18 | 0.20 |
| Debt | $74,100 | $31,100 | $30,000 | 0.42 | 0.40 |
| Net Worth (assets and liabilities) | $171,000 | $17,100 | $20,600 | 0.10 | 0.12 |

*Transaction accounts include checking, savings, and money market deposit accounts; money market funds; and call or cash accounts at brokerages and prepaid debit cards.

Source: 2016 Survey of Consumer Finances

# About the Data

In this novel data asset, we matched 2018 voter registration data and banking data in the three states—Florida, Georgia, and Louisiana—in which Chase branches existed in 2018 and voter registration records contain self-reported race. This data asset of 1.8 million families allows us to observe self-reported race alongside other demographic attributes and financial outcomes. The voter registration forms in these states ask respondents if they identify as White, Black, Hispanic, or other. The use of a single question where respondents select one option is in line with how the Census asked about race and ethnicity in 1960 and 1970. However, it means that we are unable to separately analyze race and Hispanicity (e.g. we cannot distinguish Hispanic individuals who identify as White from Hispanic individuals who identify as Black). For this reason, we use the word "race" as a shorthand to describe responses to the question on the voter registration form, acknowledging that many people consider Hispanic identity an ethnic category and not a racial group.

Our unit of analysis is the primary account holder of the Chase checking account, which could have one or more authorized users. In our sample, 48 percent of accounts held by White primary account holders have multiple authorized users, compared to 35 percent of accounts held by Hispanic primary account holders and 31 percent of accounts held by Black primary account holders. We subsequently refer to this unit as a "family" insofar as the financial activity we observe represents the activity of all of the users on the account. That said, the demographic identifiers, such as race, age, and gender, all refer to the characteristics of the person identified as the primary account holder. We do not analyze or describe the demographic characteristics of other users on the account or the composition of the family.

In this report we examine several different financial outcomes, including checking account balances, liquid asset holdings, checking account inflows and outflows, and credit card spending. We categorize checking account inflows into take-home income and transfers. Take-home income reflects the income after taxes and other payroll deductions that is deposited into one's checking account, which includes labor income, unemployment insurance (UI) and other government benefits, tax refunds, capital and retirement income, ATM deposits, check deposits and other electronic deposits. Similarly, we categorize checking account outflows and credit card transactions into a variety of spending categories, debt payments, and transfers to savings accounts.

In Findings 1 through 4 we assess racial gaps in liquid assets and take-home income at an annual frequency for 2018. In Finding 5, we focus on families who experienced involuntary job loss and examine their labor income, UI benefits, and non-durable spending at the monthly level in the six months leading up to and ten months after the arrival of the first UI receipt. In Finding 6, we examine a variety of categories of expenditure and saving at a daily resolution in the thirty days before and ninety days after the arrival of the tax refund, allowing us to isolate the short-term impacts of the tax refund receipt on expenditures and savings.

Our data, drawing exclusively from banked, registered voters in Florida, Georgia, and Louisiana, document racial gaps in the context of those three states. In the Data Asset section, we describe extensively how our sample benchmarks to the nation and to our sample-frame of banked registered voters in Florida, Georgia, and Louisiana on a range of demographic and financial characteristics.

Although our sample differs from the nation in a few noteworthy respects, it gives us a reliable window into racial gaps in financial outcomes compared to benchmarks. More specifically, our sample is not fully representative of the general population in that it excludes the unbanked and anyone who is ineligible or not registered to vote. It overrepresents Black and Hispanic households, families in urban areas, and younger primary account holders. That said, our sample frame offers an income distribution that is broadly representative of the respective income distributions of Black, Hispanic, and White families. In addition, we find racial gaps in median checking account balances and take-home income as observed in Chase accounts are of the same order of magnitude as benchmarks from the nation and among banked, registered voters. Our findings are as follows.

## Finding

# One

## Median Black and Hispanic families earn roughly 70 cents in take-home income for every dollar earned by White families, and racial gaps in earnings are largest for higher-income and older account holders.

Although many studies have documented racial gaps in income, none have done so from the vantage point of a very large sample of administrative banking data. We focus on take-home income, the income after taxes and other payroll deductions that is deposited into one's checking account and is typically used to cover monthly expenses.

Figure 1 shows that median take-home income deposited into families' checking accounts over the course of 2018 was $34,011 for Black families and $35,666 for Hispanic families, compared to $47,908 for White families. For every dollar the median White family earns in take-home income, the median Black family earns just 71 cents and the median Hispanic family earns 74 cents.[5] Following Bayer and Charles (2018), we can also calculate the rank gap—how far below the percentile in
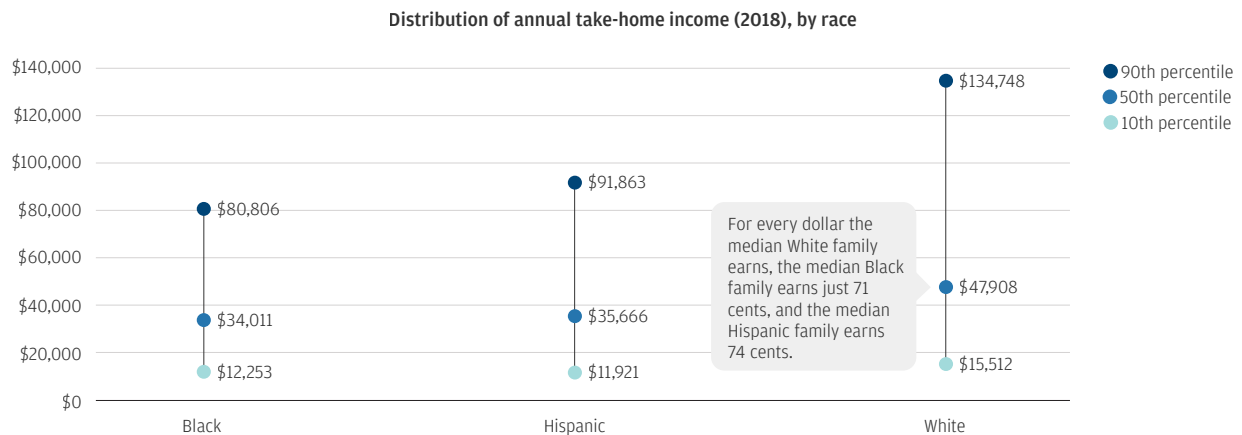
the Black distribution a Black family's take-home income would rank in the White distribution. The median Black family's take-home earnings ($34,011) would put them at just the 34th percentile of the White distribution, and the median Hispanic family's earnings ($35,666) at the 36th percentile of the White distribution. Notably 10 percent of Black and Hispanic families earned roughly $12,000 or less annually in take-home income in 2018, averaging under $1,000 per month. On the high end of the spectrum, the 90th percentile White family earns well over $100,000 ($134,748) annually, compared to just $80,806 for Black families and $91,863 for Hispanic families.

It is worth acknowledging that Black and Hispanic families receive a higher share of their income through monetary instruments, such as cash, money orders, and checks, which families

can access and spend without passing through the checking account (FDIC 2017).[6] As a result, these ratios could be biased downwards in our sample, slightly overstating the racial gaps. That said, our ratios are somewhat higher than estimates from the Survey of Consumer Finances (see Box 1) but lower than estimates from the Current Population Survey (see Figure 30).

> The median Black family's take-home earnings would put them at just the 34th percentile of the White distribution.

**Figure 1:** Ten percent of Black and Hispanic families earned less than $13,000 in take-home income in 2018

**Distribution of annual take-home income (2018), by race**



- 90th percentile
- 50th percentile
- 10th percentile

$140,000
$120,000
$100,000
$80,000 — $80,806
$60,000
$40,000 — $34,011
$20,000 — $12,253
$0

$91,863
$35,666
$11,921

$134,748
$47,908
$15,512

Black    Hispanic    White

For every dollar the median White family earns, the median Black family earns just 71 cents, and the median Hispanic family earns 74 cents.
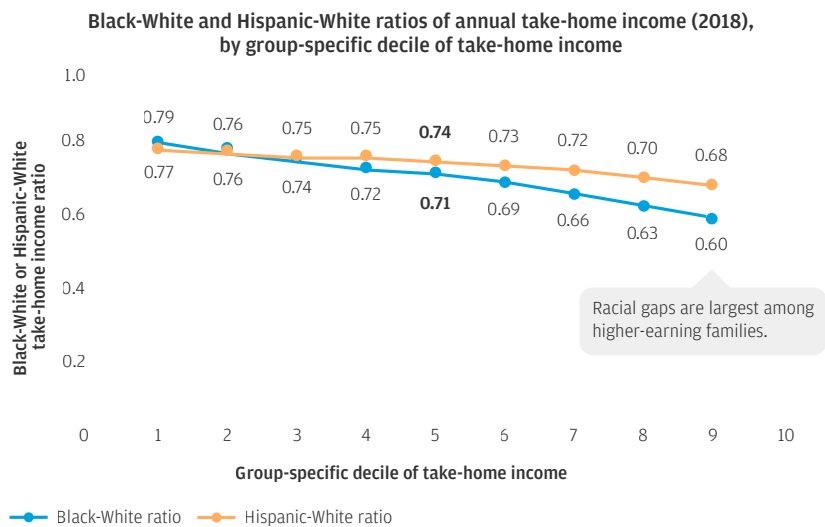
Note: Take-home income reflects the income after taxes and other payroll deductions that is deposited into one's checking account, which includes labor income, government benefits, tax refunds, capital and retirement income, ATM deposits, check deposits, and other electronic deposits.

Source: JPMorgan Chase Insitute

Figure 2 shows the racial gap in take-home income at each point along the income distribution specific to each racial group. We observe that racial gaps in take-home income exist at all rungs of the income ladder. But it is noteworthy that these ratios decline continuously with income levels and are most stark among high-income earners.[7] For every dollar earned by the 90th percentile White family, the 90th percentile Black family earns just 60 cents and the 90th percentile Hispanic family earns 68 cents. These large gaps raise the question as to whether Black and Hispanic families face the greatest barriers in accessing the highest income-generating opportunities. Others have also documented particularly large racial gaps in earnings within the highest-earning occupations (Grodsky and Pager 2001).

**Figure 2:** Black-White and Hispanic-White gaps in take-home income are largest among high earners

**Black-White and Hispanic-White ratios of annual take-home income (2018), by group-specific decile of take-home income**



Black-White or Hispanic-White take-home income ratio

1.0
0.8 — 0.79  0.76  0.75  0.75  **0.74**  0.73  0.72  0.70  0.68
       0.77  0.76  0.74  0.72  **0.71**  0.69  0.66  0.63  0.60
0.6
0.4
0.2

0    1    2    3    4    5    6    7    8    9    10

Group-specific decile of take-home income

Racial gaps are largest among higher-earning families.

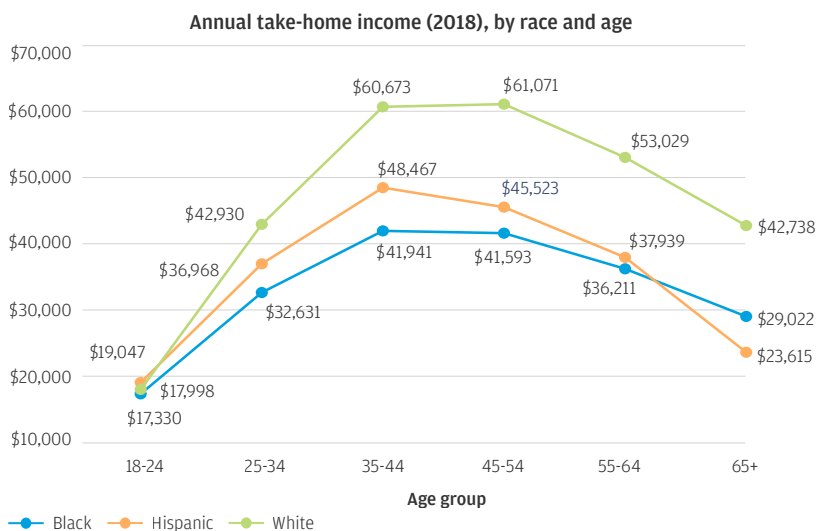— Black-White ratio    — Hispanic-White ratio

Note: Take-home income reflects the income after taxes and other payroll deductions that is deposited into one's checking account, which includes labor income, government benefits, tax refunds, capital and retirement income, ATM deposits, check deposits, and other electronic deposits

Source: JPMorgan Chase Insitute

Racial Gaps in Financial Outcomes: Big Data Evidence

Figure 3 shows annual take-home income by age. For Black and Hispanic families, take-home income peaks among 35 to 44-year-olds and then declines by age cohort. Among White families median take-home income peaks at around $61,000 among 35 to 44-year-olds and remains at that level among the 45 to 54-year-olds. Insofar as we are comparing a cross-section of age segments, these results reflect a combination of lifecycle and cohort effects. Indeed, there is evidence of race-specific cohort effects. For example, McKernan et al. (2014a) and Dettling et al. (2017) show that Black and Hispanic families were differentially impacted by the Great Recession and the subsequent financial recovery.

Racial gaps in take-home income increase with age (Figure 4). Eighteen to 24-year-olds in the data have virtually no take-home income, and significant racial gaps appear as soon as households have substantial income receipt. These gaps widen with age. This pattern suggests that compared to Black and Hispanic families, White families might experience faster income growth between the ages of 18 and 44 and a slower decline in income after age 45. These results are consistent with an existing body of literature that has documented faster wage growth among White families compared to Black and Hispanic families resulting in larger earnings gaps over the lifecycle (e.g. Daly et al. 2020). In addition, the larger racial gaps in take-home income among the 65+ age cohort is consistent with evidence that White families receive significantly higher social security benefits and other retirement annuities than Black and Hispanic families (Kijakazi et al. 2019).

**Figure 3:** Take-home income peaks among 35 to 44-year-olds and, for White families, remains at its peak level for 45 to 55-year-olds



Annual take-home income (2018), by race and age

Note: Take-home income reflects the income after taxes and other payroll deductions that is deposited into one's checking account, which includes labor income, government benefits, tax refunds, capital and retirement income, ATM deposits, check deposits, and other electronic deposits

Source: JPMorgan Chase Insitute

**Figure 4:** Racial gaps in take-home income increase along with the age of the primary account holder
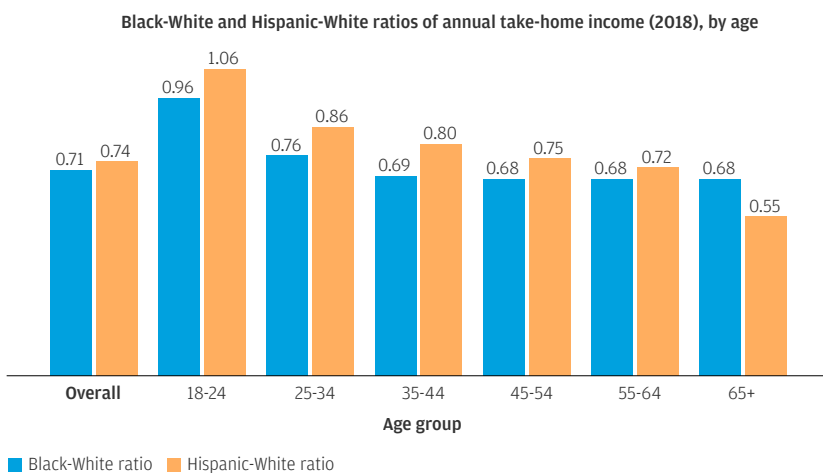


Black-White and Hispanic-White ratios of annual take-home income (2018), by age

Note: Take-home income reflects the income after taxes and other payroll deductions that is deposited into one's checking account, which includes labor income, government benefits, tax refunds, capital and retirement income, ATM deposits, check deposits, and other electronic deposits.

Source: JPMorgan Chase Insitute

# Finding

# Two

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Racial gaps in liquid assets are twice as large as gaps in take-home income. They persist across the income spectrum and are widest in the 65+ age cohort.

If income is what typically provisions for families' daily expenditures, liquid assets are what families rely on to cover larger expenses or to sustain themselves through dips in their income. We define liquid assets held at Chase as the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts. Consistent with evidence from the SCF (Box 1) and existing literature, we find larger racial gaps in liquid assets than take-home income.
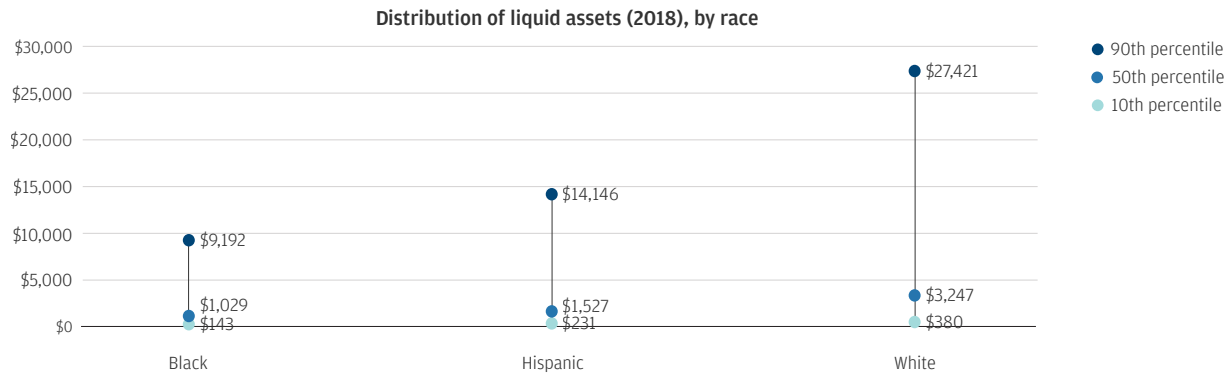
> Black families have 68 percent fewer liquid assets and 29 percent lower take-home incomes than White families.

Figure 5 shows that the median White family has $3,247 in liquid assets compared to just $1,029 for Black families and $1,527 for Hispanic families. This represents a Black-White ratio of 0.32 and a Hispanic-White ratio of 0.47. Put differently, for every dollar the median White family has in liquid assets, the median Black family has just 32 cents and the median Hispanic family has 47 cents. Compared to the Black-White and Hispanic-White ratios in take-home income, which were 0.71 and 0.74 respectively, we see that racial gaps in liquid assets are much larger. In percentage terms, Black families have 68 percent fewer liquid assets and 29 percent lower take-home incomes than White families. Hispanic families have 53 percent lower liquid assets and 26 percent lower take-home incomes. Thus, racial gaps in liquid assets are twice as large as the racial gaps in take-home income.

Figure 5 also conveys the full distribution of liquid assets by race. The median Black family with $1,029 in liquid assets would be at just the 24th percentile of the White distribution, and the median Hispanic family with $1,527 in liquid assets would be at just the 33rd percentile of the White distribution. Conversely, the median White family, with $3,246 in liquid assets, has more liquid assets than 76 percent of Black families and 67 percent of Hispanic families.

The tails of the distribution are also worth noting. Ten percent of Black families have less than $143 in liquid assets, just a week's worth of groceries. Only 10 percent of Black families have more than $9,192 in liquid assets, while roughly 25 percent of White families have more than this amount.
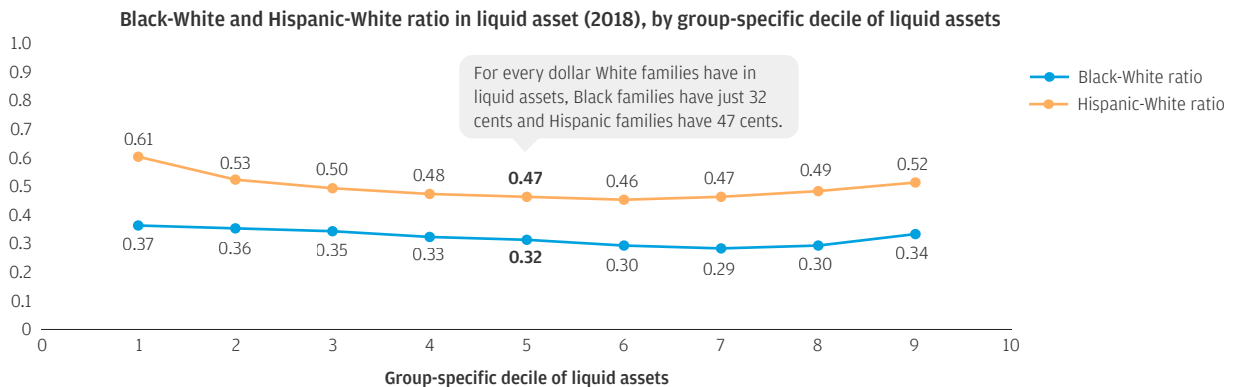
**Figure 5:** The median White family has $3,247 in liquid assets compared to just $1,029 for Black families and $1,527 for Hispanic families

**Distribution of liquid assets (2018), by race**



- 90th percentile
- 50th percentile
- 10th percentile

Black: $9,192 / $1,029 / $143
Hispanic: $14,146 / $1,527 / $231
White: $27,421 / $3,247 / $380

Note: We define liquid assets as the sum of balances in one's checking, prepaid debit, savings, money market, and certificates of deposit accounts.

Source: JPMorgan Chase Insitute

**Figure 6:** For every dollar the median White family has in liquid assets, the median Black family has just 32 cents and the median Hispanic family has 47 cents

**Black-White and Hispanic-White ratio in liquid asset (2018), by group-specific decile of liquid assets**



For every dollar White families have in liquid assets, Black families have just 32 cents and Hispanic families have 47 cents.

- Black-White ratio
- Hispanic-White ratio

Hispanic-White ratio: 0.61, 0.53, 0.50, 0.48, 0.47, 0.46, 0.47, 0.49, 0.52
Black-White ratio: 0.37, 0.36, 0.35, 0.33, 0.32, 0.30, 0.29, 0.30, 0.34

Group-specific decile of liquid assets

Note: We define liquid assets as the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts.

Source: JPMorgan Chase Insitute

Figure 6 displays the ratio of liquid assets between Black and White families and Hispanic and White families at each point along their respective distributions. We can see that racial gaps in liquid assets are slightly smaller among families with the least liquid assets evident in the higher Black-White and Hispanic-White ratios: for every dollar the 10th percentile White family has, the 10th percentile Black family has 37 cents, and the 10th percentile Hispanic family has 61 cents.

Another way to scale liquid assets is to express them as the number of weeks' worth of a family's take-home income, or their cash buffer. Previous JPMorgan Chase Institute research estimated that families need roughly 2.5 weeks' worth of take-home income in liquid assets to weather either an income dip or an expenditure spike, events that families experience at least once a year (Farrell et al. 2019). Families require six weeks' worth of take-home income in liquid assets in order to

weather a simultaneous income dip and expenditure spike, an event that families experience roughly every five years. We find that White families have a median cash buffer of 2.9 weeks' equivalent in take-home income in liquid assets compared to just 1.5 weeks' worth for Black families and 2.0 weeks' worth for Hispanic families. In summary, Black and Hispanic families have a lower level of liquid assets than White families and an insufficient cash buffer to weather a single income dip or expenditure spike.

In Figure 7 and Figure 8 we further explore the relationship between liquid assets, income, and race by examining liquid asset balances within each income quintile.[8] We find that racial gaps in liquid assets get smaller once we compare families within an income quintile, but they persist across the income spectrum. In other words, even among families with similar incomes, for every dollar in liquid assets White families have, Black families still have roughly 50 cents and Hispanic families have roughly 70 cents. Among middle-income families, Black families have roughly $1,200 and Hispanic families have $1,600 compared to $2,400 White families. Even among families in the highest income quintile, earning more than $78,743 in take-home income, Black families have just $4,200 in liquid assets, and Hispanic families have $6,200 compared to $8,800 among White families.

> Racial gaps in liquid assets get smaller once we compare families within an income quintile, but they persist across the income spectrum.

**Figure 7:** Racial gaps in liquid assets exist within each income quintile
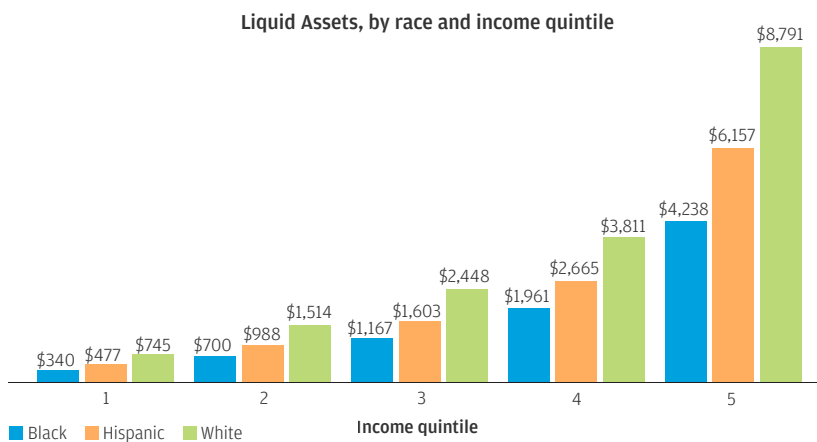
**Liquid Assets, by race and income quintile**



Note: Income quintile ranges are as follows: $5,000 to $20,082 for quintile 1; $20,082 to $33,314 for quintile 2; $33,314 to $49,500 for quintile 3; $49,501 to $78,743 for quintile 4; and above $78,743 for quintile 5. We define liquid assets as the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts.
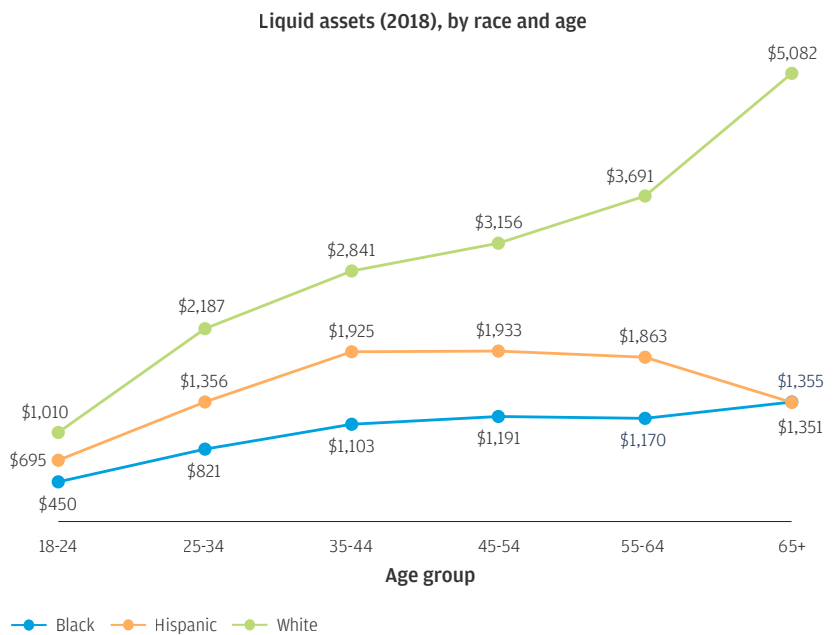
Source: JPMorgan Chase Insitute

**Figure 8:** Racial gaps in liquid assets persist across the income spectrum
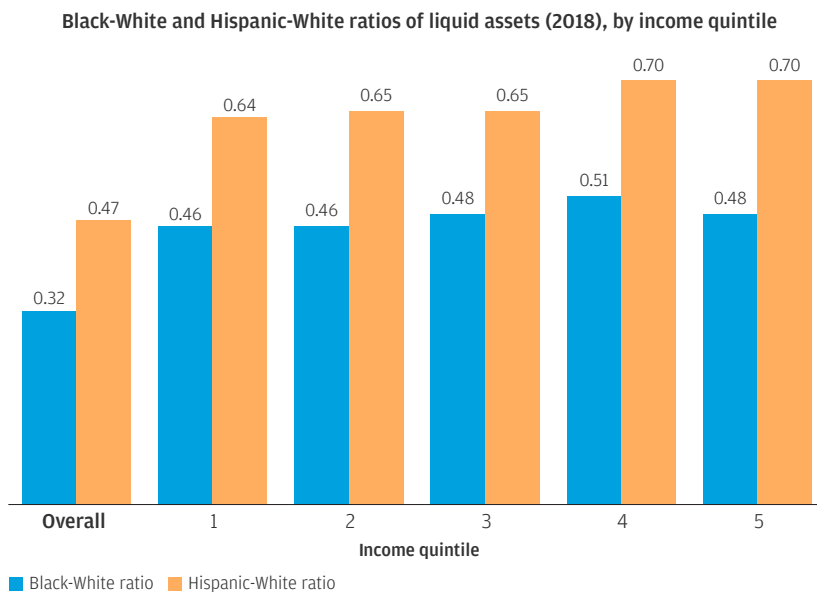
**Black-White and Hispanic-White ratios of liquid assets (2018), by income quintile**



Note: Income quintile ranges are as follows: $5,000 to $20,082 for quintile 1; $20,082 to $33,314 for quintile 2; $33,314 to $49,500 for quintile 3; $49,501 to $78,743 for quintile 4; and above $78,743 for quintile 5. We define liquid assets as the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts.

Source: JPMorgan Chase Insitute

Figure 9 and Figure 10 show the levels and racial gaps in liquid assets by age. As with take-home income, these results blend cohort differences and lifecycle dynamics. Figure 9 shows that for White families, liquid assets increase with age by five-fold from $1,010 among 18 to 24-year-olds to $5,082 among account holders who are 65 and older. Among Black families they increase just three-fold from $450 among 18 to 24-year-olds to $1,355 among the 65+ age group. Among Hispanic families, they fall with age after peaking among 35 to 44-year-olds.

Figure 10 clearly shows that the racial gap in liquid assets is largest among the 65+ age cohort, driven by the steeper rise in liquid assets with age among White families compared to Black and Hispanic families. Among families with a primary account holder in the 65+ age cohort, Black and Hispanic families have just 26 cents for every dollar held by White families.[9]

The steep gradient in liquid assets between the 55 to 64 and 65+ populations among White families could reflect families beginning to liquidate their assets in retirement by potentially selling a home or accessing retirement savings. We do not see nearly the same increase in liquid assets with age among Black families, and we observe a decline in liquid assets after age 55 among Hispanic families. This may be because Black and Hispanic families have fewer assets to liquidate and draw down during retirement. In fact, the 2016 Survey of Consumer Finances shows that White families are roughly twice as likely to have any retirement savings (60.4 percent) compared to Black families (33.6 percent) and Hispanic families (29.7 percent), and the conditional median value of their retirement savings is roughly three times

**Figure 9:** Liquid assets are highest among the 65+ age cohort among White and Black families but fall among the 65+ cohort among Hispanic families



Liquid assets (2018), by race and age

Note: We define liquid assets as the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts.
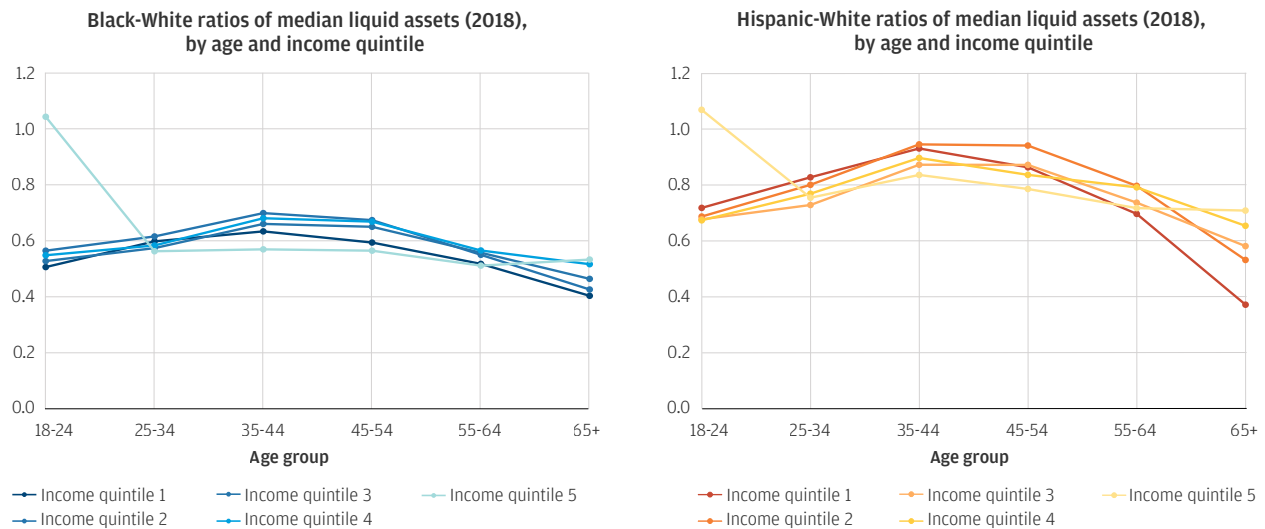
Source: JPMorgan Chase Insitute

**Figure 10:** Racial gaps in liquid assets are largest among the elderly
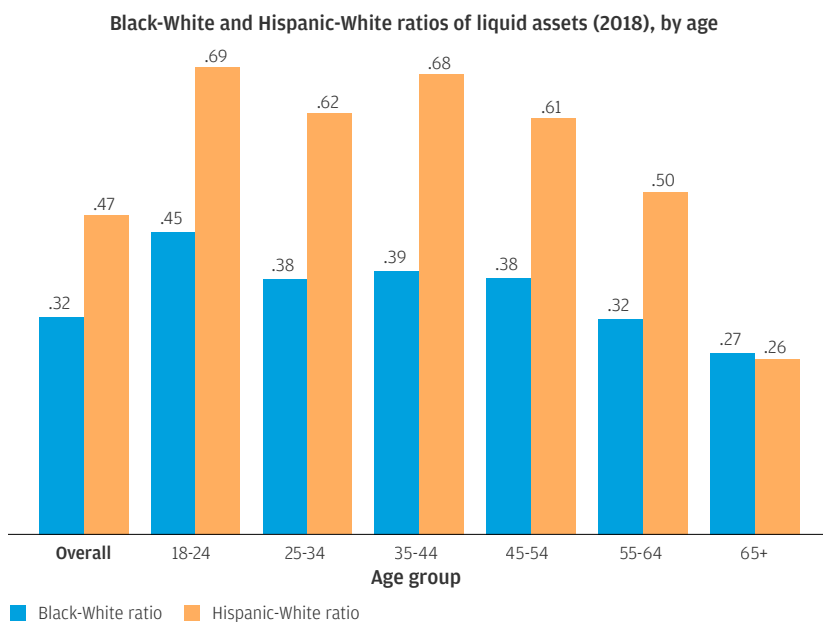


Black-White and Hispanic-White ratios of liquid assets (2018), by age

Note: We define liquid assets as the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts.

Source: JPMorgan Chase Insitute

larger for White families ($77,000) compared to Black families ($24,600) and Hispanic families ($22,600). This may additionally reflect differences across racial groups in how families organize their lives during retirement and the extent to which they rely on family caregiving (Pandya 2005).

In light of the stark variation in liquid assets by age and by take-home income, we examine whether racial gaps in liquid assets persist within each age-income segment

(see Figure 11). Age and income account for a large share of the racial gaps, increasing the Black-White ratio in liquid assets from 0.32 in the general population to parity among 18 to 24-year-olds in the highest income quintile, but still less than 0.7 in all other age-income segments. The Hispanic-White ratio of liquid assets, which starts from a higher base of 0.47, also increases within each age-income segment to parity among 18 to 24-year-olds in the highest income quintile.

Figure 11 reveals that, with the exception of 18 to 24-year-olds in the highest income quintile (who represent just 1 percent of Black and Hispanic 18 to 24-year-olds), racial gaps in liquid assets persist among families with the same income band and age cohort. The widest gap is among one of the most vulnerable groups—families with a primary account holder over 65 in the lowest income group. Within this age-income segment, Black and Hispanic families have less than 40 cents for every dollar held by White families.

**Figure 11:** Racial gaps in liquid assets persist within most age and income segments



Black-White ratios of median liquid assets (2018), by age and income quintile

Hispanic-White ratios of median liquid assets (2018), by age and income quintile

Note: Income quintile ranges are as follows: $5,000 to $20,082 for quintile 1; $20,082 to $33,314 for quintile 2; $33,314 to $49,500 for quintile 3; $49,501 to $78,743 for quintile 4; and above $78,743 for quintile 5. We define liquid assets as the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts.
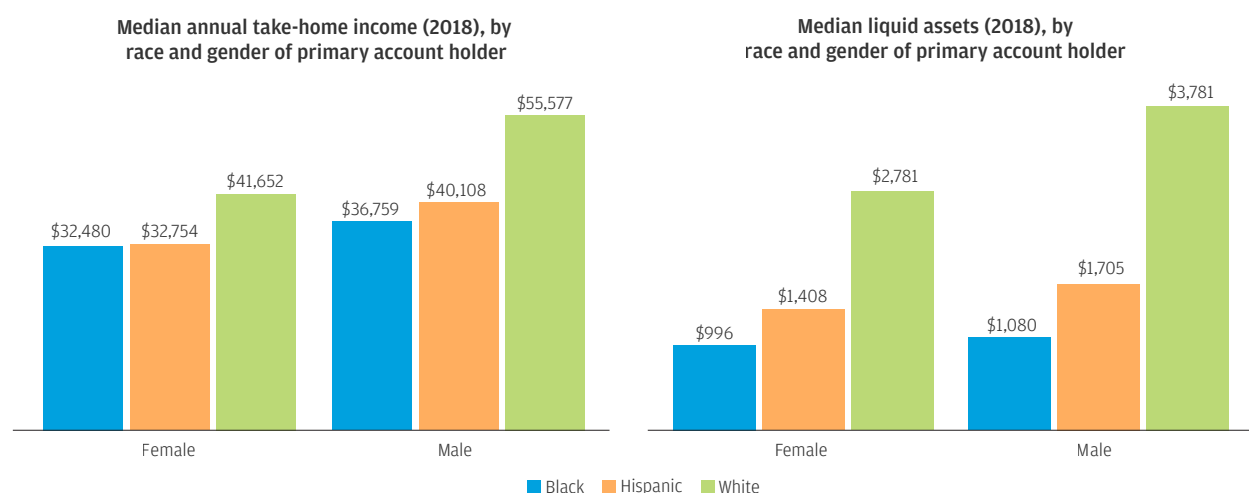
Source: JPMorgan Chase Insitute

# Finding
# Three
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Black women face the greatest gap in take-home income and liquid assets compared to White men, but racial gaps are larger among men than women.

We explore racial differences in take-home income and liquid assets by the gender of the primary account holder. Figure 12 shows the levels of take-home income and liquid assets by race and gender,

which clearly reveal both gender gaps and racial gaps within each gender. Recognizing that Black and Hispanic women must contend with inequality stemming from both their race and gender, it is relevant

to compare them to both White men, which conveys the full extent of inequality in financial outcomes they face, and White women, which isolates the racial gap they face controlling for gender (Figure 13).

**Figure 12:** Gender gaps in take-home income and liquid assets are larger for men than for women

### Median annual take-home income (2018), by race and gender of primary account holder

| | Black | Hispanic | White |
|---|---|---|---|
| Female | $32,480 | $32,754 | $41,652 |
| Male | $36,759 | $40,108 | $55,577 |

### Median liquid assets (2018), by race and gender of primary account holder

| | Black | Hispanic | White |
|---|---|---|---|
| Female | $996 | $1,408 | $2,781 |
| Male | $1,080 | $1,705 | $3,781 |

Black   Hispanic   White

Note: Take-home income reflects the income after taxes and other payroll deductions that is deposited into one's checking account, which includes labor income, government benefits, tax refunds, capital and retirement income, ATM deposits, check deposits, and other electronic deposits. We define liquid assets as the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts. Gender is the gender of the checking account's primary account holder.

Source: JPMorgan Chase Insitute

When using the outcomes of White men as the benchmark, Black and Hispanic women face the greatest inequality in take-home income and liquid assets. Black and Hispanic women earn just 58 and 59 cents, respectively, for every dollar earned by White men. Similarly, for every dollar held by White men, Black women have just 26 cents and Hispanic women have 37 cents.
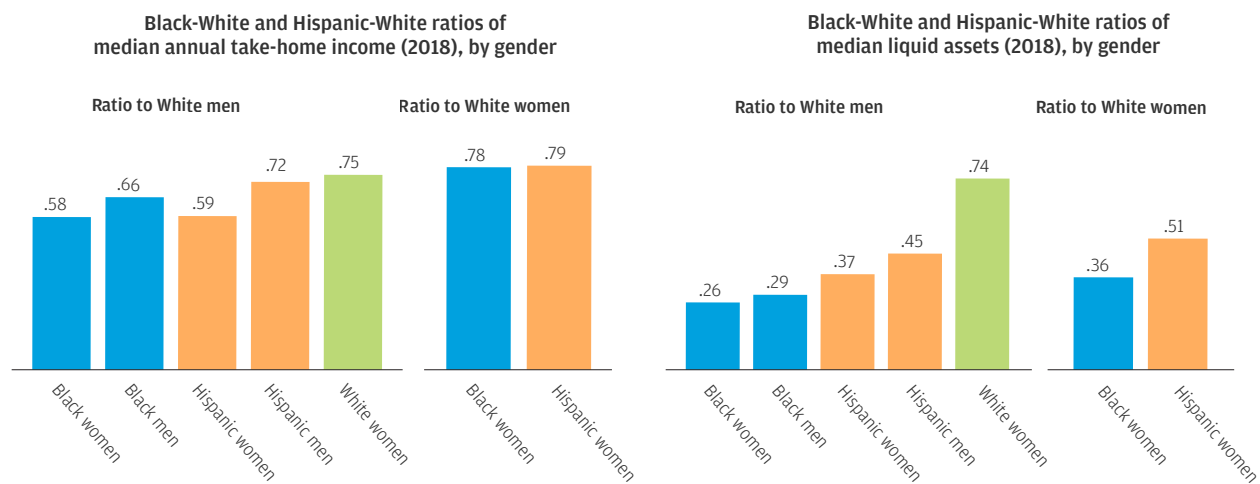
When we focus on racial gaps within each gender, we see that racial gaps in take-home income and liquid assets are larger for families with a male primary account holder versus a female primary account holder. For example, Black men earn 66 percent of what White men earn, while Black women earn 78 percent of what White women earn. Black men have 29 percent of the liquid assets held by White men, while Black women have 36 percent of the liquid assets of White women. Similarly, Hispanic-White gaps in take-home income and liquid assets are larger for men than for women.

This is because the gender gaps in take-home income and liquid assets are much larger for White families compared to Black and Hispanic families. Accounts held by White women have take-home income that is 75 percent of that of White men. In contrast Black women earn 88 percent of the take-home income of Black men, and Hispanic women earn 82 percent of the take-home income of Hispanic men. Black women have 92 percent of the liquid assets of Black men, and Hispanic women have 83 percent of the liquid assets of Hispanic men. In comparison, White women have just 74 percent of the liquid assets of White men.

**Figure 13:** Black women face the most inequality in take-home income and liquid assets compared to White men, but racial gaps are larger among men than women



Black-White and Hispanic-White ratios of median annual take-home income (2018), by gender

Black-White and Hispanic-White ratios of median liquid assets (2018), by gender

Note: Take-home income reflects the income after taxes and other payroll deductions that is deposited into one's checking account, which includes labor income, government benefits, tax refunds, capital and retirement income, ATM deposits, check deposits, and other electronic deposits. We define liquid assets as the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts. Gender is the gender of the checking account's primary account holder.

Source: JPMorgan Chase Insitute

> For every dollar held by White men, Black women have just 26 cents and Hispanic women have 37 cents.

Others have documented the existence of larger racial gaps in financial outcomes among men than women (e.g. Chetty et al. 2019). There could be many reasons for this, including smaller racial differences among women compared to men (and in some cases more favorable outcomes for women than men within racial groups) in labor force participation (BLS 2019), rates of unemployment (Kijakazi 2019), education attainment (e.g. McDaniel et al. 2011), and incarceration (Western 2002; Sykes and Maroto 2016).

# Finding

# Four

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Across geographies, the financial outcomes of Hispanic families vary the most, while the financial outcomes of Black families vary the least. Black-White gaps in financial outcomes are largest in Louisiana, while Hispanic-White gaps are largest in Florida.

We next examine racial gaps in take-home income and liquid assets in each of the three states (FL, GA, LA). Within Florida, we further break out our results for the Miami, Orlando, and Tampa metro areas, as well as for the rest of the sample in Florida outside these metro areas.[10] Similarly, we break out our results for Atlanta and the rest of Georgia, and for New Orleans, Baton Rouge, and the rest of Louisiana.

We find that levels of take-home income and liquid assets vary considerably across these geographies

(Figure 14). Across geographies, take-home incomes and liquid assets vary the most among Hispanic families and least among Black families. For example, among Hispanic families, there is a two-fold spread between Hispanic families in Orlando, who have a median of $1,158 in liquid assets compared to Hispanic families in Baton Rouge, who have $2,370 in liquid assets. By contrast, among Black families liquid assets vary by just 40 percent from a low of $906 in Tampa to a high of $1,269 in Miami. Liquid assets of White families also

vary by geography but less so than for Hispanic families, with $2,388 in liquid assets in Tampa compared to $4,096 in Baton Rouge (72 percent higher).

Across geographies, take-home incomes and liquid assets vary the most among Hispanic families and least among Black families.
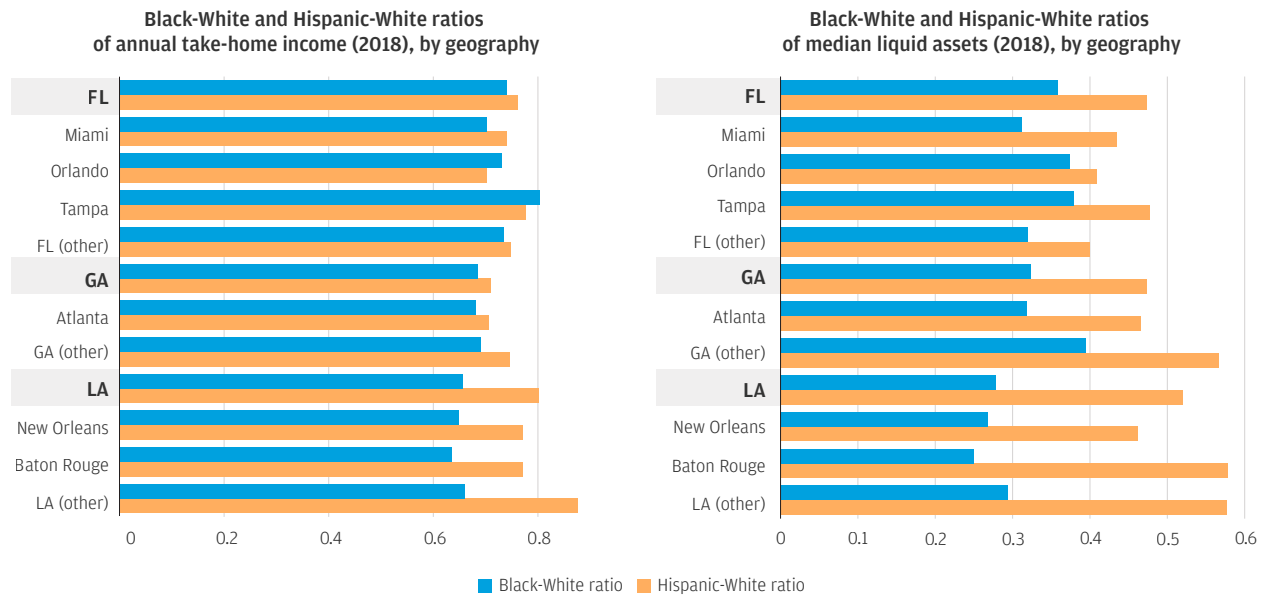
**Figure 14:** Levels of take-home income and liquid assets vary across geographies especially among White and Hispanic families
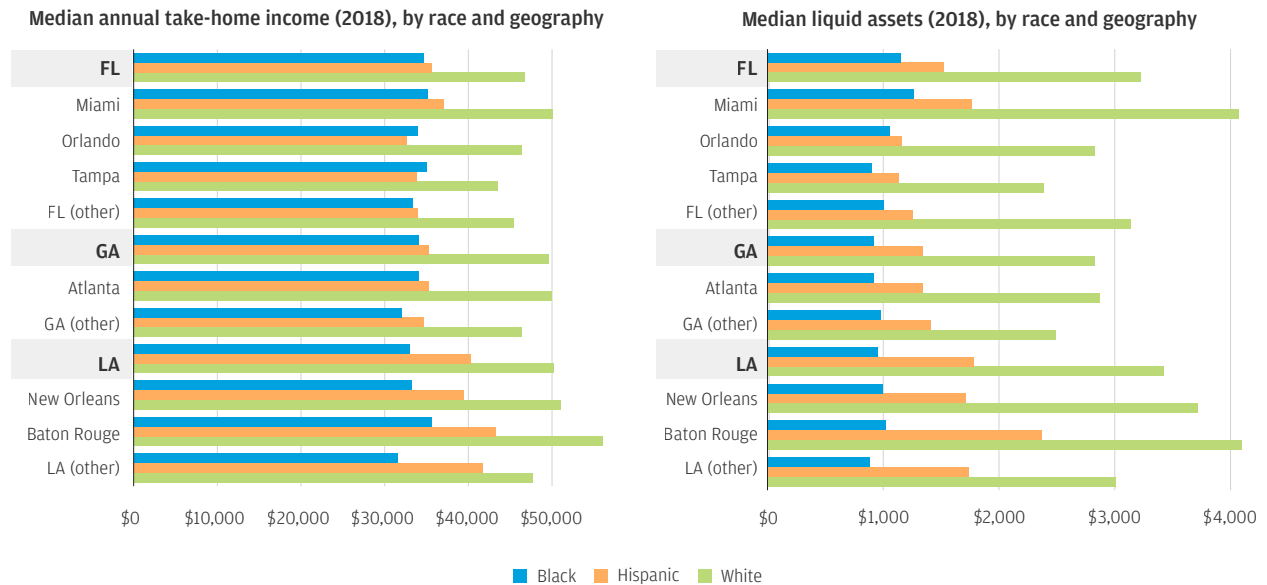
### Median annual take-home income (2018), by race and geography



### Median liquid assets (2018), by race and geography



■ Black  ■ Hispanic  ■ White

Note: Take-home income reflects the income after taxes and other payroll deductions that is deposited into one's checking account, which includes labor income, government benefits, tax refunds, capital and retirement income, ATM deposits, check deposits, and other electronic deposits. Liquid assets is the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts. Cities refer to CBSAs (e.g., Miami refers to the Miami-Fort Lauderdale-West Palm Beach CBSA).

Source: JPMorgan Chase Insitute

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**Figure 15:** Black-White gaps in take-home income are largest in Baton Rouge, LA, while Hispanic-White gaps are largest in Orlando, FL

### Black-White and Hispanic-White ratios of annual take-home income (2018), by geography



### Black-White and Hispanic-White ratios of median liquid assets (2018), by geography



■ Black-White ratio  ■ Hispanic-White ratio

Note: Take-home income reflects the income after taxes and other payroll deductions that is deposited into one's checking account, which includes labor income, government benefits, tax refunds, capital and retirement income, ATM deposits, check deposits, and other electronic deposits. Liquid assets is the sum of balances in one's checking, prepaid debit cards, savings, money market, and certificates of deposit accounts. Cities refer to CBSAs (e.g., Miami refers to the Miami-Fort Lauderdale-West Palm Beach CBSA).

Source: JPMorgan Chase Insitute

Figure 15 shows the racial gaps in take-home income and liquid assets across geographies. We find that racial gaps in financial outcomes exist across all three states and six cities, but there is more geographic heterogeneity in racial gaps in liquid assets than in take-home income. Notably the Black-White ratio of liquid assets ranges from a low of 0.25 in Baton Rouge, LA to a high 0.39 in the rest of Georgia (i.e., Georgia excluding Atlanta). The Hispanic-White ratio of liquid assets ranges from a low of 0.40 in the rest of Florida (i.e., Florida excluding Miami, Orlando, and Tampa) to a high of 0.58 in Baton Rouge, LA. We see a similar ranking across geographies in terms of the racial gap in take-home income though within a smaller top-to-bottom range. The lowest Black-White ratio of take-home income is in Baton Rouge (0.63), while the lowest Hispanic-White gap in take-home income is in Orlando (0.70).

The large Black-White gaps in Louisiana are generally consistent with evidence of lower liquid assets among Black families in Louisiana relative to Florida and Georgia both in absolute terms and compared to White families in those states (Prosperity Now 2018).[11] In our sample the larger Black-White gaps in Louisiana also appear to be driven by disproportionately higher take-home incomes and liquid assets among White families in Louisiana. These geographic differences underscore the role that local conditions can play in exacerbating or mitigating racial gaps in financial outcomes.

The wider range in financial outcomes among Hispanic families across geographies and larger Hispanic-White gaps in Florida may be connected to their nuanced history of migration from different countries and their experiences and economic outcomes in the United States. For example, Cubans represent the largest share of the Hispanic population in Miami (43 percent), whereas Puerto Ricans are the largest sub-group in Orlando (48 percent) and Tampa (34 percent), and Mexicans represent the largest share of the Hispanic population in Atlanta (59 percent) (Pew Research Center 2016). Socio-economic status of Hispanic groups differs substantially by country of origin: among these three groups Puerto Ricans are more likely to be living in poverty (23 percent) than Mexicans (20 percent) and Cubans (16 percent) (Pew Research Center 2019).

In summary, racial gaps in liquid assets are larger than gaps in take-home income and persist within income, age, gender, and geographic segments.

Next, we examine the extent to which there are differences across racial groups in terms of how families respond to major negative and positive cash-flow events, namely involuntary job loss and the arrival of the tax refund. We explore whether racial gaps in liquid assets account for such differences.

Geographic differences underscore the role that local conditions can play in exacerbating or mitigating racial gaps in financial outcomes.

# Finding
# Five
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After involuntary job loss, Black and Hispanic families cut their everyday spending more so than White families, differences that are explained by racial gaps in liquid and financial asset buffers.

Following the methodology in Ganong and Noel (2019), we examine the path of spending for families who experience involuntary job loss and receive unemployment insurance (UI). In this report, we examine whether this spending response differs by race. Unemployment insurance receipt is a particularly useful event to study because it identifies a significant shock to family income, the loss of one's job through no fault of one's own. Specifically, we examine a sample of 40,000 families who have a Chase checking account for the six months prior to and ten months after receiving direct deposit of a UI payment sometime between 2013 and 2018. UI recipients yield a sample that skews towards slightly lower liquid assets among White families (see Figure 33 in Appendix). Thus, this sample may underestimate racial gaps relatively more than our general sample.

As illustrated in Table 2 and Figure 16 below, the prevalence of UI receipt and the consequences for income of involuntary job loss are similar across racial groups. UI recipiency rates are slightly higher for Black and Hispanic families both among the overall population of FL, GA, and LA and in our sample. In addition, because Black and Hispanic families' income starts from a lower base, UI benefits replace a higher share of their income than for White families.

**Table 2:** The household UI recipiency rate and employment experiences after UI are similar across races

|  |  | Black | Hispanic | White |
|---|---|---|---|---|
| 3-state (public benchmark) | Individual UI recipiency rate* | 0.6% | 0.3% | 0.2% |
|  | Unemployment rate** | 6.9% | 3.7% | 3.5% |
|  | Mean unemployment duration (weeks)** | 31 | 29 | 28 |
| Bank sample | Household UI recipiency rate*** | 1.1% | 1.3% | 0.8% |
|  | Mean completed UI duration (weeks)*** | 15 | 15 | 15 |

Note:
* In the 3-state (public benchmark) sample, UI recipiency rate is measured as share of the adult population in FL and LA that received unemployment insurance (UI) in 2017 according to the Bureau of Labor Statistics. (GA is excluded from this calculation due to data quality issues.)
** Unemployment rate and mean unemployment duration are measured using CPS data from GA, FL, and LA during the years 2015 through 2018; we only include individuals in the CPS who have received direct deposit income.
*** In the bank sample, UI recipiency rate is the share of families present in the sample in 2017 who received direct deposit UI that year, and mean completed UI duration is the mean number of weeks UI recipients are observed receiving direct deposited UI.

Source: JPMorgan Chase Institute and BLS

Figure 17 reveals the path of labor income and UI receipts in the six months leading up to and ten months after the arrival of the first UI payment, which occurs in month zero. Notably, White families' labor income starts from a higher base prior to job loss, roughly $2,600 compared to just over $1,900 for Black families and $2,000 for Hispanic families replicating a comparable earnings gap among UI recipients that we documented in Finding 1. Income falls precipitously before the first month of UI receipt reaching a trough in the month prior to UI receipt, when job loss is most likely to occur, and remains stable after the first UI receipt but at a lower base. After the first UI receipt, in each month, a subset of individuals may be returning to work (and therefore losing UI) in each month up until UI expires entirely, generally after twelve weeks in Florida, fourteen weeks in Georgia, and twenty-six weeks in Louisiana.[12]

> Because Black and Hispanic families' income starts from a lower base, UI benefits replace a higher share of their income than for White families.

**Figure 16:** The magnitude and duration of UI benefits are similar across racial groups
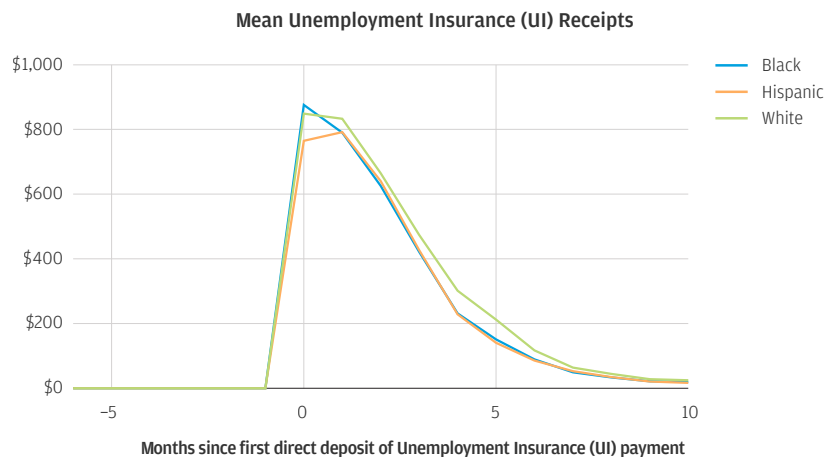
**Mean Unemployment Insurance (UI) Receipts**



Months since first direct deposit of Unemployment Insurance (UI) payment

Note: Unemployment Insurance (UI) refers to UI payments directly deposited into the checking account.

Source: JPMorgan Chase Insitute

**Figure 17:** Labor income falls precipitously before receipt of UI but from a higher baseline for White families
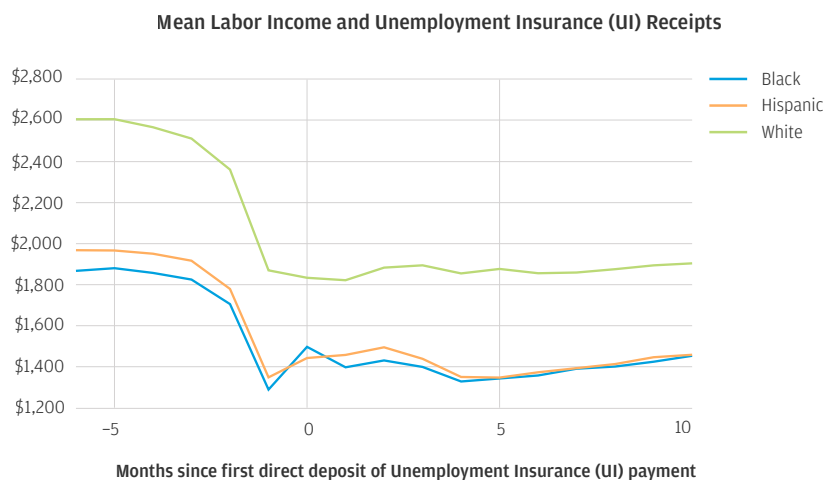
**Mean Labor Income and Unemployment Insurance (UI) Receipts**



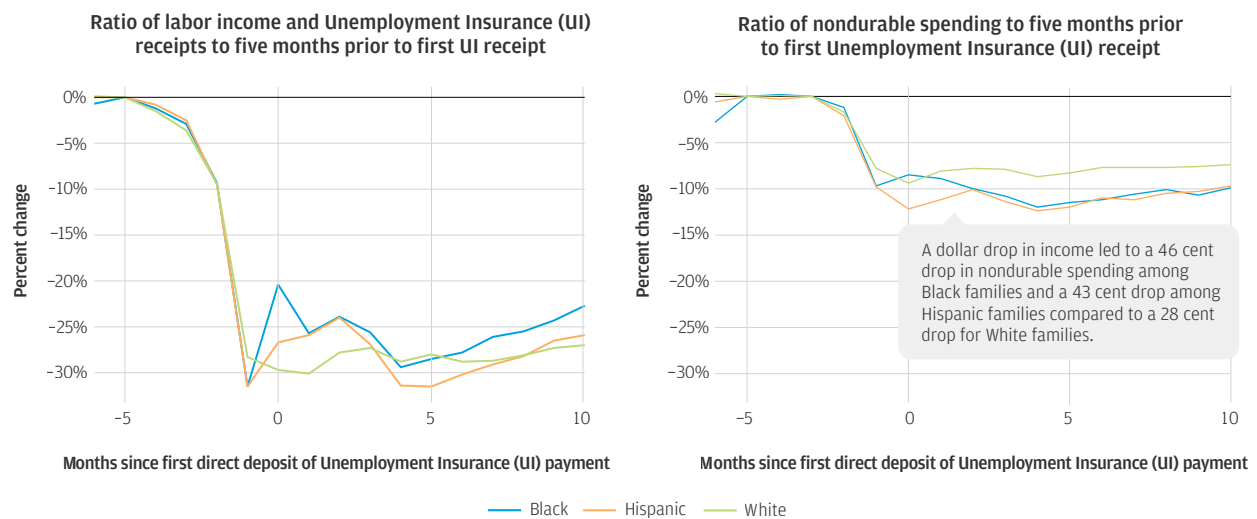Months since first direct deposit of Unemployment Insurance (UI) payment

Note: Unemployment Insurance (UI) refers to UI payments directly deposited into the checking account. Labor income only includes inflows to the checking account identifable as labor income.

Source: JPMorgan Chase Insitute

Figure 18 shows the change in income on the left and non-durable spending on the right relative to five months before the first UI check (baseline). Spending is measured from debit and credit card transactions, cash withdrawals, and electronic transactions captured through the bank account. Examples of nondurable spending include groceries, food away from home, fuel, utilities, haircuts, clothing, medical co-pays, and payments at drugstores.[13] The left panel shows that across racial groups income drops by roughly 30 percent one month before the first UI check, likely when most families lost a job. In month zero, when families receive their first UI check, income increases for Black and Hispanic families but not White families, likely suggesting that UI replaces a larger share of lost income for Black and Hispanic families than White families.

The right panel of Figure 18 shows that non-durable spending falls sharply, but only by 30 to 40 percent of the income drop. We can see that spending drops the least for White families (roughly 9 percent) and most for Hispanic families (roughly 12 percent). Black families have a smaller drop in spending at first, and their spending momentarily spikes when the first UI payment arrives before falling again by roughly 11 percent in months four through six.

**Figure 18:** After involuntary job loss, Black and Hispanic families cut their everyday spending more so than White families



**Ratio of labor income and Unemployment Insurance (UI) receipts to five months prior to first UI receipt**

**Ratio of nondurable spending to five months prior to first Unemployment Insurance (UI) receipt**

A dollar drop in income led to a 46 cent drop in nondurable spending among Black families and a 43 cent drop among Hispanic families compared to a 28 cent drop for White families.

Months since first direct deposit of Unemployment Insurance (UI) payment

Months since first direct deposit of Unemployment Insurance (UI) payment

— Black  — Hispanic  — White

Note: Unemployment Insurance (UI) refers to UI payments directly deposited into the checking account, labor income only includes inflows to the checking account identifiable as labor income, and non-durable spending refers to expenditures on non-durable goods from the checking account and using Chase credit cards. The ratio is relative to month -5 (5 months before first UI payment).

Source: JPMorgan Chase Insitute

> Racial differences in the spending response to job loss are both statistically and economically significant.

We translate this spending response into a marginal propensity to consume (MPC) by dividing the dollar change in average spending in the first twelve months of unemployment (months -1 to 10) relative to five months prior to the first UI check by the dollar change in income over the same reference period. We find an MPC of 0.28 for White families compared to 0.46 for Black families and 0.43 for Hispanic families. Put differently, a dollar drop in income led to 46 cent drop in nondurable spending among Black families and a 43 cent drop among Hispanic families compared to 28 cent drop for White families, differences relative to White families that are statistically significant.

These racial differences in MPCs are both statistically and economically significant. For three hypothetical families who experience the same drop in monthly income of $500 each, the differences in the observed MPC would imply that Black and
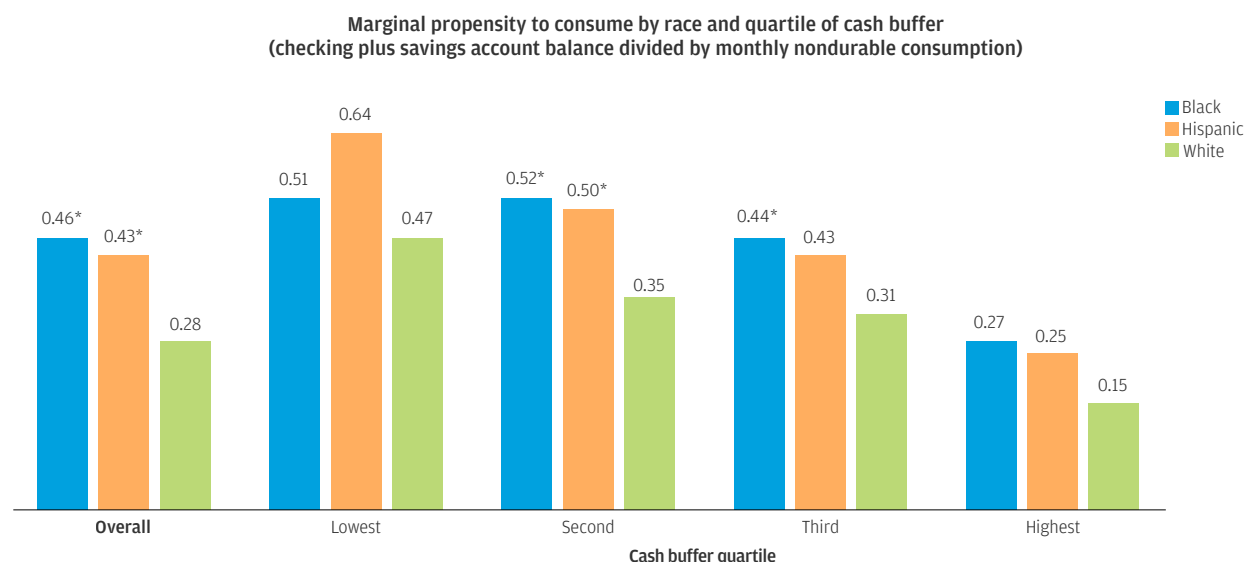
Hispanic families cut their monthly non-durable consumption by $90 and $75 more than White families, respectively, which could represent one less grocery store visit per month.

As we have previously shown, liquid assets mitigate a family's drop in consumption after job loss (Farrell et al. 2016). Next we explore whether racial differences in liquid assets explain racial differences in marginal propensity to consume. In this analysis, we focus on balances in the checking and savings account as a measure of cash on hand to cover expenses with no transaction costs. Figure 19 shows the MPC by race and by the quartile of checking and savings balances divided by monthly nondurable consumption in the baseline period (between six and twelve months prior to the first UI check). We will refer to this measure as the cash buffer. The MPC decreases monotonically with the size of the cash buffer, but within each quartile of cash buffer, Hispanic families exhibit a higher MPC than White families. The same is true for Black families in quartiles two through four. In other words, even among families with similar levels of cash buffer, Black and Hispanic families reduce their spending to a greater extent than White families when they lose a job. That said, after controlling for the cash buffer, racial gaps in MPC are smaller but persist.

**Figure 19:** Racial gaps in marginal propensity to consume are smaller after controlling for cash buffer



**Marginal propensity to consume by race and quartile of cash buffer**
**(checking plus savings account balance divided by monthly nondurable consumption)**

Note: * signifies statistically significantly different from White at the 95-percent level. The upper bounds of the quartiles are, to 0.27 months of expenditure for the first quartile; 0.27 to 0.62 months of expenditure for the second quartile; 0.62 to 1.67 months of expenditure for the third quartile; and above 1.67 months of expenditure for the fourth quartile.

Source: JPMorgan Chase Insitute

One challenge with this analysis is that, as shown in Box 1, racial differences exist in how families distribute their savings across account types. Liquid assets represent a small share of total financial assets, especially for White families, consequently, checking and savings account balances may represent a larger share of a family's cash reserves for Black and Hispanic families than for White families. This could cause us to inaccurately sort families into cash buffer quartiles.

We address this challenge by leveraging the Survey of Consumer Finances to impute separately by race total liquid assets and financial assets for a given level of checking account balance. For example, for households with checking balances near the national median of $2,000, the median White household has financial assets of $47,000, while the median Black household has $19,000 and the median Hispanic household has $7,100. These estimates imply that if we want to make comparisons across races between families with the same total financial assets, then we should compare Black and Hispanic families with larger checking balances to White families with smaller checking balances. For example, if we want to find families with financial assets near the national median of $36,000, the estimates imply that we should compare White families with $2,100 in their checking account to Black families with $3,400 and Hispanic families with $9,600.

Figure 20 shows the Black-White and Hispanic-White differences in the MPC change when controlling for imputed liquid asset buffer (imputed liquid assets divided by baseline nondurable spending) and imputed financial asset buffer (imputed financial assets divided by baseline nondurable spending). We consider both measures, recognizing that liquid assets are the first line of defense, and financial assets, which include stocks, and retirement accounts, may be more difficult to liquidate.[14]

When controlling for imputed liquid asset buffers, Black-White and Hispanic-White differences in the MPC are smaller and no longer statistically significant. They drop further and continue to be insignificantly different from zero when we control for imputed financial asset buffers. In other words, our findings suggest that liquid and financial asset buffers appear to play key roles in helping families smooth consumption after job loss. Racial differences in liquid and financial asset buffers can account, in a statistical

sense, for why Black and Hispanic families cut their consumption to a greater extent than White families do when they lose a job. However, we caution that this statistical finding may not reflect a causal relationship. It relies on comparing the consumption response of households with different levels of assets, who may differ on other dimensions as well.

Next, we examine how families respond to a positive cash-flow event, the arrival of the tax refund.

**Figure 20:** Controlling for imputed liquid assets and financial asset buffers, racial gaps are no longer statistically significant
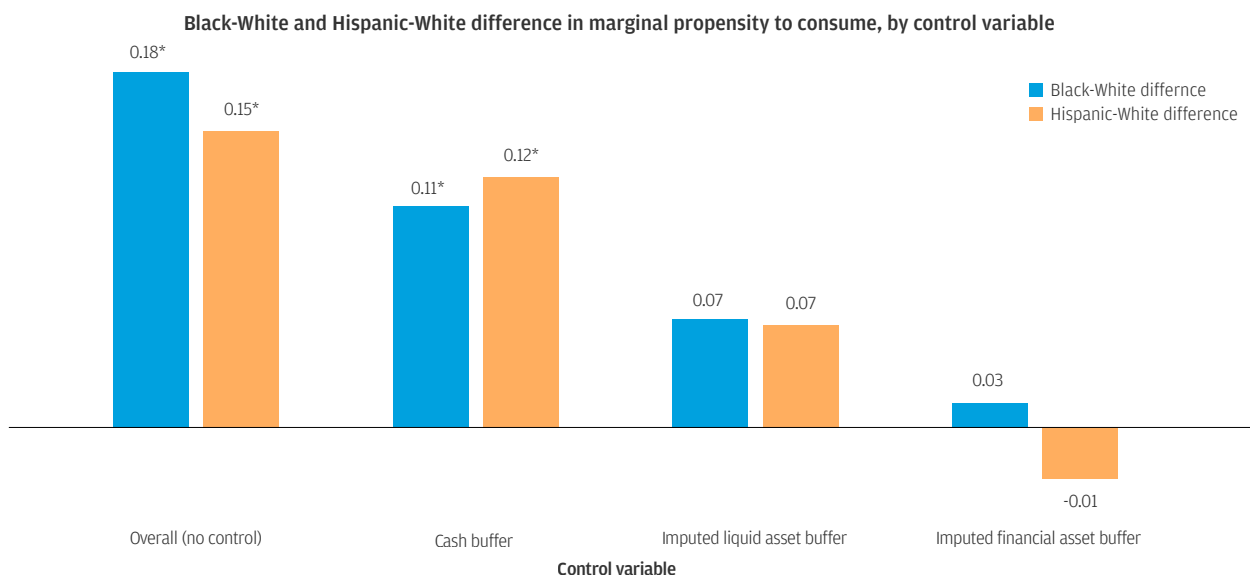


Black-White and Hispanic-White difference in marginal propensity to consume, by control variable

Note: Cash buffer is the ratio of (checking account balance + savings account balance) to monthly nondurable expenditure, imputed liquid asset buffer is the ratio of imputed liquid assets to monthly nondurable expenditure, and imputed financial asset buffer is the ratio of imputed financial assets to monthly nondurable expenditure. * indicates that the Black-White or Hispanic-White difference in marginal propensity to consume is statistically significantly different from 0 at the 95% level.

Source: JPMorgan Chase Insitute

# Finding
# Six

—

Upon receipt of a tax refund, Black and Hispanic families increase their expenditures more so than White families, differences that are explained by racial gaps in liquid and financial asset buffers.

Following the methodology in Farrell et al. (2019) and McDowall (2020), we examine daily financial outcomes among 297,000 families who received tax refunds totaling at least $100 in 2017.[15] Whereas UI represents a social insurance program to help families when they experience job loss, the tax refund includes a mix of tax credits, which boost after-tax income but are only accessible through the tax refund, and the repayment of excess tax withholdings, which do not boost after-tax income.

> Black and Hispanic families receive larger tax refunds than White families, both in absolute terms and relative to typical financial flows and assets.

Additionally, unlike UI receipt, the arrival of the tax refund is a different event for different racial groups in that the tax refund represents a larger positive cash-flow event for Black and Hispanic families than for White families in both absolute and relative terms (Table 3). The median refund size is larger in absolute terms for Black ($2,602) and Hispanic families ($2,489) compared to White families ($2,041). But it is also dramatically larger for Black and Hispanic families relative to their typical financial flows and assets. Whereas the typical tax refund represents roughly 4 percent of annual income and roughly two weeks' worth of baseline expenditures for White families, it represents 6 percent of annual income and more than three weeks' worth of expenditures

for Black and Hispanic families. In addition, the tax refund is a larger cash infusion for Black and Hispanic families relative to their baseline cash position in checking and savings accounts. For the median Black and Hispanic family, the tax refund is 210 percent and 157 percent of their checking and savings account balance, respectively; the tax refund amounts to just 67 percent of checking and savings balance for the median White family. Finally, we observe that Black and Hispanic families tend to file and thus receive their tax refund earlier in the year (Figure 21). In fact, 51 percent of Black families and 51 percent of Hispanic families received their refund by the first week of March in 2017, compared to 43 percent of White families.

**Table 3:** The tax refund represents a larger positive cash-flow event for Black and Hispanic families than for White families

| Race | Median refund amount | Median annual take-home income | Median tax refunds as percent of take-home income | Median checking account + savings account balance | Median tax refunds as percent of checking + savings account balance | Median weekly expenditures | Median tax refunds as percent of weekly expenditures |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Black | $2,602 | $40,382 | 6% | $985 | 210% | $711 | 337% |
| Hispanic | $2,489 | $42,057 | 6% | $1,341 | 157% | $743 | 318% |
| White | $2,041 | $56,731 | 4% | $2,959 | 67% | $1,051 | 207% |

Note: All figures are for 2017 and reflect financial outcomes in the baseline period (thirty days prior to and ninety days after the arrival of the tax refund).

Source: JPMorgan Chase Institute

Next we estimate the relationship between tax refund receipt and family financial outcomes. Tax refunds represent a large, salient cash-flow event that households are largely aware of in advance of receipt. While families have a degree of control over how they set their tax deductions and when they file their taxes, they cannot perfectly control or predict when the refund is deposited in their accounts. We leverage this uncertainty and variability in timing of the tax refund deposit to disentangle the family's expenditure response to the tax refund from regular variation in spending patterns. Specifically, we create an event study to examine the change in expenditures in the thirty days prior to and ninety days after the arrival of the tax refund, controlling for family, day of the week, day of the month, first weekday of month, holiday, and post-holiday fixed effects (following McDowall 2020).

We examine how families allocate the tax refund across three mutually exclusive financial outcomes: their expenditures, comprising of bill payments, purchases, and cash, check or electronic withdrawals directly out of the checking account; their net savings, defined as net transfers from the checking account to other Chase or non-Chase savings-oriented accounts; and their checking account balance.

**Figure 21:** Black and Hispanic families receive their tax refunds earlier in the year than White families



**Timing of tax refunds, by race**
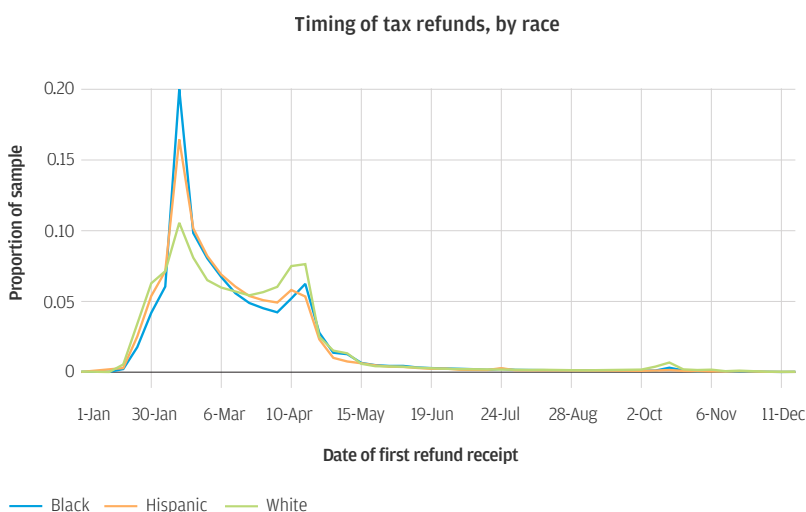
Note: The date of first refund receipt is the date in 2017 on which we first observe a tax refund directly deposited into a family's checking account. This tax refund can be at the federal, state, or municipal level.
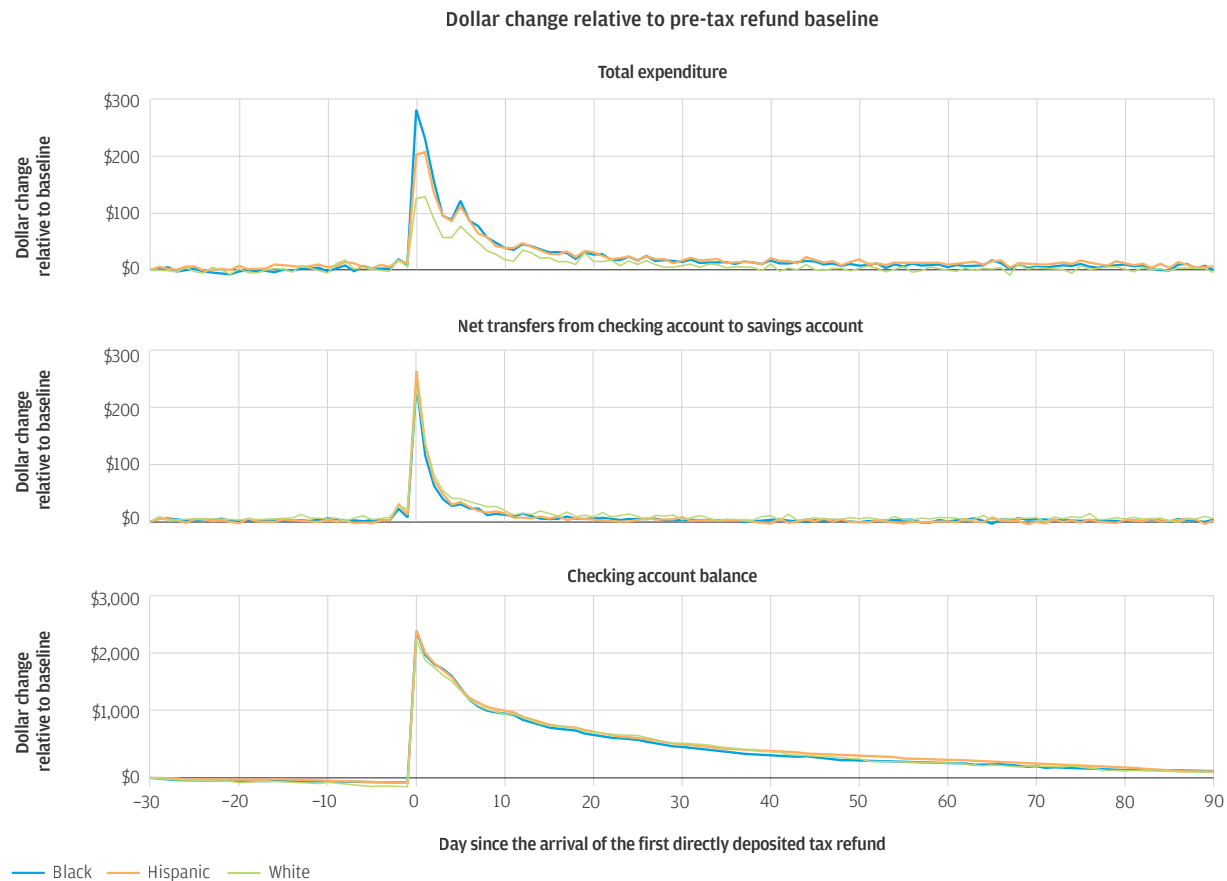
Source: JPMorgan Chase Insitute

We observe each of the three outcome variables at the daily frequency and estimate the change in each outcome relative to the level in the baseline period (between one and six months prior to the arrival of the tax refund).

Figure 22 clearly demonstrates that, across all racial groups, expenditures, net transfers to savings, and the checking account balances increase dramatically the day the tax refund arrives. The increases in expenditures are especially large for Black and Hispanic families. In the first week after the tax refund arrives, expenditures increase by $1,074 among Black families and $914 among Hispanic families, compared to $624 among White families (Figure 22). By thirty days after the arrival of the tax refund, Black families increased their expenditures by $1,883 and Hispanic families $1,625, $688, and $430, respectively, than White families ($1,195).

**Figure 22:** Expenditures, net savings, and checking account balances increase dramatically the day the tax refund arrives

### Dollar change relative to pre-tax refund baseline



**Total expenditure**

**Net transfers from checking account to savings account**

**Checking account balance**

Day since the arrival of the first directly deposited tax refund

— Black　— Hispanic　— White

Note: Expenditures are total expenditures out of a family's checking account and (if applicable) Chase credit card. Net savings are net transfers from a family's checking account to its savings account. Checking account balance is the end-of-day checking account balance. For each of these measures, a family's "baseline" value is defined as the average from 182 days prior to the tax refund receipt through thirty days prior to the tax refund receipt.

Given that the size of the refund varies by race, it is important to calibrate these financial responses relative to the tax refund, which we do in Figure 23. For every dollar of tax refund received, over the following month White families had spent 38 cents, while Hispanic families had spent 49 cents, and Black families had spent 52 cents.

These racial differences in MPC are not just statistically significant but also economically significant. They imply that if a hypothetical Black family, Hispanic family, and White family each received a $3,000 tax refund, expenditures in

the month after the tax refund would have increased by $420 and $330 more for the Black and Hispanic families, respectively, compared to White families. These racial differences in expenditure increases are on the order of magnitude of a new refrigerator. Below we demonstrate that Black and Hispanic families did, in fact, increase their durable purchases considerably.

The second and third panels of Figures 22 and 23 illustrate the balance of the tax refund that has not been spent. Families either left the money in the checking account or they transferred
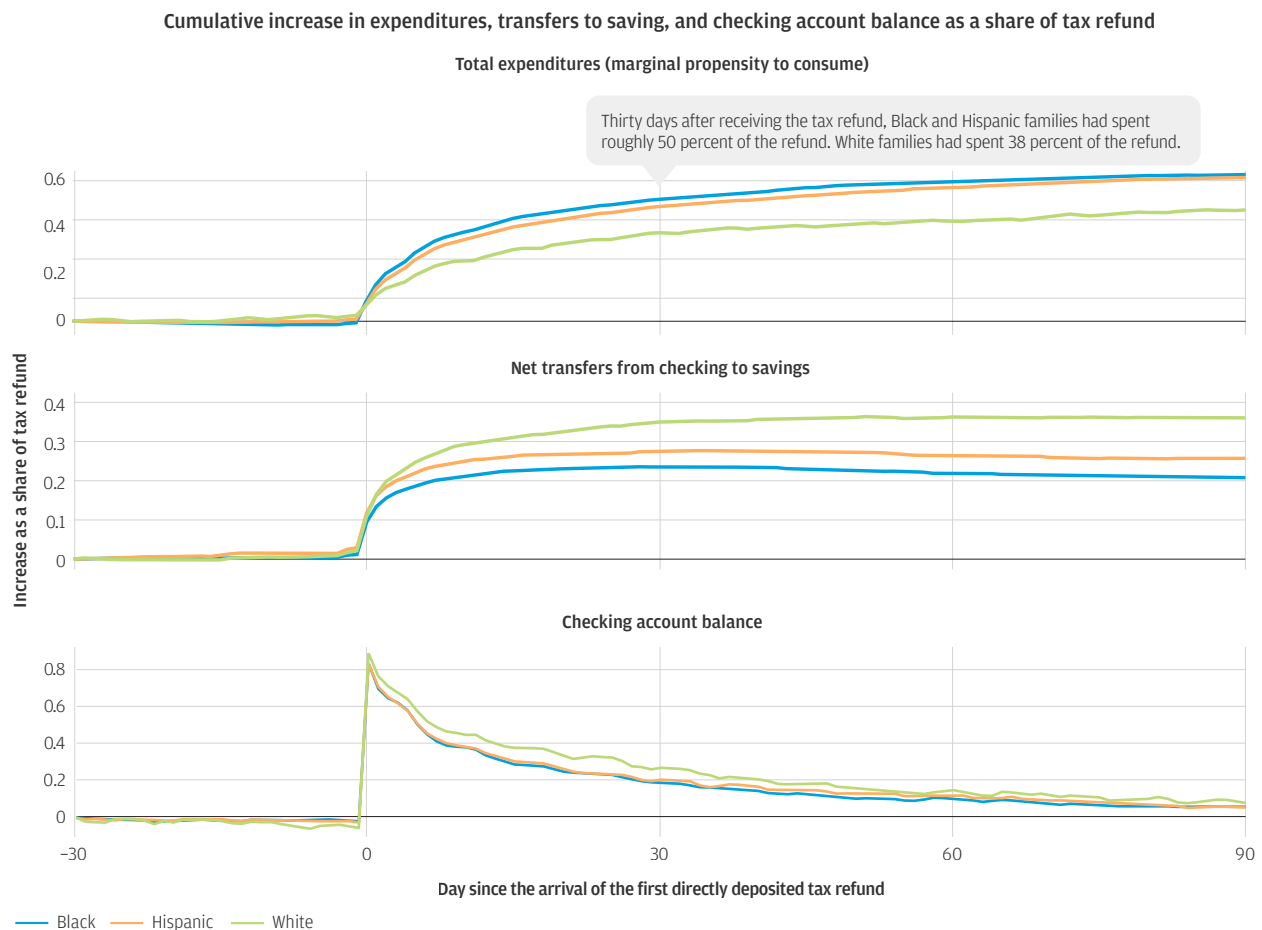
it to potentially higher yielding deposit or investment accounts. In absolute terms, transfers to savings increase the most for Hispanic families, but White families transfer the largest share of the tax refund to savings and keep the largest share in their checking account. One interpretation of these findings is that Black and Hispanic families under-consume during the year and catch up on consumption when their tax refund arrives. In contrast, White families use tax refunds more to boost their savings and pay down debt.

**Table 4:** In the week and month after the arrival of the tax refund, expenditures increase more dramatically for Black and Hispanic families than for White families

| | Average increase in expenditures in week after refund | | Increase in expenditures in thirty days after refund | |
|---|---|---|---|---|
| Race | Dollar | Percent | Dollar | Percent of tax refund (MPC) |
| Black | $1,074 | 187% | $1,883 | 52% |
| Hispanic | $914 | 149% | $1,625 | 49% |
| White | $624 | 77% | $1,195 | 38% |

**Figure 23:** One month after the tax refund arrives, White families have spent 38% of the tax refund, while Hispanic families have spent 49% and Black families have spent 52%



Cumulative increase in expenditures, transfers to saving, and checking account balance as a share of tax refund

Total expenditures (marginal propensity to consume)

Thirty days after receiving the tax refund, Black and Hispanic families had spent roughly 50 percent of the refund. White families had spent 38 percent of the refund.

Net transfers from checking to savings

Checking account balance

Increase as a share of tax refund

Day since the arrival of the first directly deposited tax refund

— Black — Hispanic — White

Note: Expenditures are total expenditures out of a family's checking account and (if applicable) Chase credit card. Net savings are net transfers from a family's checking account to its savings account. Checking account balance is the end-of-day checking account balance.

Next, we break down expenditures into several key categories (Figure 24). Unsurprisingly, we find that Black and Hispanic families exhibit larger percent increases and higher marginal propensities to consume than White families across a range of expenditures categories. In many ways, what is striking in Figure 24 is the similarity among racial groups in terms of how families spend their tax refunds across expenditures categories. Across all three racial groups, in percentage terms, the largest increases are in cash withdrawals, durable purchases, and check payments. The categories that represented the largest share of the tax refund were cash withdrawals, miscellaneous outflows, non-durable spending, and non-Chase credit card payments. While these categories mask differences in what the expenditures were for, it is notable that what differs across racial groups is the level of the response rather than the composition. As we have previously documented, one troubling pattern evident in Figure 24 is the marked increase in healthcare spending in the week after the tax refund, which indicates that families of all racial groups are deferring healthcare until their tax refund arrives (Farrell et al. 2018a).

As a final step, we explore whether, as in the case of job loss, racial gaps in liquid and financial asset buffers account for observed racial differences in consumption smoothing after the tax refund. The answer is yes. The top panel of Figure 25 shows that the thirty-day MPC is smaller among families with a larger cash buffer (Chase checking and savings account balances divided by baseline expenditures). Racial differences

in the expenditure response are considerably smaller among families within the same cash buffer quartile but they still remain. For example, the Black-White difference in MPC decreased from a 14 percentage point gap in the general population (thirty-day MPC of 0.38 for White families compared to 0.52 for Black families) to an 11 percentage point gap or less within each liquid asset quartiles.

**Figure 24:** Black and Hispanic families increased expenditures to a greater extent than White families across all categories, but especially in cash withdrawals



Increase in expenditure in week after tax refund, by expenditure category and race
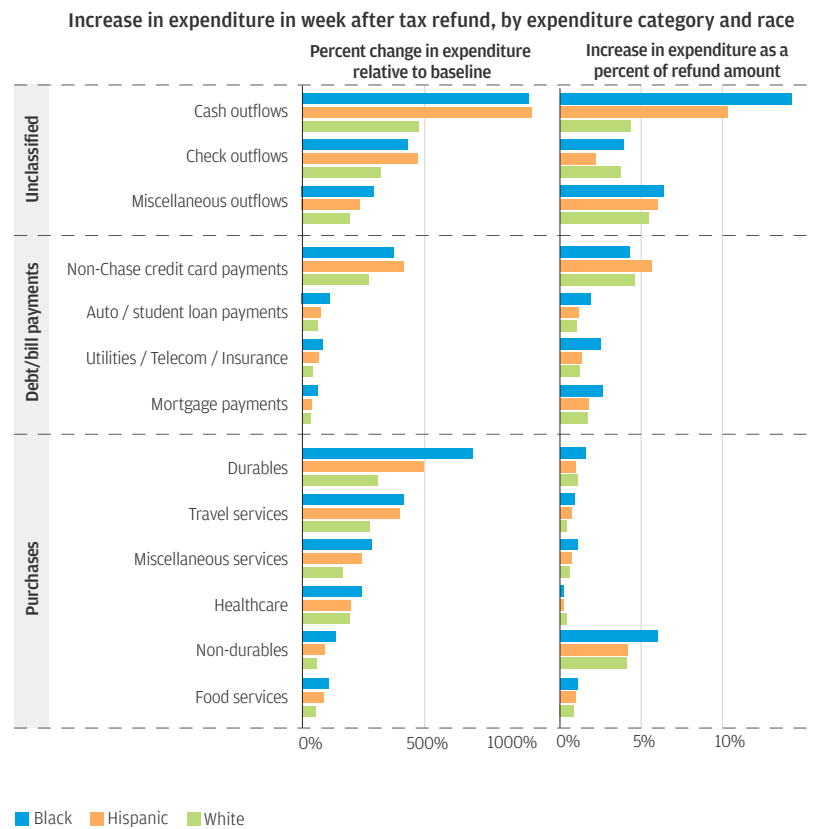
Note: The baseline period is from 182 days prior to tax refund receipt through 21 days prior to tax refund receipt. We calculate spending as a share of the first refund amount. This chart excludes families whose first refund is less than $50; within each category, it excludes families whose weekly baseline spending in theh category is under $1.

Source: JPMorgan Chase Insitute

> Across all three racial groups, in percentage terms, the largest increases are in cash withdrawals, durable purchases, and check payments.

In the bottom panels of Figure 25, we control for imputed liquid asset buffer (imputed liquid assets divided by baseline expenditures) and imputed financial asset buffer (imputed financial assets divided by baseline expenditures) using the same approach as described in Finding 5. When we compare families within the same quartile of imputed liquid or financial asset buffer, the racial gaps in MPCs are further reduced and are no longer significant in most cases. Put simply, Black and Hispanic families' expenditures increase to a greater extent when the tax refund arrives, but so do the expenditures of families with lower liquid and financial asset buffers. After accounting for the fact that Black and Hispanic families have lower liquid and financial asset buffers, we see that their expenditure increase after the tax refund, while still positive and significant, is statistically indistinguishable from that of White families. As with the unemployment results, we caution that this statistical finding may not reflect a causal relationship between asset holding and the consumption response to a tax refund, since family differences in assets may be correlated with other differences as well.

**Figure 25:** Families with larger asset buffers exhibit a lower marginal propensity to consume their tax refund. Racial gaps in consumption smoothing after the tax refund disappear when we control for imputed liquid and financial assets.
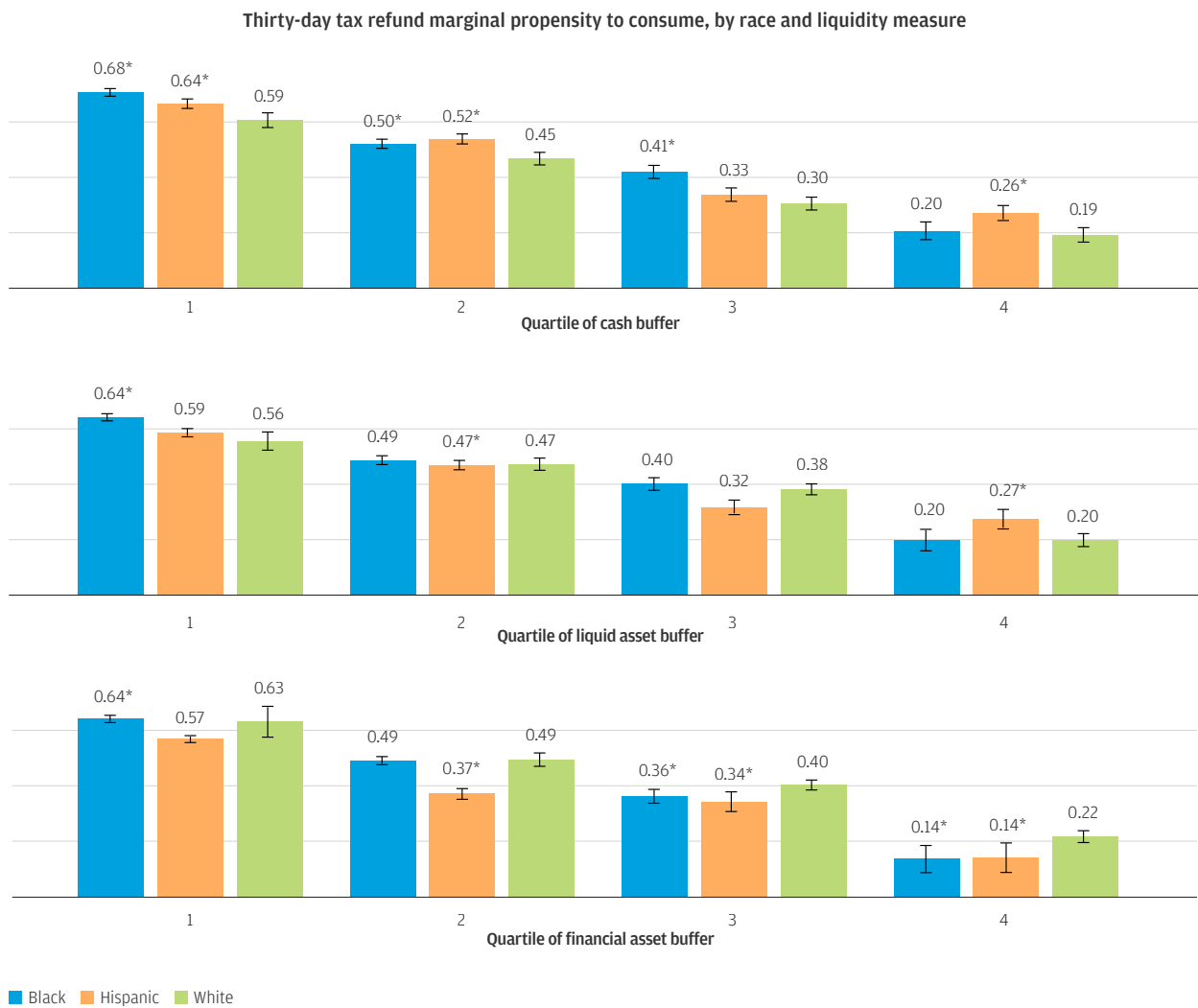
**Thirty-day tax refund marginal propensity to consume, by race and liquidity measure**



Note: Cash buffer is the ratio of (checking account balance + savings account balance) to monthly expenditure, liquid asset buffer is the ratio of imputed liquid assets to monthly expenditure, and financial asset buffer is the ratio of imputed financial assets to monthly expenditure. * indicates that the Black-White or Hispanic-White difference in marginal propensity to consume is statistically significantly different from 0 at the 95% level. Brackets indicate the 95% confidence interval.

Source: JPMorgan Chase Insitute

Racial Gaps in Financial Outcomes: Big Data Evidence

# Implications

In summary, we find that among a sample of 1.8 million families in Florida, Georgia, and Louisiana, large racial gaps exist in liquid assets and take-home income that cannot be fully accounted for by age, income differences, gender, or geography. Black-White and Hispanic-White gaps in take-home income are largest among high earners, raising the question of whether Black and Hispanic families face the greatest barriers to the highest income-generating opportunities.

Racial gaps in liquid assets—a family's first line of defense and a form of "private insurance"—are largest among the 65+ age cohort, potentially suggesting the cumulative effect of contributing factors over time, be they racial differences in income (e.g. earnings, passive income), expenditures (e.g. debt servicing, fees and fines, uninsured risks, family support), asset accumulation (e.g. inheritances, appreciation of real estate, and other financial assets), and/or liabilities (e.g. debt burdens).

Geographic variation underscores the role that local conditions can play in exacerbating or mitigating racial gaps in financial outcomes. Practices in locations with smaller gaps may provide valuable insight to help close gaps in other locations.

The racial gap in liquid assets makes Black and Hispanic families more vulnerable to income fluctuations. When faced with a job loss or the arrival of a tax refund, families will change their consumption to a greater extent when they experience involuntary job loss or receive a tax refund. In our companion academic paper, we also find higher

MPCs among Black and Hispanic families than White families in response to firm-wide changes in monthly pay (Ganong et al. 2020). However, racial gaps in consumption smoothing disappear when we account for the racial gaps in liquid and financial asset buffers. Put differently, regardless of race, families with similar financial asset buffers, respond similarly when they experience job loss or receive a tax refund.

Even though liquid and financial asset buffers can account for racial inequality in consumption smoothing, other factors might contribute to racial differences in ways that we do not observe. Some of these factors may be correlated with asset buffers, in which case asset buffers may be an indicator of differences in consumption smoothing, but not their attributable cause. Other factors may be uncorrelated with assets and operating in ways that nullify one another to the extent that they simultaneously narrow and widen racial differences in consumption smoothing. Below we describe a few of these factors.

First, while our data do not inform access to non-financial assets (e.g. home equity) and credit (e.g. credit cards), greater access by White families to these sources of capital may allow them to more easily smooth consumption after job loss and between tax refunds than Black and Hispanic families. As we describe in Box 1, liquid assets and financial assets represent just a portion of the balance sheet, and racial gaps in liquid assets are significantly smaller than racial gaps in net worth.

Second, White families may be more able to generate additional income or more likely to receive transfers from

friends and family to sustain a higher level of consumption during job loss and between tax refunds. Figure 31 in the Appendix illustrates that after job loss, total inflows, which includes all sources of income and transfers, recover faster than labor income and UI benefits alone and slightly more quickly for White families than for Black and Hispanic families. Other researchers have documented the key role family transfers play in helping White families build wealth (Chiteji and Hamilton 2002; Meschede et al. 2017).

Third, it is possible that Black and Hispanic families have differences in expectations that could cause them to under-consume between tax refunds and especially after job loss. For example, insofar as Black and Hispanic families observe racial gaps in income levels and employment rates, they may have differences in expectations regarding the stability of their income, their return to employment after job loss, or other financial shocks that may come their way.

Finally, racial differences in payment channel usage could cause us to overstate the MPC for Black and Hispanic families, thus yielding a larger observed racial gap in their consumption responses. For example, if after job loss Black and Hispanic families are more likely than White families to switch from observable channels to cash-based channels of income and spending, we might observe this as a larger drop in absolute spending. Similarly, if throughout the year, Black and Hispanic families receive and use cash inflows for a higher share of their spending without depositing them in their bank account, when the tax refund is directly

deposited into their bank account, we may observe a larger increase in expenditures among Black and Hispanic families as they switch to spending out of that bank account. We know from our sample and public sources, that Black and Hispanic families deposit a higher share of their inflows in cash and withdraw a higher share of their outflows in cash, making it very likely that they have additional cash inflows and outflows that never pass through their checking account and are thus unobservable in our sample (see Figure 32 in the Appendix and FDIC 2017).

Setting aside the factors that could account for the racial difference in consumption smoothing, the implication of a higher marginal propensity to consume among Black and Hispanic families is that Black and Hispanic families are very likely to experience greater welfare losses after job loss and between tax refunds. For example, as we have shown here and elsewhere, families defer healthcare consumption until the tax refund, which could impact their physical health (Farrell et al. 2018a).

These findings have important implications for public policy and the distributional impacts of policy interventions and institutional practices. Specifically, they raise broader questions as to how to reduce financial volatility and increase liquid assets for low-income families. Recognizing that other factors, such as wealth, transfers, and expectations, may also influence families' consumption behavior and well-being, they underscore the importance of addressing the structural factors that contribute to racial gaps in income and assets.

### Reducing financial volatility

**Unemployment Insurance benefits—a form of "public insurance"—buffer against consumption drops more so among families with limited liquid assets, especially Black and Hispanic families and their communities.**

Because Black and Hispanic families have lower liquid assets (less "private insurance"), without UI benefits, Black and Hispanic families' consumption would likely have dropped to an even greater extent than that of White families. This has implications for the well-being of not only the families who experience job loss but also for their surrounding communities. Businesses in low-income communities may struggle not only because families in their neighborhood have lower spending capacity in absolute terms but because their spending may be more volatile in the face of income shocks. Thus, programs that help boost spending when families lose a job also likely serve to stabilize businesses in their communities. Increasing the level and duration of, and access to, unemployment insurance would reduce income volatility and boost consumption among families when they experience involuntary job loss, specifically benefiting low-income families and their communities.

Recognizing that UI serves as a tool that is only helpful in a narrow set of circumstances, we must **consider other avenues to reduce income volatility, particularly for low-income workers.** Such avenues could include increasing access to paid sick and paid family leave, as several states and employers have done, as well as working to ensure workers have access to legally mandated benefits (e.g. workers' compensation) and predictable hours or advance notice on schedule changes (Aspen Institute 2016). As many have documented, such public policy interventions can go a long way to reduce the so-called "benefits gap." For example, as of 2018, just 17 percent of civilian workers had access to paid family leave policies (Bureau of Labor Statistics 2019), with Black and Hispanic workers least likely to have access to such policies and the most likely to benefit from government-sponsored paid leave policies (Bartel et al. 2019; Rossin Slater et al. 2013).

**Families might be more able to smooth consumption if they could access their tax credits and withholding during the year.** For most families, tax refunds constitute repayment of tax over-withholding, an interest-free loan to the government that does not change after-tax income. As it stands, most families end up over-withholding on their taxes for many reasons. Current tax policies inflict substantial costs for under-withholding and impose "failure to pay" penalties. Federal income tax liability is harder to accurately determine for those who receive substantial income from sources other than a typical wage or salary income. Because of these complicated provisions, families have incentives to over-withhold.

On one hand, tax refunds may serve as a helpful savings device and facilitate durable purchases and debt repayment precisely because they are disbursed in one large payment. On the other hand, insofar as tax refunds, inflexibly repaid in the early part of the year, may not be well timed with shocks that happen in the months in between each tax season, families might be more able to smooth consumption if they could assess and access their tax withholdings savings during the year.

Tax refunds also contain elements of income redistribution, in the form of tax credits that raise after-tax income. Programs such as the Earned Income Tax Credit (EITC), the child tax credit, and others tax credits that target low-income families improve well-being in that they boost consumption and help stretch dollars earned for those in the workforce with low wages. However, these credits are only provided at tax time, not necessarily when families benefit from the additional cash most. EITC and the child tax credit are also paid out only to those who claim eligibility on a tax form, and many low-income workers are not required to file. As such, benefits do not automatically transfer to all eligible families. These tax credits might improve well-being to

an even larger extent if they were paid out on a more regular basis than once a year. A direct, paycheck-based wage subsidy could provide one possible option for alternative distribution so long as it did not result in families ending up with an unexpected tax bill.

## Building assets

Recognizing that liquid assets are a family's first line of defense, a form of "private insurance," one might ask: how much of a liquid asset buffer does one need? **We estimate that a liquid asset buffer of $5,000 to $6,000 could enable Black and Hispanic families to sustain their typical consumption levels through a job loss or major cash-flow event.** We found that families with more liquid or financial assets exhibit a lower marginal propensity to consume. Although, in this report, we are unable to assess whether this relationship is causal, to demonstrate the potential importance of liquid assets, we calculate how a liquid asset buffer would affect consumption smoothing if the relationships documented above were in fact causal. Specifically, we ask, "how much of a liquid asset buffer is necessary to enable consumption smoothing through job loss and the arrival of the tax refund?" We have previously estimated that in order to weather a simultaneous income dip and expenditure spike (of any kind) of 25 percent or more, an event that happens every 5.5 years, families need roughly six weeks' worth of take-home income in liquid assets, approximately $5,000 for middle-income families (Farrell et al. 2019a). In the context of job loss and the tax refund, an even larger cash-flow event, we observe that families in the top quartile of liquid asset buffer, those with roughly eight weeks' worth of expenditures in liquid assets exhibit only a modest change in spending when they lose a job or receive a tax refund. This translates into roughly $5,600 for the median Black family, $6,000 for the median Hispanic family, and $7,000 to

$9,000 for the median White family, given their different spending levels. Given that the median Black family and Hispanic family have liquid assets of just $1,000 and $1,500, respectively, increasing this buffer to $5,000 or $6,000 is not an insignificant challenge. The question then becomes, how do we support families in building these liquid assets?

One approach is to **boost income and address the underlying structural challenges low-income families and Black and Hispanic families disproportionately face within the labor market,** including higher unemployment rates, occupational segregation, lower wages for similar work, and discrimination. Policies and programs that provide job security, promote employment, or boost income particularly among low-income families could include increasing the minimum wage, strengthening or expanding the EITC to ensure more eligible families receive it, ensuring jobs provide adequate benefits such as health care and paid sick and family leave, investing in job training and placement efforts that meet current and future labor force demands, and reducing the barriers to employment for individuals with criminal backgrounds. These and other policies might yield increased benefits to Black and Hispanic communities and help to close racial income gaps in the short-run. However, they would likely be insufficient to close racial gaps in liquid assets, which, as our and public data show, are much larger than racial gaps in income.

An additional lever is to **reduce expenses that disproportionately burden Black and Hispanic families** thus enabling them to better protect and build assets. These efforts could include increasing investments in and access to affordable housing, increasing access to affordable and high-quality childcare, reducing student loan debt, reducing municipal fees and fines, and increasing other investments in common public goods and infrastructure.

**Stronger programs, policies, and innovations to promote asset building among low-income families could also improve financial stability and well-being, particularly for Black and Hispanic families.** Innovative products and practices are emerging in the private and nonprofit sectors as both service providers and employers. These include "set-it-and-forget-it" automatic savings features; prize-linked savings, where participants' chance of winning a cash prize increase the more they save; digital enveloping or mental accounts earmarked for a specified purpose; and employer-sponsored emergency savings plans and "sidecar accounts", which provide a vehicle for employees to save outside of their employer-sponsored retirement accounts. Others have put forth ideas that attempt to address some of the more structural factors through government action and beyond. These include eliminating asset limit tests for social assistance programs, establishing child savings accounts or government-funded baby bonds, and expanding automatic enrollment in retirement savings accounts (e.g. Asante-Muhammad et al. 2017; Kijakazi 2019).

**What is clear is that the private, nonprofit, and government sectors all have significant roles to play as policymakers, service providers, and employers in closing racial gaps in income and wealth.** Interventions that aim to improve equity need to be effectively targeted to low-income families and specifically communities of color, and further research is needed to identify, pilot, and examine the impacts of such interventions. Our research shows the importance of disaggregating economic and financial statistics by race and measuring these statistics at a high frequency. Doing so can help shed light on the factors that contribute to stark and persistent racial differences in financial outcomes and instruct us to design more efficient and equitable policies.

# Data Asset

This report relies on a novel data asset of 1.8 million de-identified Chase checking account customers ("families") whose race has been determined based on state voter-registration records. Throughout this report, we group these families into a variety of subsamples, each serving a distinct analytical need. In this section, we begin by describing the process that we used to obtain customers' self-identified race. We then enumerate the distinct subsamples used in the report, and finally compare the demographic and financial character-istics of families in our data asset with public benchmarks.

**Box 3:** JPMC Institute—Public Data Privacy Notice

The JPMorgan Chase Institute utilizes rigorous security protocols to ensure all customer information is kept confidential and secure. Out strict protocols and standards are based on those employed by gov-ernment agencies and we work with technology, data privacy, and security experts to maintain industry leading standards.

There are several key steps the Institute takes to ensure customer data are safe, secure, and anony-mous, including:

- Removing all unique identifiable informa-tion—including names, account numbers, addresses, dates of birth, and Social Security Numbers—before the Institute receives the data.

- Putting in place privacy protocols for research-ers, including rigorous background checks and strict confidentiality agreements. Researchers are contractually obligated to use the data solely for approved research and may not re-identify any individual represented in the data.

- Disallowing the publication of any infor-mation about an individual, consumer, or business. Any data point included in any publication based on the Institute's data may only reflect aggregate information.

- Storing data on secure servers and under strict security procedures such that data cannot be exported outside of JPMorgan Chase's systems. The data are stored on systems that prevent them from being exported to other drivers or sent to outside email addresses.

These systems comply with all JPMorgan Chase Information Technology Risk Management requirements for data monitoring and security. The Institute prides itself on providing valuable insights to policymakers, businesses, and nonprofit leaders. But these insights do not come at the expense of JPMorgan Chase cus-tomer privacy or security.

## Matching algorithm

To generate our sample of 1.8 million families, we begin with a dataset of 20 million families who held a Chase checking account between October 2012 and January 2019.[16] To obtain Chase customers' self-reported racial identities, we matched voter registration files from Florida, Georgia, and Louisiana against the list of primary account holders from each of the 20 million families. The voter registration files in these three states include data on voters' races; because Chase has bank branches in these states, the matching process yields a large sample size.

We deploy a matching algorithm to identify "good" matches—that is, customer-voter pairs for which we are confident that the Chase customer and the voter are the same individual. Our algorithm measures the similarity of name, address, and birth year between a customer and a voter, and defines good matches as those pairs with high similarity scores. Specifically, the algorithm follows these steps:[17]

1. For every bank customer we define a list of candidate matches as the set of registered voters with the same house number, street name, and ZIP code as the customer.

   a. Choose the "best" match from the list of candidate matches, where the "best" match is the match with the highest address similarity score. We break ties in address similarity scores by choosing the match with the highest name similarity score. (Address and name similarity scores are calculated using a Jaro-Winkler distance metric).

   b. We accept the candidate match if either of the following two conditions is met:

      i. Address similarity score ≥ 0.97 and full name similarity score > 0.97.

      ii. Address similarity score = 1, first name similarity score > 0.97, and birth year differs by no more than one year.

2. With customers who were not matched in step 1, we define a new list of candidate matches as the set of registered voters with the same house number, street name, and city as the customer. We repeat steps (a) and (b).

3. With customers who were not matched in step 1 or step 2, we define a final list of candidate matches as the set of registered voters with the same ZIP code and birth year as the customer. We repeat steps (a) and (b).

This procedure yields about 6.5 million matched customers across all product types, of whom 1.8 million held a Chase checking account in the October 2012 to January 2019 period.

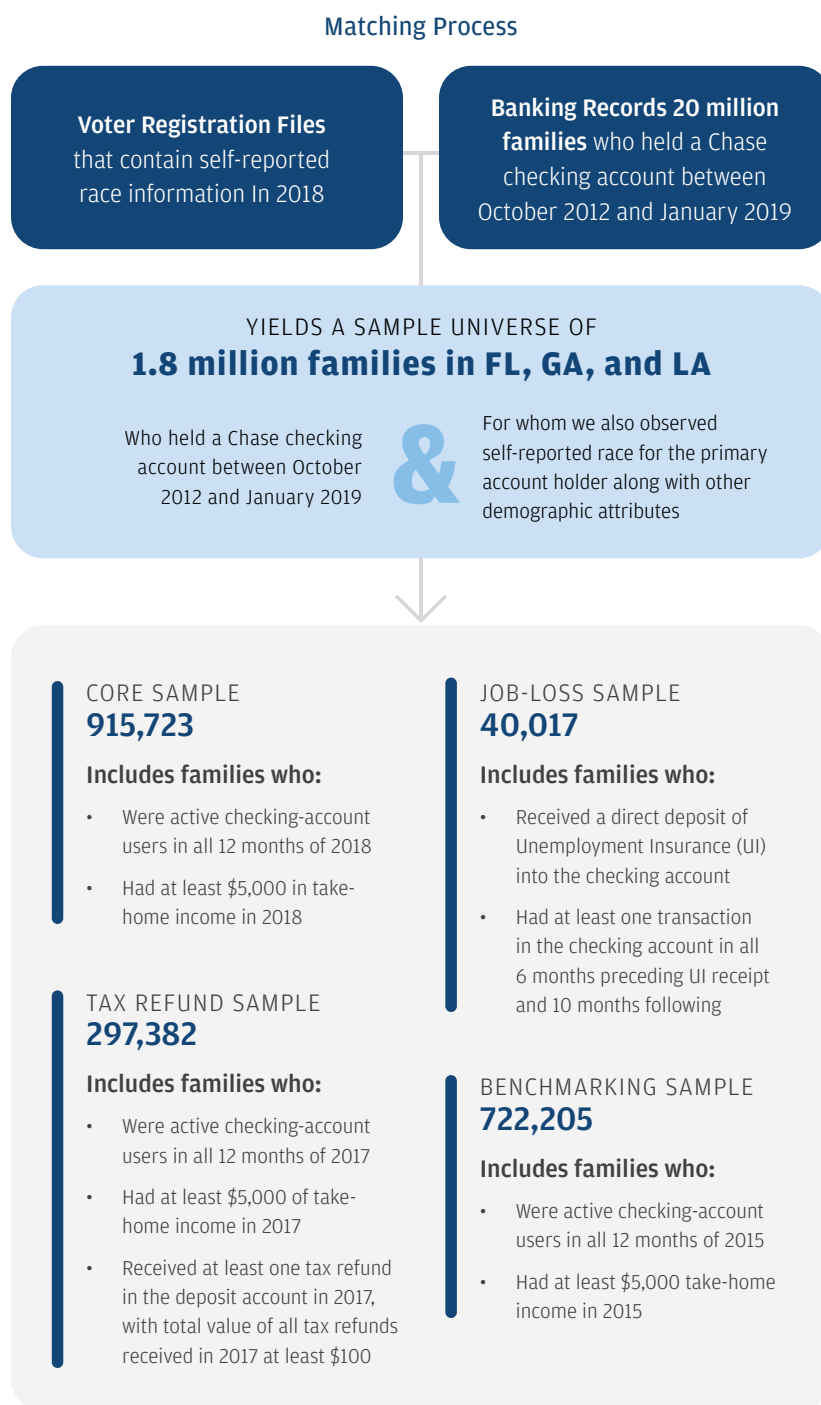### Validation of match accuracy

We validate the accuracy of the matching algorithm using data from mortgage applications. The Home Mortgage Disclosure Act (HMDA) requires banks to collect the self-identified race of mortgage applicants. Therefore, for the subset of customers matched with voter registration data who also hold a mortgage with Chase, we can verify whether the race obtained in the voter-matching algorithm agrees with the customer's self-identified race from HMDA. Among the 194,196 customers who appear in both samples, race in the HMDA data set agrees with the matched voter race 98.9% of the time.[18] This high agreement rate gives us confidence in the accuracy of our matching algorithm.

### Subsamples

Figure 26 shows the data set used in this paper's analysis. The key data asset ("overall sample") comprises the 1.8 million Chase customers whose race has been identified by matching Chase customers with registered voters in Florida, Georgia, and Louisiana. From this overall Chase sample, we derive four subsamples that we use in different sections of our analysis.

**Figure 26:** Samples used in this report

Matching Process

| | |
|---|---|
| **Voter Registration Files** that contain self-reported race information In 2018 | **Banking Records 20 million families** who held a Chase checking account between October 2012 and January 2019 |

YIELDS A SAMPLE UNIVERSE OF

## 1.8 million families in FL, GA, and LA

Who held a Chase checking account between October 2012 and January 2019

&

For whom we also observed self-reported race for the primary account holder along with other demographic attributes

### CORE SAMPLE
**915,723**

Includes families who:

- Were active checking-account users in all 12 months of 2018
- Had at least $5,000 in take-home income in 2018

### TAX REFUND SAMPLE
**297,382**

Includes families who:

- Were active checking-account users in all 12 months of 2017
- Had at least $5,000 of take-home income in 2017
- Received at least one tax refund in the deposit account in 2017, with total value of all tax refunds received in 2017 at least $100

### JOB-LOSS SAMPLE
**40,017**

Includes families who:

- Received a direct deposit of Unemployment Insurance (UI) into the checking account
- Had at least one transaction in the checking account in all 6 months preceding UI receipt and 10 months following

### BENCHMARKING SAMPLE
**722,205**

Includes families who:

- Were active checking-account users in all 12 months of 2015
- Had at least $5,000 take-home income in 2015

Note: Eight Southern states (AL, FL, GA, LA, TN, PA, NC, SC) collect data on race as part of voter registration. We matched Chase banking records with 2018 voter registration records in the three states among those eight that had Chase branches in 2018 (GA, FL, LA).

Source: JPMorgan Chase Institute

Each subsample serves a distinct purpose:

- **Core sample (2018) (n = 915,723):** We use the 2018 core sample in Findings 1-3 in order to present a picture of income and liquid asset disparities that reflects the most recent full year of data available.

- **Job-loss sample (n = 40,017):** In Finding 4 we use a sample of families who experienced involuntary job loss and received UI benefits. Because roughly 1 percent of bank customers receives UI, we removed all other sampling criteria used for the 2018 Core Sample (minimum of five transactions every month and $5000 in annual take-home income) and extended the timeframe to October 2012 through January 2019, the full range of our data, to maximize the sample size.

- **Tax refund sample (2017) (n = 297,382):** In Finding 5 we examine a sample of families who received at least one tax refund in 2017. This is the most recent year for which we can conduct our tax refund analysis, given the analysis' need for data for the six months following tax refund receipt.

- **Benchmarking sample (2015) (n = 722,205):** We use the 2015 benchmarking sample to compare Chase data against public data in the "benchmarking the sample" section below. We choose to use the 2015 core sample because the public surveys against which we benchmark (the Survey of Consumer Finances and the Current Population Survey) occurred in years 2014 through 2016.

The table below compares some basic summary statistics across the four subsamples:

**Table 5:** Key attributes of each of the four samples

| | | 2015 benchmarking sample | 2018 core sample | Job loss sample | Tax refund sample |
|---|---|---|---|---|---|
| **Share of sample** | Black | 23% | 23% | 26% | 22% |
| | Hispanic | 23% | 23% | 27% | 27% |
| | White | 49% | 49% | 43% | 52% |
| **Median age** | Black | 48 | 48 | 45 | 45 |
| | Hispanic | 47 | 46 | 47 | 43 |
| | White | 53 | 54 | 53 | 48 |
| **Median take-home income** | Black | $31,543 | $34,011 | $37,334 | $40,382 |
| | Hispanic | $32,994 | $35,666 | $39,689 | $42,057 |
| | White | $46,462 | $47,908 | $50,472 | $56,731 |
| **Median total liquid assets** | Black | $921 | $1,029 | $944 | $1,345 |
| | Hispanic | $1,298 | $1,527 | $1,487 | $1,833 |
| | White | $2,869 | $3,247 | $2,409 | $3,509 |

Source: JPMorgan Chase Institute

## Benchmarking the Sample

*Chase sample vs. public benchmarks: demographic characteristics*

Our sample is not fully representative of the general population in a few important respects. First, it excludes the unbanked, who in 2017 represented 6.5 percent of the general population, including 3 percent of White individuals, 14 percent of Hispanic individuals, and 16.9 percent of Black individuals (FDIC 2017). The share of the population who are unbanked varies considerably by state. For example, in Florida 6 percent of the population are unbanked, compared to 10.6 percent in Georgia and 14.8 in Louisiana (FDIC 2017). Second, the voter registration sample also excludes anyone who is ineligible or not registered to vote in Florida, Georgia, or Louisiana, such as non-citizen residents or those who are convicted and incarcerated for a felony.[19]

Notwithstanding these exclusions, our sample disproportionately represents Black and Hispanic households, relative to both the nation and the population of registered voters in these three states (Table 6). With roughly 460,000 Black families and 410,000 Hispanic households, these shares represent 25 percent and 22.4 percent of the sample universe, respectively, exceeding their shares in the population generally (13.4 percent and 18.3 percent, respectively) as well as among registered voters in Florida, Georgia, and Louisiana (20.9 percent and 11.1 percent respectively). The over-representation of Black and Hispanic families in this sample is due in large part to the fact that Chase's customer base within these three states is disproportionately concentrated in Florida, which has a larger share of Hispanic families, relative to the other two states. In addition, the sample over-weights urban areas within all three states, where Black and Hispanic families are overrepresented (Table 7).

**Table 6:** Distribution of samples by race compared to benchmarks

| Subgroup | National population[1] | Registered voters in FL/GA/LA[2] | Chase sample | |
|---|---|---|---|---|
| White | 60.4% | 63.7% | 47.1% | 869,752 |
| Hispanic | 18.3% | 11.1% | 22.4% | 413,598 |
| Black | 13.4% | 20.9% | 25.0% | 461,542 |
| Asian | 5.9% | 1.9% | 2.6% | 47,424 |
| Other | 4.2% | 2.4% | 3.0% | 56,096 |
| Total | | | | 1,848,412 |

1.   Source: US Census Bureau, July 2018 estimate (https://www.census.gov/quickfacts/fact/table/US/PST045218). "White" refers to the Census measure of non-Hispanic, non-Latino White, and "Hispanic" refers to its measure of Hispanic or Latino. Numbers do not sum to 100% because the Black, Asian, and Other groups include individuals who also identify as Hispanic.
2.   We exclude from the denominator registered voters whose race is missing (5.4% of all registered voters).

**Table 7:** Distribution of registered voters and Chase registered voter sample by state, city, and race

| | Registered voters in FL, GA, and LA | | | | Chase sample | | | |
|---|---|---|---|---|---|---|---|---|
| | Share of total voters | Racial distribution within geography | | | Share of Chase sample | Racial distribution within geography | | |
| | | White | Black | Hispanic | | White | Black | Hispanic |
| FL | 60% | 63% | 13% | 16% | 67% | 46% | 17% | 32% |
| Miami, FL | 16% | 40% | 19% | 33% | 32% | 32% | 21% | 43% |
| Orlando, FL | 7% | 54% | 13% | 24% | 11% | 41% | 16% | 35% |
| Tampa, FL | 9% | 71% | 11% | 11% | 8% | 63% | 12% | 18% |
| GA | 29% | 54% | 30% | 3% | 13% | 34% | 52% | 6% |
| Atlanta, GA | 17% | 49% | 32% | 3% | 12% | 33% | 54% | 6% |
| LA | 11% | 68% | 31% | 1% | 20% | 58% | 35% | 2% |
| Baton Rouge, LA | 2% | 65% | 34% | 1% | 4% | 57% | 37% | 1% |
| New Orleans, LA | 3% | 63% | 34% | 3% | 7% | 55% | 36% | 3% |

Source: JPMorgan Chase Institute

The large sample size is notable, representing more than a 150-fold increase over existing public data sets typically used to measure racial gaps in financial outcomes. It offers us significant advantages in measuring Black-White and Hispanic-White gaps in financial outcomes with precision not just for these three states, but also within six key metro areas—Miami, Orlando, Tampa, Atlanta, New Orleans, and Baton Rouge. In fact, 32 percent of the sample, a total of 580,000 families, come from Miami alone.

In addition to over-sampling Black and Hispanic families and more urban populations, this sample slightly over-samples younger and male primary account holders (Figure 27). However, it is notable that national differences between White, Black, and Hispanic individuals in terms of age and gender also hold in the three-state sample frame as well as the Chase sample. For example, one distinctive feature of the U.S. is that Black household heads are more likely to be female than male

(Figure 27). In addition, Black and Hispanic household heads are relatively younger than White household heads, with Hispanic household heads the youngest of the three groups. Figure 27 shows that these features also hold in the three-state sample frame as well as our Chase sample. These differences in age and gender distributions across racial groups are a key reason we examine racial gaps in financial outcomes, not just in aggregate, but also within age segments and by gender.

> The large sample size represents more than a 150-fold increase over existing data sets typically used to measure racial gaps in financial outcomes.

**Figure 27:** Our bank sample slightly oversamples younger and male primary account holders compared to banked, registered voters in FL, GA, LA
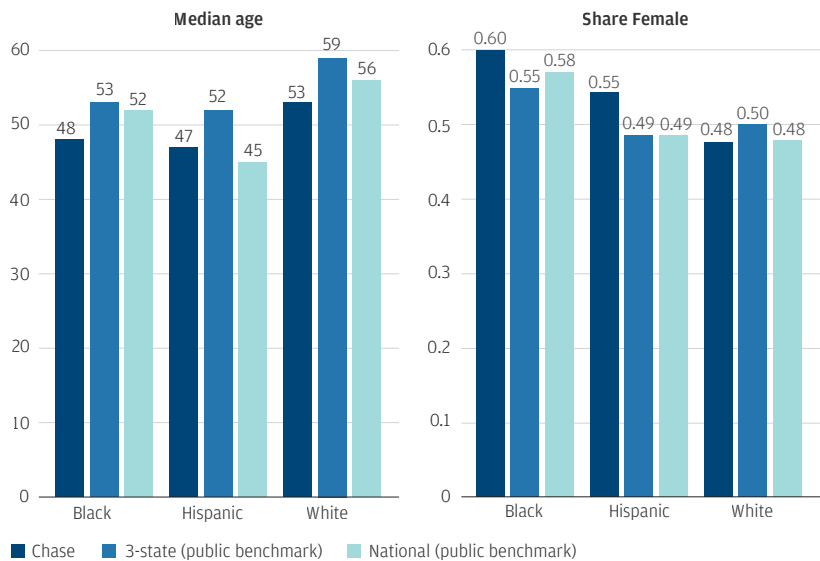


Note: Benchmark data refer to attributes of heads of household according to the 2016 Current Population Survey. Three-state sample refers to the subset of households in FL, GA, and LA who received income via direct deposit.

Source: JPMorgan Chase Insitute

In Table 6, we show that the Chase customer sample underrepresents White families (and correspondingly, overrepresents Black and Hispanic families) relative to the population of registered voters in FL, GA, and LA. Figure 28 explores the extent to which the geographic distribution of Chase customers within these three states explains the Chase sample's skewed racial distribution.

While 61.2 percent of voters are White, just 47 percent of the Chase sample is White.[20] How much of this difference is explained by Chase customers living in ZIP codes with a disproportionately small White population? To answer this

question, we reweight the distribution of voters across ZIP codes by match rate (i.e., the share of Chase customers in a ZIP code who are successfully matched with a voter record) and calculate the reweighted voter shares. We find that, if voters in the three states were distributed across zip codes according to the match rate of the Chase overall sample, 53.5 percent of voters would be White. This is still higher than the actual share of the sample that is White (47 percent). Put differently, 57 percent ((61.2–53.5)/(61.2–47.0)) of the underrepresentation of White individuals in the Chase sample is explained by Chase

customers being distributed across ZIP codes differently from voters; this in turn, largely reflects the concentration of Chase branches in FL, GA, and LA in a handful of metro areas.[21]

Of course, a substantial portion (43 percent) of Chase's underrepresentation of White families remains unexplained. The remaining difference may be due to Chase underrepresenting White families (and overrepresenting Black and Hispanic families) within ZIP codes. This may subsequently be due to an over selection of younger account holders, resulting in more Black and Hispanic families.

*Chase sample vs. public benchmarks: financial outcomes*

Setting aside the demographic nuances of this sample, the more important question for the purposes of this report is whether this sample offers a reliable window into levels and differences in financial outcomes among Black, Hispanic and White families both within these states and relative to the nation.

It is unclear a priori whether Black-White economic gaps in our three-state sample frame should be larger or smaller than national gaps. One reason they might be larger is these states were previously centers of Black enslavement prior to the Civil War and Black oppression under Jim Crow. One reason it might be smaller is that Georgia, Florida, and Louisiana all rank in the bottom quarter of U.S. states in 2017 in terms of average household income for White families. A second reason Black-White gaps might be attenuated is that, as mentioned above, 17 percent of Black households were unbanked in 2017 (compared to 3 percent of White families) and the unbanked are excluded from the sample frame by construction. In other words, inclusion in the sample frame reflects two offsetting forces: a banked screen that reduces the share of low-income households, especially for Black families, and a geographic screen that increases the share of low-income households for both Black and White families.

The situation for Hispanic families is more nuanced, owing to the unique history of Hispanic families in Florida. Most Hispanic individuals in the U.S. are of Mexican origin, but fewer than one in five Hispanic individuals in the three states in our sample are Mexican. This pattern arises

**Figure 28:** Comparison of population shares by race, registered voters in FL/LA/GA vs. Chase sample



Population shares by race
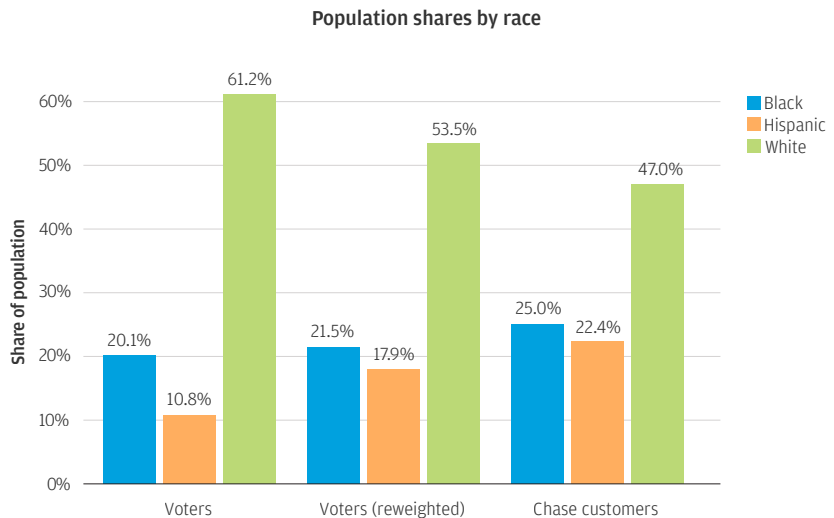
Notes: "Voters" refers to registered voters in FL, GA, and LA; "Customers" refers to Chase customers in FL, GA, and LA; and "Voters (reweighted)" refers to the sample of registered voters in the 3 states, reweighted by zip-code-level match rate.

Source: JPMorgan Chase Insitute

in large part because Florida has attracted a diverse set of Hispanic immigrants and refugees from across Latin America. In the three states, both Cuban and Puerto Rican origin are more common than Mexican origin. In addition, Florida has attracted a substantial number of Hispanic individuals from Colombia, Venezuela, and other countries in South America. Cubans, Puerto Ricans, and Colombians have annual personal incomes of roughly $28,000 compared to $25,000 among Mexican residents (Noe-Bustamante 2019).

Figure 29 compares the income distribution within each racial group according to the Current Population Survey (CPS) among banked registered voters in Florida, Georgia, and Louisiana compared to the nation. It illustrates that our sample frame offers an income distribution that is broadly representative of the

respective income distributions for Black, Hispanic, and White families. In fact, every quintile of the national income distribution for Black and White families is represented in approximately equal proportions in the sample frame. Remarkably, this pattern holds even for the bottom quintile of the national income distribution: 19 percent of Black families, 19 percent of Hispanic families, and 21 percent of White families have incomes below the national 20th percentile race-specific thresholds.

Benchmarks against public data give us confidence that our sample offers a reliable window into racial gaps in a range of financial outcomes.

**Figure 29:** Banked, registered voters in FL, GA, and LA broadly represent the income distribution of Black, Hispanic, and White families
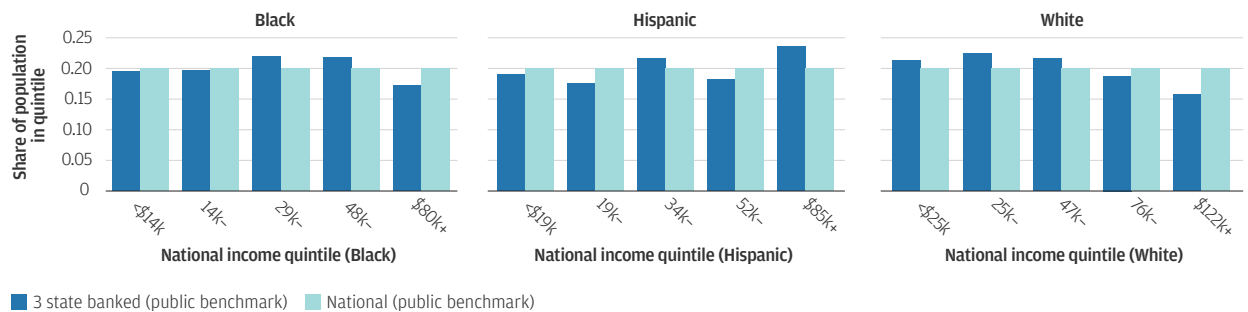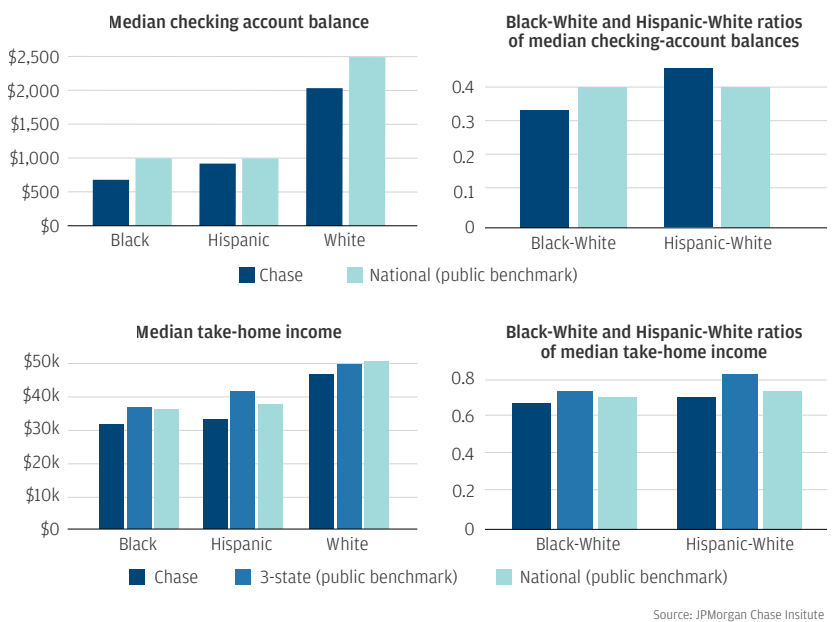


Black

Hispanic

White

Share of population in quintile

National income quintile (Black)

National income quintile (Hispanic)

National income quintile (White)

■ 3 state banked (public benchmark)   ■ National (public benchmark)

Note: Benchmark data refer to attributes of heads of household according to the 2016 Current Population Survey. Three-state sample refers to the subset of households in FL, GA, and LA who received income via direct deposit.

Source: JPMorgan Chase Insitute

Figure 30 shows that in aggregate our sample does a reasonably good job of estimating racial gaps in financial outcomes compared to benchmarks. We compare checking account balances in Chase accounts in 2015 to household checking account balances according to the 2016 Survey of Consumer Finances among respondents who receive directly deposited income. When it comes to household income, we compare take-home income as observed in Chase accounts in 2015, which reflects income after taxes and other payroll deductions, to after-tax income which we impute from the Current Population Survey (years 2014 through 2016, restricted to households that have received direct deposit income) by deducting estimated taxes from gross household income.[22]

We find racial gaps in median checking account balances and take-home income as observed in Chase accounts are of the same order of magnitude as benchmarks from the nation and among the banked population—around 0.3 to 0.4 for checking account balances and 0.7 to 0.8 for family income. There are some noteworthy differences, however. We observe slightly larger Black-White gaps in the Chase sample compared to the benchmark

**Figure 30:** Levels and ratios of household income and checking account balances by race (2015)



Median checking account balance

Black-White and Hispanic-White ratios of median checking-account balances

■ Chase   ■ National (public benchmark)

Median take-home income

Black-White and Hispanic-White ratios of median take-home income

■ Chase   ■ 3-state (public benchmark)   ■ National (public benchmark)

Source: JPMorgan Chase Insitute

in checking account balances (0.33 compared to a benchmark of 0.40) and in take-home income (0.68 compared to a state benchmark of 0.74), and we observe a smaller Hispanic-White gap in checking account balances (0.45 compared to a state benchmark of 0.40) but a larger gap in take-home income (0.71 compared to a state benchmark of 0.83).[23]

Notwithstanding these slight differences, the fact that the observed racial gaps in checking account balances and take-home income are on the same order of magnitude as benchmarks gives us confidence that our sample offers us a reliable window into racial gaps in a range of other financial outcomes that are uniquely observable in administrative banking data.

# Appendix

**Figure 31:** Total inflows recover more quickly for White families than for Black and Hispanic families
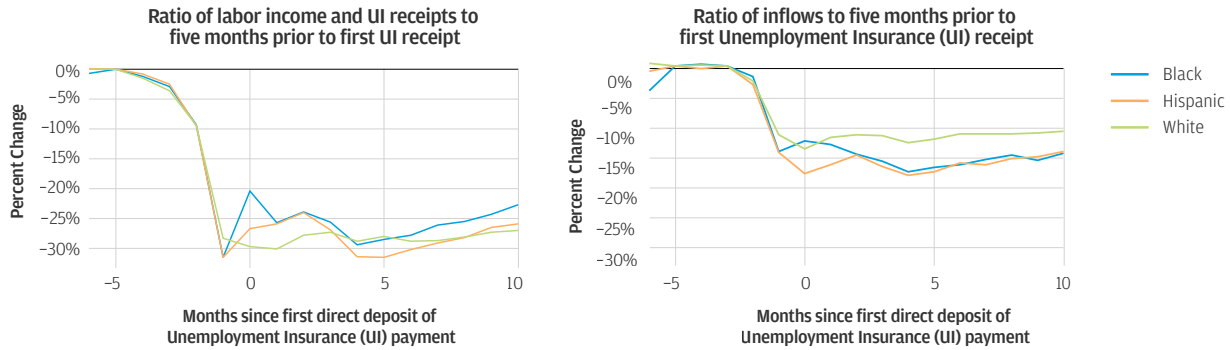
**Ratio of labor income and UI receipts to five months prior to first UI receipt**

**Ratio of inflows to five months prior to first Unemployment Insurance (UI) receipt**

Black
Hispanic
White

Percent Change

Months since first direct deposit of Unemployment Insurance (UI) payment

Months since first direct deposit of Unemployment Insurance (UI) payment

Note: Unemployment Insurance (UI) refers to UI payments direct deposited into the checking account. Labor income only includes inflows to the checking account identifiable as labor income, while "inflows" include all inflows to the checking account.

Source: JPMorgan Chase Insitute

**Figure 32:** Black and Hispanic households use cash to a greater extent than White families

**Share of inflow dollars, by channel and race**

| | Black | Hispanic | White |
|---|---|---|---|
| Other | 21% | 24% | 26% |
| | 5% | 6% | 2% |
| Check | 6% | 10% | 8% |
| Electronic | 67% | 59% | 63% |

**Share of outflow dollars, by channel and race**

Other
Cash
Check
Debit Card
Electronic

| | Black | Hispanic | White |
|---|---|---|---|
| Other | 11% | 14% | 15% |
| Cash | 19% | 15% | 8% |
| Check | 12% | 13% | 18% |
| Debit Card | 34% | 31% | 25% |
| Electronic | 24% | 28% | 33% |
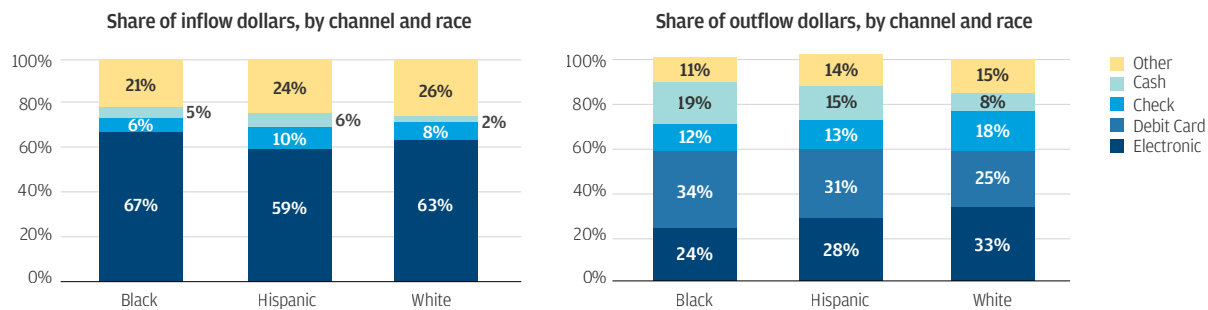
Note: These charts include all inflows into and outflows from the checking account. "Electronic" refers to wire transfers, ACH transfers, and various other categories of electronic transactions.

Source: JPMorgan Chase Insitute

**Figure 33:** The racial gap in liquid assets is smaller among the UI sample

**Liquid assets among 18 to 64-year-olds (2015), by race and unemployment insurance (UI) recipiency**

**Black-White and Hispanic-White ratio of liquid assets among 18 to 64-year-olds (2015), by race and UI recipiency status**

UI recipients
non-UI recipients
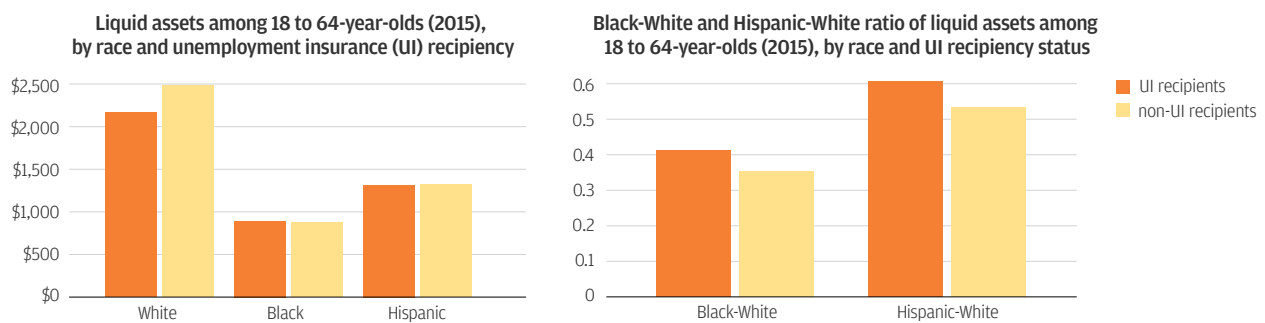
Note: This plot defines a UI recipient as a family that has ever received UI payments (at any point in the 2012-2018 period). We compute this figure using the 2015 benchmarking sample.

Source: JPMorgan Chase Insitute

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# Endnotes

1   Although the Fifteenth Amendment gave Black individuals the right to vote in 1870, Jim Crow laws in Southern states prevented most Black individuals from voting for nearly a century thereafter. These laws were overturned by the Voting Rights Act of 1965, which ensures equal voting rights for Black individuals and other minorities. Today, eight Southern states collect data on race as part of voter registration.

2   Voter registration data was obtained in 2018 for the exclusive purpose of enabling the JPMorgan Chase Institute to conduct research examining financial outcomes by race and not to identify party affiliation. Voter registration records and bank records were matched based on name, address, and birthdate (see the Data Asset section for more detail). The matched file that contains personal identifiers, banking records, and self-reported race has been deleted. The remaining de-identified file that contains banking records and self-reported race is only available to the JPMorgan Chase Institute and is not being maintained by or made available to our business units or other parts of the firm.

3   For example, typical research on the racial wealth gap has leveraged the Survey of Consumer Finances (SCF) (e.g. Dettling et al. 2017) and the Panel Study of Income Dynamics (PSID) (e.g. Altonji and Dorascelski 2001; McKernan et al. 2014). The SCF surveys roughly 6,000 households (6,254 in 2016) once every three years (not a panel), including roughly 750 Black families. The PSID tracks income, wealth, and family formation for a panel of roughly 9,000 (9,607 families in 2017) surveyed every other year, including roughly 3,000 Black families. More recently IRS income tax filing records have also been paired with Census data to examine racial gaps in income (e.g. Chetty et al. 2019), but these administrative data do not measure consumption or liquid assets.

4   Patterson (2018) documents changes in consumption with respect to annual income changes for Black and White households using the Panel Survey of Income Dynamics.

5   A natural question is whether these racial gaps in earnings are similar if we examine just labor income, and whether they are due to lower employment to population ratios—the extensive margin—or higher earnings within a job—the intensive margin. We find similar racial gaps in labor income among the working age population (18 to 64-year-olds)—a Black-White gap of 0.73 and a Hispanic-White ratio of 0.74. These estimates do not change dramatically, when we condition on positive directly deposited labor income, yielding a Black-White gap of 0.66 and a Hispanic-White gap of 0.73.

6   For example, the FDIC reports that 6.9 percent of White households receive income via cash in a typical month, compared to 8.3 percent among Black families and 13.9 among Hispanic families (FDIC 2017). Similarly, in our sample cash deposits represent a higher share of total inflows among Black and Hispanic families (5 and 6 percent, respectively) compared to White families in our sample (2 percent, see Figure 32 in the Appendix). Insofar as the share of families receiving cash is still small, we expect the margin by which we might understate income among Black and Hispanic families and thus overstate the racial gaps to be small.

7   These results are differ slightly from other analyses of racial gaps in income. For example Kochhar and Cilluffo (2018), using ACS data from 2016, found that Black-White and Hispanic-White income gaps exist along the income spectrum, but were larger overall than in our sample (a Black-White gap of 0.65 at the 50th percentile) and slightly larger among low-income families than among high-income families (0.54 at the 10th percentile compared to 0.68 at the 90th percentile). The Hispanic-White gap in income was 0.66 at the 10th percentile, 0.63 at the 50th percentile, and 0.65 at the 90th percentile.

8   Here income quintiles are set based on the income distribution of the entire population not the distribution specific to each racial group.

9   Notably, these results hold in all three states. Thus, this result is not driven by a preponderance of high-net wealth retirees moving to Florida.

10  Metro areas refer to core-based statistical areas (CBSAs). We selected metro areas for specific study based on the locations where we have a robust sample size. Thus, the "rest of Florida," "rest of Georgia," and "rest of Louisiana" geographies include all customers in the respective states who do not live in one of the CBSAs we are specifically studying; this includes families who live in other metro areas, as well as those living in rural areas.

11  Prosperity Now (2019) defines liquid asset poverty as the percentage of households without sufficient liquid assets to subsist at the poverty level for three months in the absence of income. The share of Black families facing liquid asset poverty in 2014 was 77.4 percent in Louisiana (compared to 38.4 percent among White families), 67.5 percent in Georgia (compared to 41.0 percent among White families), and 63.0 percent in Florida (compared to 37.8 percent among White families).

12  We have reported the modal duration of UI during our sample timeframe between October 2012 and January 2019. UI durations depend on unemployment rates, and were higher between 2013 and 2015 in Florida and Georgia and in 2013 in Louisiana. For example, in 2013 the modal UI duration was forty-six weeks in Florida, 48.6 weeks in Georgia, and fifty-four weeks in Louisiana.

13  See Ganong and Noel (2019) for a more complete description of nondurable consumption categories. Altogether, transactions that can be affirmatively categorized as nondurable comprise an average of 44 percent of checking account outflows.

14  As measured in the Survey of Consumer Finances, liquid assets refer to transaction accounts which includes which include checking, savings, money market, call accounts, and prepaid debit cards. Financial assets includes transaction accounts, certificates of deposit, savings bonds, other bonds, stocks, pooled investment funds, retirement accounts, cash value life insurance, and other managed assets.

15  The requirement is that families receive total tax refunds of at least $100 (i.e., if a family receives multiple tax refunds in 2017—for

example, one from the federal government and one from a state government—they must sum to at least $100). In addition, the first tax refund must be at least $50, and the event study is centered around the arrival of the first tax refund.

16  Twenty million is the average number of customers per month in the October 2012-January 2019 period.

17  This language is similar to that in Ganong, et al. (2020), which uses the same data set as the one in this report.

18  The 194,196 customers is the subset of the 6.57 million matched customers for whom we also have HMDA data.

19  In January of 2019 Florida amended its constitution to restore voting rights to former felons who had completed their felony sentence. Since the Voter Registration files were from 2018, it likely does not include ex-felons.

20  The numbers in Figure 28 are slightly different from the numbers in Table 6. In Table 6, we include the entire overall sample; in Figure 28, we filter the data to only include customers whom we are confident truly live in FL, GA, or LA. In general, this amounts to excluding customers who are in the overall sample because they are registered to vote in one of these three states, even though the ZIP code that JPMCI has access to is not in one of these states.

21  When we reweight ZIP codes by match rates, there are technically two reasons that a ZIP code might be under (over) weighted. One reason is that the share of Chase customers who live in the ZIP code is much smaller (larger) than the share of the population of state voters in that ZIP code. A second reason is that our voter-to-customer matching

algorithm may perform especially poorly (well) in the ZIP code, resulting in a lower (higher) number of matched customers. We emphasize the first reason in this report because we have no reason to believe that our matching algorithm's performance varies substantially across ZIP codes.

22  Although the unit of analysis in the Chase data is the primary account holder and most closely reflects a family rather than a household, we benchmark to household income and checking account balances, since that is unit of analysis in the Survey of Consumer Finances.

23  Compared to benchmarks, we observe similar checking account balances within our Hispanic population but lower checking account balances among Black and White families, such that we observe smaller Hispanic-White gaps and larger Black-White gaps in checking account balances compared to the benchmark. The benchmark would suggest that the Black-White and Hispanic-White gaps in checking-account balances should both be 0.4, but we observe smaller Hispanic-White gaps (0.45) than Black-White gaps (0.33). Across all racial groups we observe lower take-home income in Chase checking accounts than estimated after-tax income in the benchmarks, especially among Hispanic families. Within Chase we observe slightly larger racial gaps in take-home income compared to the benchmark, especially for Hispanic families (Black-White ratio of 0.68 compared to 0.74 in the benchmark, and a Hispanic-White ratio of 0.71 compared to 0.83 in the benchmark).

# Acknowledgments

## Suggested Citation

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