Spending after Job Loss from the Great Recession through COVID-19: The Roles of Financial Health, Race, and Policy

JPMorgan Chase & Co. Institute

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Introduction

The loss of a job is a volatile event experienced by millions of U.S. households every year.[1] Financial nest eggs in the form of liquid balances are an important source of stability through such events. However, the median household only has enough cash to cover a few weeks' worth of expenses.

The unemployment rate varies dramatically across business cycles, and recessions often affect the population unevenly. Different segments of the workforce can be hit harder—more men lost their job during the financial crisis, while lower-income service workers were more affected during the COVID-19 pandemic. A common thread is that Black and Latinx workers tend to be hit hardest and face higher unemployment rates even during "good" times.[2] In terms of welfare outcomes, these demographic differences are amplified, as prior work shows that families with fewer liquid assets are less able to self-insure against the financial consequences of job loss. A wide racial wealth gap exists with Black and Latinx families holding considerably fewer liquid assets than White families.[3]

Unemployment insurance (UI) plays a central role in the government's policy toolbox for supporting households financially after job loss. However, limited data availability has made it difficult to analyze precisely how payments translate to welfare gains over varying economic environments and, in particular, across different segments of the population.

To help fill the gap, this report provides insight into the relationship between households' financial health and the welfare costs of job loss, building on prior Institute reports and academic research.[4] The analysis leverages an expanded dataset that dates back to 2007, allowing a perspective that spans the Great Recession, the expansion period, and the COVID-19 recession. Over two million job loss events over this period make up the core sample. We organize the analysis around the following questions:

1. How has the impact of unemployment on spending decisions varied over time?
2. What is the influence of wealth, liquidity, and income level on spending outcomes in the wake of a job loss event?
3. What racial disparities are evident in the spending response to unemployment, and what explains these differences?

We find that during the Great Recession spending cuts after job loss were deeper than during the subsequent expansion, but during the COVID-19 recession spending increased after job loss for many, as government stimulus supported demand amid sharp declines in overall spending. Households' tendency to spend out of income after job loss—their marginal propensity to consume (MPC)—has

been fairly consistent over varying economic environments from 2008 to 2020. That said, across economic environments, there are large and consistent household-level differences in marginal propensity to consume. Specifically, following job loss, families with lower liquidity exhibit larger declines in spending in the face of income declines. In addition, Black and Latinx households cut their spending to a greater extent than White families after job loss, partially explained by their lower cash buffers and indicators of wealth. Put simply, household characteristics, such as liquidity and race, play a much larger role in explaining the consumption response to job loss than business cycle or local labor market conditions.

These insights indicate that incremental funds targeted towards the neediest—notably, in terms of liquidity—are most useful in limiting the welfare costs of losing a job. Meanwhile, delays in benefit payments are more consequential for the most financially vulnerable, implying that efficiency in the administration of UI is important. In addition, the relatively stable relationship between UI income and consumption in disparate economic environments provides an indication of the efficacy of countercyclical UI as a macroeconomic stabilizer. When demand from the employed population falls during a recession, directing fiscal stimulus towards the unemployed has offered a reliable "bang for buck."

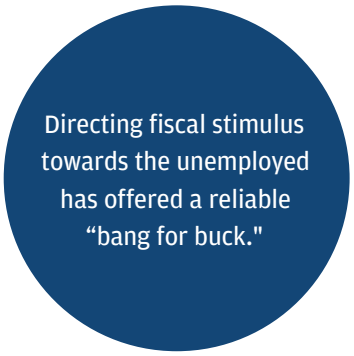


Table of Contents

Finding One

UI supplements implemented during COVID-19 prevented spending declines for the majority of people who lost their job, providing valuable support to the economy as overall demand was contracting sharply. This pattern contrasts with the sizable spending cuts observed for households experiencing unemployment in the Great Recession and subsequent expansion.

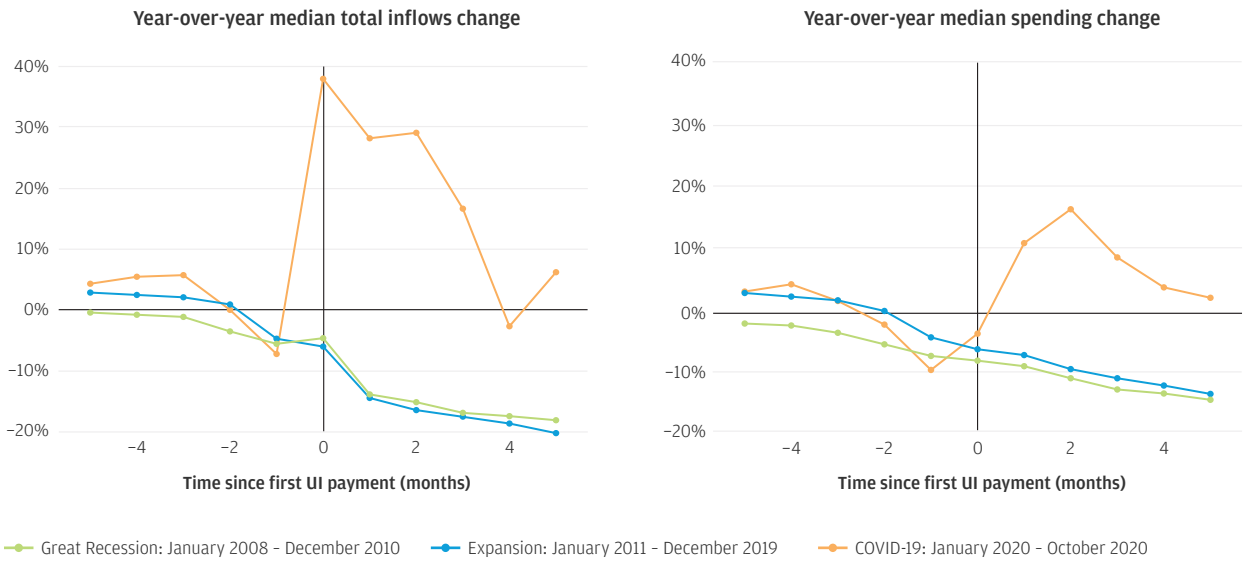
Households tend to cut spending immediately after losing their job, an intuitive response to falling incomes and rising uncertainty. In the economic expansion covering 2011 through 2019 the typical decrease in income was approximately 15 percent in the first month after the start of UI payments, while spending dropped by 7 percent.

However, the drivers of spending are not constant over time. Varying unemployment conditions—across time and geography—and policy changes may matter. Figure 1 shows trends in income and spending around job loss over three distinct macroeconomic environments—the Great Recession, the subsequent expansionary period, and the COVID-19 pandemic. During the Great Recession, we find that spending cuts were somewhat deeper than in the subsequent expansion on a year-over-year basis. However, the proximate shock at the onset of UI was not quite as severe, on balance, in that recession—explained by reductions in spending and income prior to job loss.[5]

In 2020, in contrast, the spending of those receiving unemployment benefits rose, alongside increased UI benefit levels.[6] Despite the large differences in spending outcomes after the onset of COVID-19, we document in Finding 2 that spending out of UI payments reflected a proportional response to the increased payment amounts.

The event studies plotted in Figure 1 do not take into account differences in the composition of people who lost their job in different periods, which may affect

Figure 1: Increases in payments during the pandemic boosted spending and income for those on UI.



Note: We track outcomes over the course of unemployment stints, which frequently span multiple months. Growth rates are year-over-year. The plot depicts the path of income and spending growth over an event time window in which the first month of UI receipt is denoted by t = 0. Total inflows are computed after subtracting off the net inflow from other accounts, like savings accounts.

Source: JPMorgan Chase Institute

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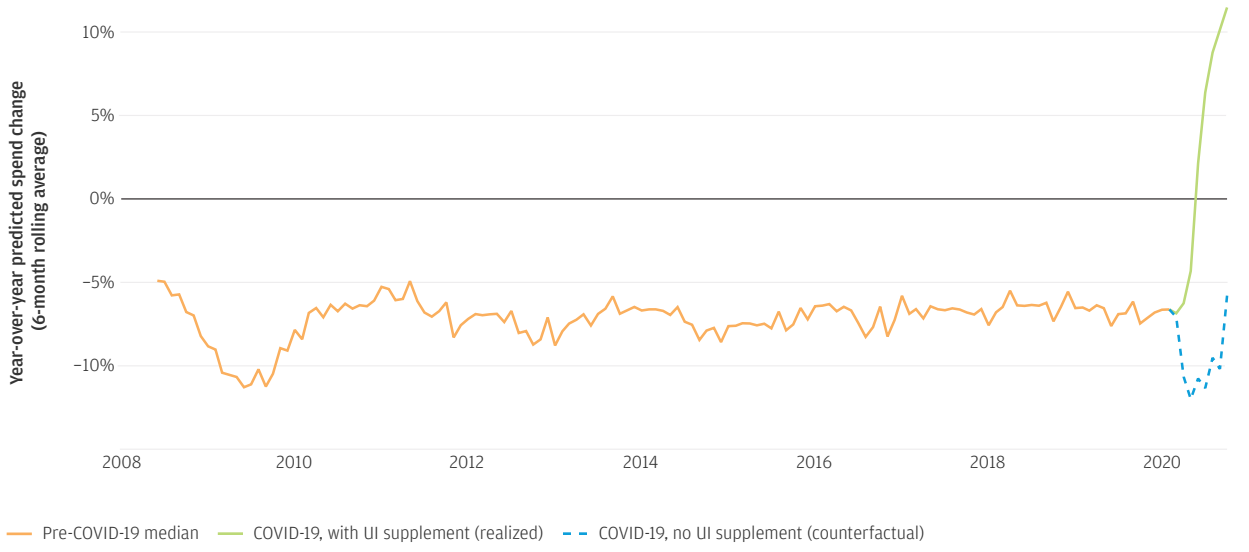
the interpretation of these figures. For example, recent research documents that job losses were heavier for households with lower levels of education during the pandemic.[7] To control for changes in the composition of the unemployed population over time, we use a regression framework to explain spending after job loss using income changes and controls for household characteristics and broader economic conditions. Appendix 1 provides additional details of our approach.

We use this framework to generate counterfactual spending outcomes under alternative policy regimes. What would have happened during the pandemic if UI payment levels had not been boosted by supplements of up to $600 per week? In Figure 2, we depict the predicted year-over-year spending changes for the typical unemployed household over time, comparing predicted spend both with, and without, UI supplements.[8] The magnitude of the income drop after job loss, including UI receipt, was relatively stable in the years leading up to the pandemic. To reflect the boost in spending attributable to UI policy change, we compute the predicted spending change at the elevated UI level against the counterfactual of constant UI. The exercise underscores the important role UI played in insulating financially vulnerable households from painful cuts in spending and providing an economy-wide bulwark against demand contraction amid heightened uncertainty.

Variation in the effect of job loss over time stems from monthly fixed effects in the regression, which show the "independent" effect of job loss exhibited by each month's cohort of UI recipients. Importantly, this lens on the effect of job loss relies on a host of household-level controls to hold constant the influence of policy and compositional changes in our job loss sample.[9]

Change in spending growth is generally influenced by economy-wide developments. The Great Recession for example, exhibited a general spending contraction that included the employed population.

Figure 2: Spending of the unemployed was supported by supplements during the pandemic, contrasting with the Great Recession.



Note: Predicted values are for the median change in spending computed from the regression framework presented in Appendix 1. The prediction is for a household with median financial characteristics and demographic characteristics matching average shares in our sample. Prior to March 2020, variation over time in predicted spend change comes from the month fixed effects in the regression--income changes are held constant; From March 2020 we include both realized income changes and the counterfactual, which holds the income change after job loss at its pre-COVID-19 median level.

Source: JPMorgan Chase Institute

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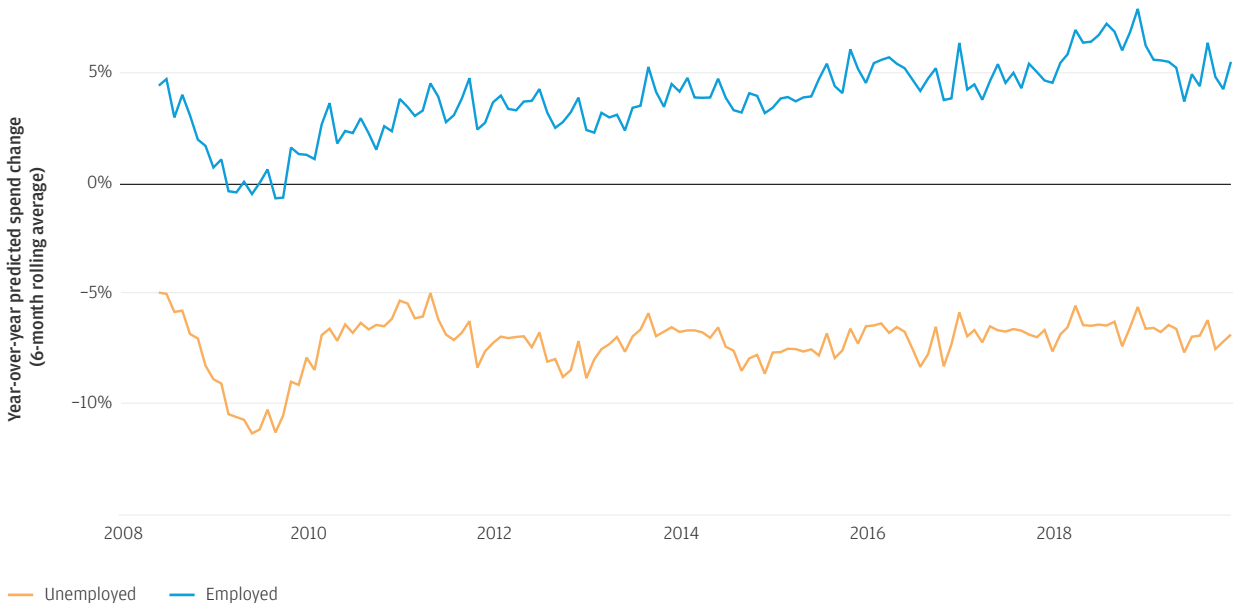
Figure 3 shows how median spending changes evolved over the 2008 to 2019 timeframe for both populations. As above, we use a regression framework to predict median spend change for the unemployed and employed groups, to make the estimates as comparable as possible.

These figures suggest that the "causal" effect of job loss—as measured by gap between the predicted spending change of the employed versus unemployed—has actually been fairly stable over time. During the Great Recession, the spending contraction by the unemployed was only somewhat more pronounced than the decline in spending growth of the employed. The gap widened by a similar amount late in the pre-COVID-19 expansion, as spending growth of the employed rose. On balance, we do not find an obvious connection between the business cycle and the causal effect of job loss on near-term spending behavior. In Finding 2, we investigate further the link between labor market conditions and household spending behavior.

Figure 3: The spending gap between the employed and unemployed was fairly stable from 2008 to 2019.



Note: Prediction for the unemployed is for the first month of UI after the onset of UI payments. Employed change is the median spend change for a sample not receiving UI, weighted to match the geographic footprint of the unemployed sample.

Source: JPMorgan Chase Institute

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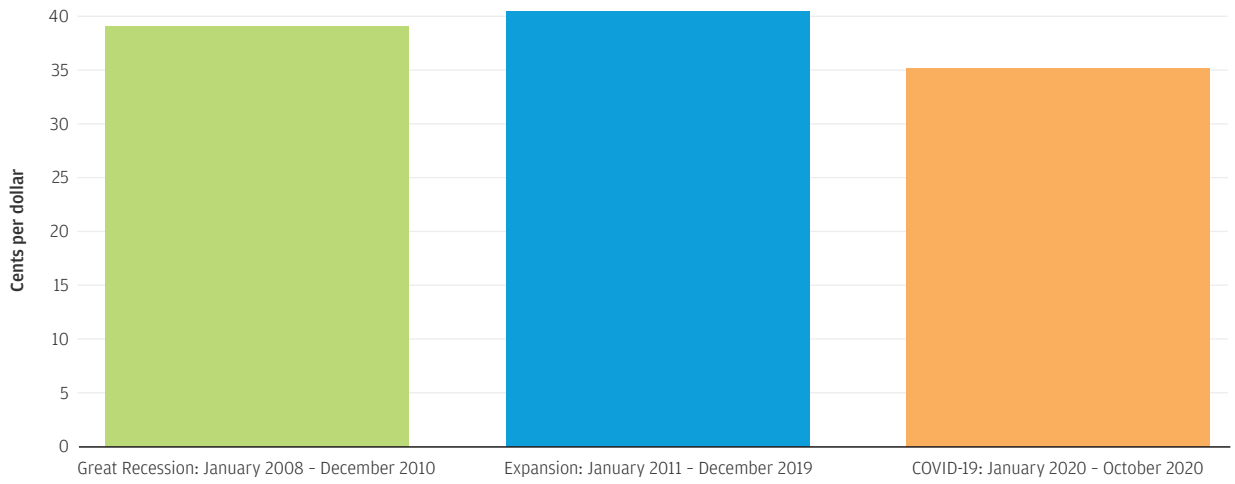
Finding Two

Households' tendency to spend out of income after job loss has been fairly consistent over varying unemployment environments from 2008 to 2020.

When people lose their jobs, both income and spending drop notably. Following prior academic and Institute research on consumption dynamics, we focus on how spending changes alongside income shifts. This is known as a marginal propensity to consume out of income (MPC). The metric helps policymakers understand how income shocks translate into welfare, and hence the potential benefits of UI in shielding households from earnings volatility.

We find a relatively stable relationship between spending and income changes over different economic environments in our sample—through time and geography. During COVID-19, the MPC was only modestly smaller —approximately 3 cents per dollar— despite the sweeping changes affecting daily life, generous UI benefits and stimulus payments, and the rise in aggregate household savings. As in Finding 1, we use a regression framework described in Appendix 1 to compute these sensitivities. In order to isolate the causal effect of job loss on spending, we focus on households' year-over-year spend change relative to a control of those who did not receive UI payments.

Figure 4: Regression estimates suggest relatively stable propensity to spend out of UI across eras.



Note: MPCs are computed from a regression of spending changes on income changes and a number of controls, described in Appendix 1. Controls include income level, liquid balances, and demographic variables.

Source: JPMorgan Chase Institute

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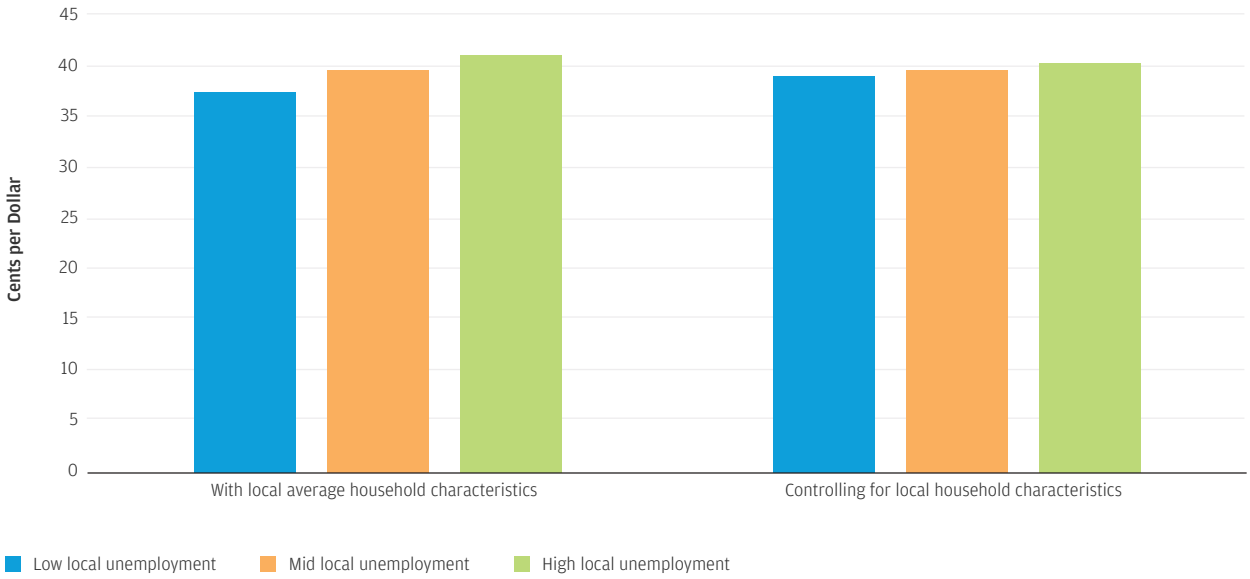
Next, we examine whether local labor market conditions influence the spending response to job loss. Where unemployment is elevated, households may expect finding a job to be more difficult and adjust spending downward. We proxy these conditions using the Bureau of Labor Statistics county-level unemployment rate. We find that spending is only marginally more sensitive to income in high unemployment areas, as depicted in Figure 5.

The small differences seen across economic environments is roughly consistent with prior academic work—on smaller samples—that found no statistically discernible connection between the state of the economic cycle and consumption smoothing due to UI.[10] Modestly higher MPCs in high unemployment areas appear to be mainly attributable to household-specific factors, not the local labor market itself.[11] The MPC gaps across local unemployment groups are nearly zero when considering variation only in the unemployment rate. We leverage the household view in our data to explore heterogeneity further in Findings 3 and 4.

Figure 5: Income sensitivity after job loss is relatively constant across varying local unemployment conditions.



Note: MPCs in the figure separate unemployment events occurring over the 2008 to 2019 period by the county-level unemployment rate. The COVID-19 period is excluded from these estimates to avoid undue influence from pandemic-specific circumstances. High and low unemployment events are defined as county-years in which the unemployment rate is at least 0.75 standard deviations above and below, respectively, the mean. Low implies local unemployment under 3.6 percent, high implies over 9.0 percent. All household characteristics are held at their median values in the plots on the right—including income level, liquid balances, and investor status; the only variable driving MPC differences is the local unemployment rate.

Source: JPMorgan Chase Institute

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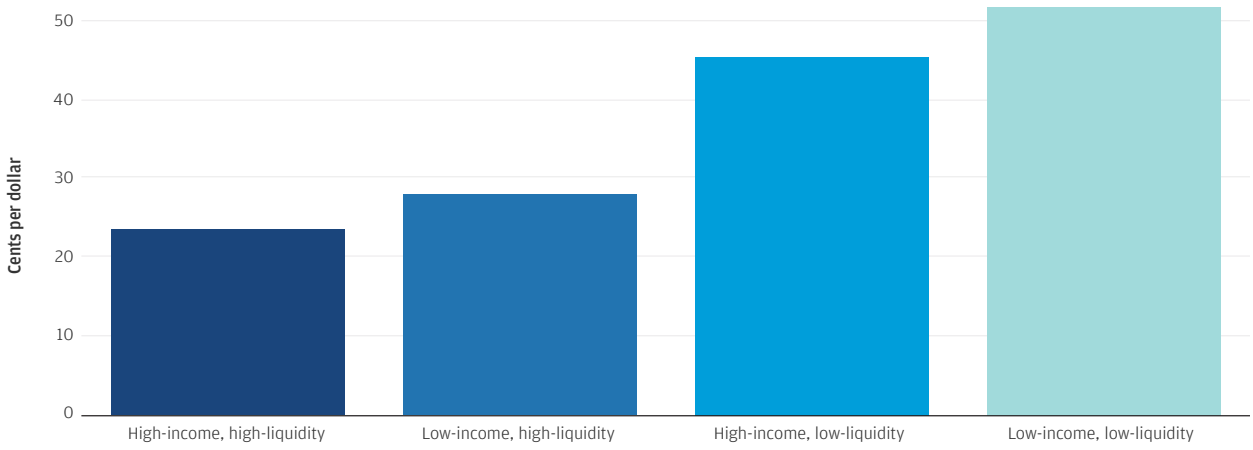
Finding Three

Following job loss, households with lower liquidity exhibit larger drops in spending, particularly in the face of large income declines.

Households' financial assets tend to dampen the link between current income and spending around job loss events. We find that for every dollar decline in income, a typical household with high income and liquid assets cuts spending by approximately 24 cents, versus over 50 cents for households with lower income and financial buffers. The predicted sensitivities are computed from our regression framework described in Appendix 1. These values are in line with those seen in academic literature.[12] To more clearly illustrate the impact of heterogeneity on this outcome, we categorize households into archetypes based on their liquidity and income. In Figure 6, we show predicted income sensitivity for each archetype using typical characteristics for households in each group. The method used to bucket households into categories is described in Box 1.

Figure 6: Higher income and higher liquidity predicts lower income sensitivity.



Note: MPCs represent the predicted sensitivity of spending to a change in current income, in terms of cents per dollar. Box 1 describes this methodology. For readability, the middle income and liquidity groups, which have MPCs in between those plotted, are omitted.

Source: JPMorgan Chase Institute

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Box 1: Categorizing households by income and liquidity

We parse our sample into groups based on income level (prior to job loss) and liquid balances. We divide our sample by thirds ranked by income and liquidity. This results in nine possible subgroups, with combinations of the three groups—low, middle, high—in both variables. Population shares in each group are reported in Appendix 2.

Levels of income and liquidity measured at least two months before the onset of UI payments determine household category. This ensures that the metrics reflect the degree of financial security prevailing during unemployment but are not unduly influenced by the event itself. Liquid balances are defined as the level of checking and savings balances two months before the first UI payment, which we scale by level of spend. For income, we categorize based on average checking account inflows during the twelve months prior—that is, the twelve-month period ending at time *t-2* where *t* is the first month of observed UI payment.

Table 1: Financial characteristics by archetype.

		High income, High liquidity	High income, Low liquidity	Low income, High liquidity	Low income, Low liquidity
Balances	**Median**	1.94	0.12	4.70	0.18
Income level	**Median**	$9,109	$7,440	$2,618	$2,374
Investor status	**Share**	0.51	0.31	0.21	0.10

Note: Liquid balances are total checking and savings balances divided by the pre-job loss monthly spending level—i.e, months' worth of liquidity. Income level is the average of monthly inflows less transfers from other accounts.

Source: JPMorgan Chase Institute

Circumstances facing households during job loss can vary markedly, and the degree of income declines can be severe. Unless another member of a household earns income, labor income frequently falls to zero. In the first month after the start of UI—prior to COVID-19—one out of every three households experiences total income declines exceeding 35 percent year-over-year, even after including UI benefits. Therefore, breaking the link between current income and spending can be crucial to avoid painful consumption drops.

To study these dynamics, we leverage our large sample to shed light on how spending relates to income shocks of different sizes. Using the archetype framework developed above, we bucket households according to indicators of financial vulnerability. Figure 7 shows the spending-income relationship for selected household types, along with the implied MPC across income shock magnitudes.

Households that have significant cash balances avoid income drops to a much greater extent than households with low liquidity. Those with substantial liquid balances are able to cushion spending when income drops notably; they are less likely to experience spending declines exceeding 20 percent. Meanwhile, households with lower liquidity are highly sensitive to current income, irrespective of the magnitude of the shock. Considering households that experience income drops of over 30 percent, the percentage decline in spending for low-liquidity households is about twice as large as those with high liquidity. This is true across the income spectrum.

The purchases of lower income households tend to include a higher proportion of necessities, including food and shelter. While such households tend to hold less liquidity, low income households with liquid balances tend to avoid large cuts in spending. The MPC is close to zero for low income, high-liquidity households for large income declines, consistent with better consumption smoothing of near-term income volatility relative to households without cash buffers. On the other side, the most financially vulnerable households with low incomes and low liquid balances exhibit large spending declines when hit with negative income shocks, a concerning sign for their well-being.

Figure 7: Lower liquidity predicts higher MPCs across income shock sizes.

Note: The left plot depicts median year-over-year spending change bucketed by income change level. The right plot shows the sensitivity of spending to a marginal income change—implied by the (smoothed) slopes of the line depicting the spending-income relationship.

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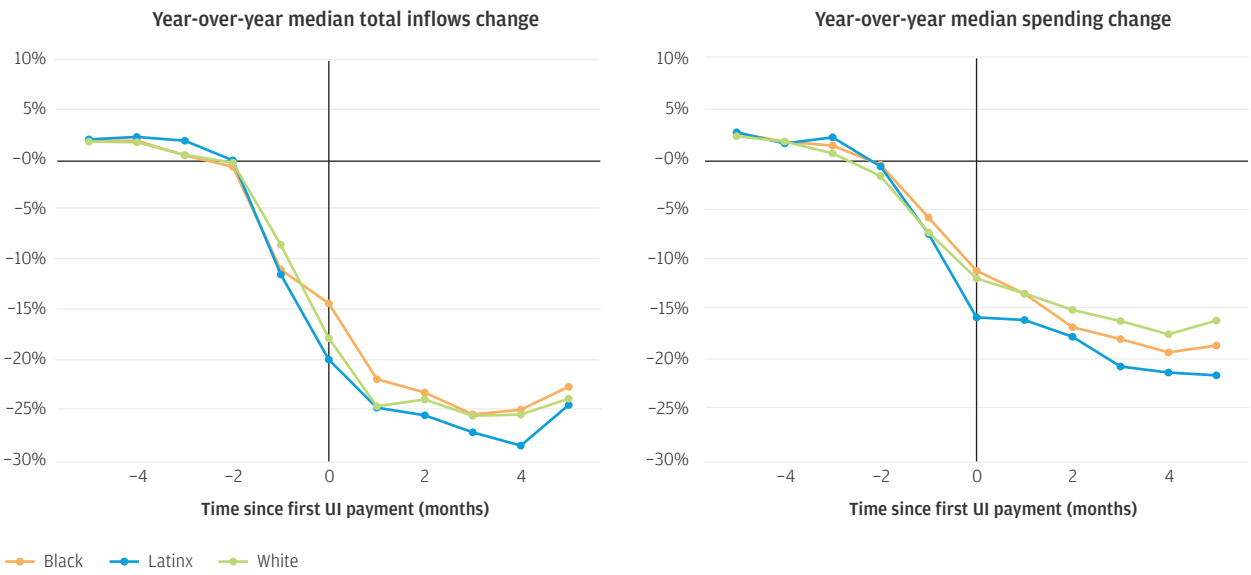
Finding Four

Black and Latinx households cut their spending to a greater extent than White families when faced with job loss, partially explained by their lower cash buffers and indicators of wealth.

Indicators of liquidity and financial wealth are lower for Black and Latinx households[13] in our data. This is true after controlling for pre-job loss income as well. These characteristics are in line with results from the Survey of Consumer Finances and prior Institute research, which shows wide gaps in wealth across racial lines in the US.[14] Consistent with the prediction from Finding 3, spending of the average Black and Latinx households in our data is more sensitive to income changes around the onset of unemployment. The analysis presented in this section describes how controlling for liquidity and wealth explains much, but not all, of the differences in MPC observed by race.

The job loss event study shown in Figure 8 plots median changes in spending and account inflows from five months prior to five months after the first month of UI payment receipt, denoted as time zero. Overall, we find that Latinx and Black households had deeper spending cuts than White households. Averaging over the six months after job loss, Black households have a median spending drop of 16.0 percent, White households have a drop of 14.8 percent, and Latinx households have a drop of 18.7 percent. However, Black households tend to have less severe inflow changes, because UI replacement rates are higher for low-income households by design. Black households have an average median total inflow drop of 21.9 percent, Latinx household have a drop of 24.9 percent, and White households have a drop of 23.4 percent.

Figure 8: Racial heterogeneity in median spending change and total inflow change around job loss from 2008 through 2019.



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Similar to dynamics seen in our overall sample, UI policy changes in 2020 had a substantial impact on the income and spending for the subset of our sample for which we are able to identify race. Expanded UI benefits supported income and spending increases for all households regardless of race, but the fixed dollar value of the supplement mattered more for Black and Latinx households, given their lower incomes (see Figure 9).

Motivated by differences in spend and total inflows around job loss, we apply a regression specification approach analogous to the baseline model described in Finding 1 to estimate MPC of households by race during a pre-COVID-19 baseline period. Income changes and other factors are interacted with race, allowing for analysis of heterogeneity in how income and liquidity affects consumption outcomes.

Figure 10 summarizes the results of the regression. After controlling for financial factors, racial gaps are notably smaller than those determined by financial variables. As in Finding 3, liquid balances decrease predicted income sensitivity markedly for each group. Households with high liquid balances—regardless of their income—have MPCs around 30 to 38 cents. Meanwhile, typical households with lower liquidity have MPCs ranging from 46 cents to almost 56. While financial variables explain much of the variation in income sensitivity, some disparities remain. Potentially, explanations of the remaining gap include omitted variables and the limited geographic profile of our race-identified sample.

Figure 9: Racial heterogeneity in spending and income dynamics around job loss from January 2020 to October 2020.

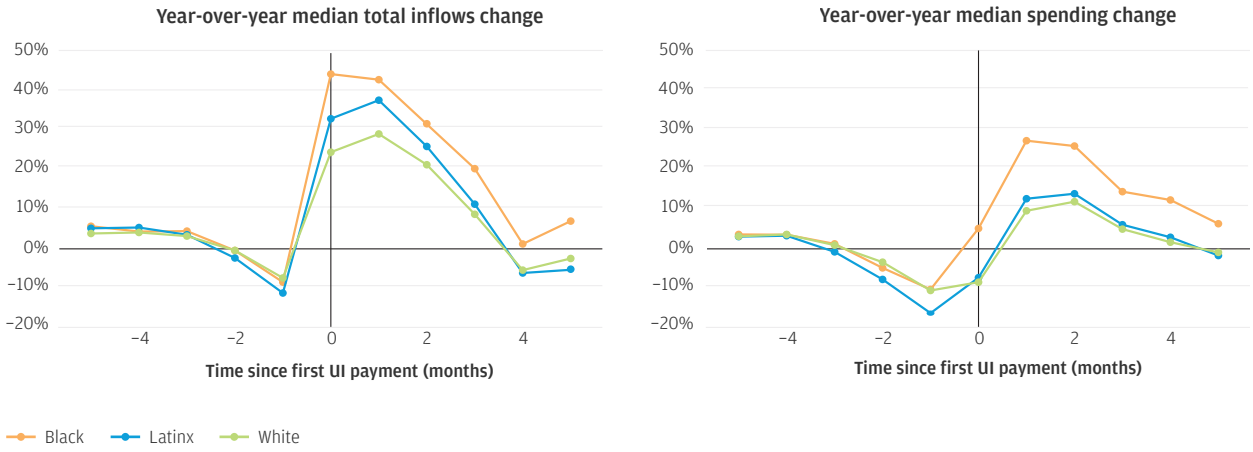

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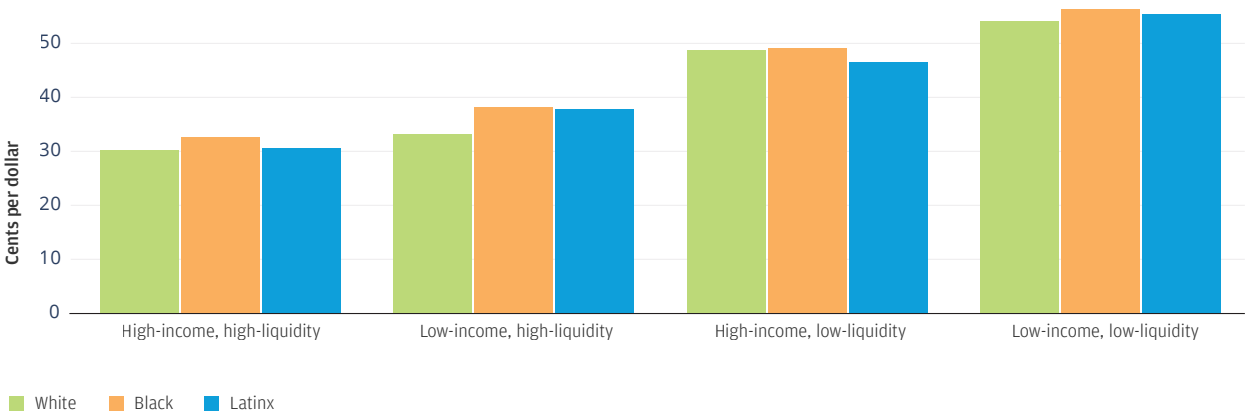
Figure 10: Financial factors drive most heterogeneity in MPC across race from 2008 through 2019, although some gaps remain.



Source: JPMorgan Chase Institute

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Conclusion and Implications

We use an expanded sample to explore the impact of job loss on spending from the Great Recession through COVID-19. Spending declines for the unemployed were sharper during the Great Recession than the subsequent expansion. However, after controlling for spending of the employed, we find little cyclical variation in the "causal" effect of job loss events on household spending prior to COVID-19. Since spring 2020, substantial increases in UI payment levels were associated with increases in spend for many receiving benefits through late 2020.

Despite stark differences in the economic environments that make up our sample, we find little variation in the sensitivity of spending to income across time or local unemployment conditions. A key metric for assessing the welfare effect of UI payments—the marginal propensity to consume out of income (MPC)—remained within 35 to 40 cents per dollar across the Great Recession, the expansion, and COVID-19. Similarly, after splitting our sample by local unemployment conditions, we found little meaningful variation. Instead, the vast majority of heterogeneity in spending patterns are seen across household-level characteristics, including the magnitude of the shock to income.

We find that high income, high liquid balances, and investor status all decrease the severity of spending declines during an unemployment spell. Liquidity plays a key role. Within income groups, households with lower cash balances are associated with higher sensitivity of spending to income. The size of the income shock matters for the spending response; MPCs are lower for substantial income declines. However, this dampening is much weaker for households with low liquid balances, meaning that the most financially vulnerable are more likely to experience large spending cuts.

Black and Latinx households, on balance, have higher MPCs, lower liquidity, and are less likely to be categorized as investors than White households. Our research finds that financial factors—namely, income and liquidity—explain most of the gap in the sensitivity of spending to income shocks associated with job loss.[15]

Implications

UI policy serves a critical role in the government's provision of insurance for households that lose their job. In addition to its role limiting the welfare costs of labor market volatility, UI provides a venue through which fiscal stimulus can be targeted towards households that are more likely to spend, helping stabilize aggregate demand. This report provides quantitative insights that inform policy design and impact analysis along the following lines.

- **Countercyclical UI benefit levels may offer an effective means of stabilizing demand.** We document a relatively consistent consumption effect of UI across business cycles. MPC estimates and the role of household financial health indicators were roughly similar in our sample across the Great Recession, expansion, and pandemic. We also documented that the absolute spending declines were more pronounced during the Great Recession, particularly in 2009. These findings carry several demand management and macro stabilization policy implications.

  First, the use of UI to stabilize consumer demand can be effective even when the bulk of the population—those still employed—may be increasing savings in response to uncertainty. Targeting fiscal stimulus towards those with higher propensities to spend thus provides better "bang-for-buck."

  Second, labor market disincentives associated with UI may be less pronounced during recessions, as suggested by some academic researchers and policymakers.[16] If the social costs of providing UI payments are lower during economic downturns—and, as our results imply, the social benefits are stable over time—then, countercyclicality in UI may improve social welfare.

UI provides a venue through which fiscal stimulus can be targeted towards households that are more likely to spend.

Finally, even though we find little difference in the causal effect of job loss on spending changes across the cycle—that is, the change in spend relative to a control group—the absolute changes in spending may

matter. Consumption declines for unemployed households were deeper during the Great Recession, after controlling for a number of household-level characteristics. Sharp spending declines are an understandable response to a negative shock, but they are also indicative of avoidable welfare costs.

- **Targeting income supports with consideration to wealth inequality and racial equity can limit welfare losses in the face of job loss and stimulate aggregate demand.** This report documents how wealth disparities translate into the well-being of families during periods of heightened uncertainty. Even within income groups, racial gaps in financial asset holdings are wide, leaving Black and Latinx households more likely to experience large declines in spending. The unemployment rate for Black and Latinx households has historically been notably higher than White households, a gap that widens during downturns. This persistent feature of economic cycles calls out the need for deep structural reform; in the near-term, UI benefits can help blunt the welfare impact of racial inequality in the labor market.

  The current UI program's payment caps help target these funds to the most vulnerable, but, empirically, many lower income households have faced replacement rates well below 100 percent. Raising benefit levels could channel valuable support, in welfare terms, to those families. Additionally, many middle- and higher-income families carry limited liquidity and are subject to large consumption shocks after job loss. This report documents large income sensitivity for middle- and high-income households that hold low cash balances, implying that raising UI caps would better support households with elevated expense levels such as families with multiple dependents.

- **Efficient delivery of benefits can avoid sharp spending declines for the most financially vulnerable.** For many households that hold relatively little in liquid assets, speed of payment delivery matters. The much closer link between spending and current income exhibited by these households is a sign of the welfare costs of delays in the delivery of relief. The extraordinary pace of job loss occurring at the onset of the pandemic in the U.S. led to widely-documented delays in the receipt of UI payments, which as shown in previous Institute research, led to steeper consumption drops among jobless workers who had to wait longer for benefits.[17] Separate stimulus payments rolled out in April 2020 provided a needed bridge, likely offsetting the potential distress. However, those stimulus checks provided only a limited backstop for those without jobs. Reducing the time between the loss of earnings and the receipt of benefits would offer crucial support to households with little cash on hand.

About the Data

This report is based on a de-identified dataset of Chase checking account customers. An activity filter captures accounts with enough transactions that we are confident that the households' transactions with the bank are representative of their income and spending dynamics. We require households to conduct at least five transactions each month for over a year to be included. This report is focused on job loss, which we identify with account inflows identified as UI payments. A core sample of approximately 2.2 million households that experienced unemployment from 2007 to 2020 remain after this filtering process.

We measure liquid balances, defined as the sum of checking and savings account balances for each month.

Additionally, we identify investors as households with transactions of their checking account vis-à-vis a personal investment account totaling over 1,000 dollars over the sample period, an approach used in prior Institute research.[18]

Summary statistics for our job loss sample are included in Table 2 below.

Table 2: Sample summary statistics.

Total count		**2,184,280**	
		Investors	**Non-investors**
Percent of total count		20%	80%
Median liquid balance at t=0		$6,249	$2,818
Pre-job loss median spend		$5,811	$3,511
Gender		**Investors**	**Non-investors**
Male		60%	53%
Female		40%	47%
Median age		45	39

		Income quartile 1 (lowest)	**Income quartile 2**	**Income quartile 3**	**Income quartile 4 (highest)**
Median	**Pre-job loss monthly inflows**	$1,753	$3,050	$4,931	$9,608
	Liquid balance/spend	0.50	0.52	0.56	0.62
	Age	35	38	42	45
	Percent investors	10%	15%	22%	36%
	Percent female	50%	47%	44%	40%

Source: JPMorgan Chase Institute

Race information in our dataset is derived from self-reported voter registration demographics,[19] which has been detailed in prior Institute research.[20] This information is available for three states with sizable populations of Black and Latinx-led households: Florida, Louisiana, and Georgia. Using these data, we tag the household head with the reported race. Limiting our sample to the racial tagged population leads to a reduction in sample size as reported in Table 3.

White households in our data hold higher liquid balances and are more likely to be investors than Black and Latinx households. In relation to the SCF, we find Black and Latinx households in our sample have slightly higher incidences of investor status, while White households have slightly lower amounts.

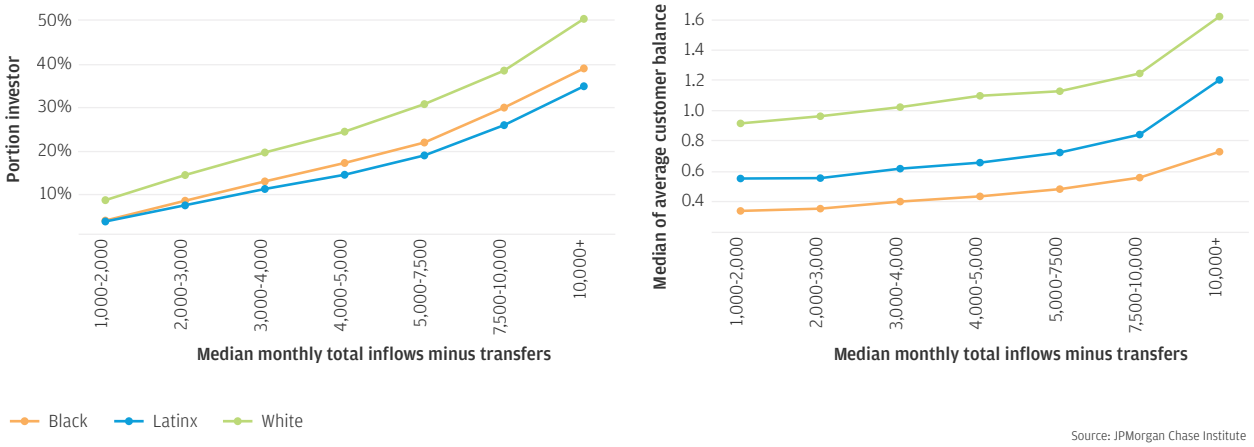
Furthermore, we find that racial gaps in financial health persist within income brackets, shown in Figure 12. In terms of liquid balances in checking and savings accounts, White households at the lowest end of the income distribution, where most of the sample exists, tend to save over a month's worth of consumption, while Black households save only somewhat more than half that amount even in the highest bucket of income, above $10,000 a month. Latinx households fare slightly better, with the highest income group saving a month's worth of spend in their accounts. Furthermore, there is a persistent racial gap in investor status. White households have about a 10 percentage point higher portion of investors than person of color households across the income distribution.

Table 3: Demographic and financial characteristics of households by race.

Summary statistics of UI sample for which race is identified from 2008 to 2020 at t=0	Black	Latinx	White
Count of households	8,512	9,984	21,072
Share female household head	57%	49%	47%
Share boomer household head	37%	33%	49%
Share Gen-X household head	43%	42%	35%
Share investor household	19%	17%	30%
SCF benchmarking:			
Share has brokerage account	5.7%	5.1%	22.1%

Source: JPMorgan Chase Institute, Survey of Consumer Finances 2019

Figure 11: Heterogeneity in balances and investor status by race underscores racial inequalities present in household financial health.



Source: JPMorgan Chase Institute

View text version

Appendix 1: Measuring how financial factors matter for consumption smoothing

Here, we introduce our framework for making sense of the role of wealth and liquidity the spending response to unemployment. A linear regression framework is used for our baseline estimates. The quantile regression that we prefer targets the median instead of the mean, reducing the impact of outliers. Percent change in spending is the outcome variable of interest, which is measured as monthly account outflows (less transfers) relative to the same month one-year prior. To control for changes in spending affecting the employed population, the median year-over-year spend change for the same month for households that are not observed as UI recipients in the same state is subtracted off. The measure for person *i* in period *t* is $c_{\_it}$ in the regression equation below, wherein *t* refers to the months prior to job loss or the month of first UI receipt that a household receives UI payments. In other words, households exit the regression in subsequent *t*'s as household discontinue receiving UI benefits. We run either the regression separately for each *t* or pool the *t* over several months. In addition, some households show up in the regression multiple times, as we distinguish separate UI receipt periods with a buffer of seven months, and the *n* of each regression is job loss events.

Spending is related to a household's income change *(I)*, financial variables *(F)*, and controls *(X)*. Financial metrics are measured relative to the year-ago spend level, enabling normalized dollar-for-dollar comparisons between income and spend change. Importantly, interactions between income changes and financial variables *(F*I)* enable our analysis of heterogeneous effects of income shocks across the spectrum of financial vulnerability.

Regression equation:

$$c_{it} = \alpha + b_I I_{it} + \boldsymbol{b_F F_{it}} + \boldsymbol{b_{FI} F_{it}} * I_{it} + \boldsymbol{b_X X_{it}} + e_{it}$$

Note: Bold letters denote vectors.

The variables comprising the bold variable ***F*** is the normalized income level prior to job loss, cash balances, and investor status. Cash balances are normalized relative to pre-job loss expenses and by taking logs to reduce the impact of outliers. Investors are households identified as having transactions between their checking account and a personal investment account. Demographic and other controls in ***X*** include gender, age, and the local unemployment rate.

Our baseline estimates, presented in Table 4, indicate that income level, liquidity, and investor status all helped explain improved consumption smoothing outcomes. The level of local unemployment, relative to other counties, provided little additional explanatory power for spending. However, the rise in nationwide unemployment, particularly in 2009, corresponded to deeper spending cuts, as described in the Introduction and Finding 4.

Our baseline regression covers instances of job loss during the 2012 through 2019 expansion and encompasses over one million job loss events. Takeaways from the analysis are detailed in the following subsections.

Table 4: Regression of spending shows how income, liquidity, and wealth affect spending after job loss.

Dependent variable: percent change in outflows ex-transfers							
	Event time: t (months)						
	t 0	t 1	t 2	t 3	t 4	t 5	
Pct chg inflows ex-transfers (Δ I)	0.406***	0.424***	0.434***	0.445***	0.466***	0.471***	Main MPC + MPC shifters
	(0.0014)	(0.0019)	(0.0022)	(0.0025)	(0.0030)	(0.0035)	
Δ I-Squared	0.034***	0.097***	0.126***	0.147***	0.186***	0.175***	
	(0.0004)	(0.0006)	(0.0007)	(0.0009)	(0.0011)	(0.0013)	
Δ I* Z-score(log_ixt)	-0.076***	-0.055***	-0.036***	-0.029***	-0.016***	-0.025***	
	(0.0006)	(0.0008)	(0.0009)	(0.0011)	(0.0013)	(0.0015)	
Δ I* Investor dummy	-0.035***	-0.046***	-0.041***	-0.043***	-0.044***	-0.060***	
	(0.0011)	(0.0014)	(0.0017)	(0.0020)	(0.0023)	(0.0027)	
Δ I* Z-score(log balances)	-0.113***	-0.121***	-0.119***	-0.123***	-0.129***	-0.124***	
	(0.0005)	(0.0006)	(0.0007)	(0.0009)	(0.0010)	(0.0012)	
Δ I* Local unemp. rate	0.116***	0.227***	0.230***	0.272***	0.283***	0.268***	
	(0.0196)	(0.0264)	(0.0308)	(0.0362)	(0.0433)	(0.0512)	
Intercept	-0.067***	-0.069***	-0.104***	-0.119***	-0.136***	-0.129***	Intercept shifters
	(0.0030)	(0.0035)	(0.0039)	(0.0044)	(0.0049)	(0.0058)	
Z-score (log balances)	0.059***	0.045***	0.039***	0.034***	0.030***	0.024***	
	(0.0004)	(0.0005)	(0.0005)	(0.0006)	(0.0007)	(0.0008)	
Investor dummy	-0.007***	-0.004***	-0.003**	-0.004**	-0.003	0.003	
	(0.0013)	(0.0014)	(0.0016)	(0.0018)	(0.0020)	(0.0023)	
Local unemp. rate	0.067**	0.014	0.184***	0.266***	0.284***	0.211***	
	(0.0262)	(0.0299)	(0.0336)	(0.0382)	(0.0434)	(0.0521)	
Controls*	Yes	Yes	Yes	Yes	Yes	Yes	
N	1,204,313	890,884	674,447	514,479	389,096	289,858	
Pseudo R-squared	0.19	0.18	0.18	0.18	0.18	0.18	

Standard errors in parentheses. *p < 0.1, **p < 0.05, ***p < 0.01

*Controls include gender, z-scored income level, age, and year.

Source: JPMorgan Chase Institute

The role of liquid balances

Liquid balances are found to increase the level of the spending change and reduce the sensitivity to income. At t=0, the first month of UI inflow, we find that a one standard deviation increase in liquid balances, relative to expenses, is associated with a positive spend change of 5.9 percentage points. This effect diminishes somewhat over the duration of an unemployment spell. In terms of income sensitivity, a one standard deviation rise in liquid balances, predicts lower spending sensitivity to income by 11 cents per dollar. This is in line with past Institute work which finds that households with limited liquid assets are significantly less likely to smooth consumption in the face of income fluctuations (Farrell et al. 2016; Farrell et al. 2018).

Income tier and investor status

Other indicators of affluence also help dampen the direct link between income and spending changes over the course of an unemployment spell. These indicators are where a household falls on the income distribution prior to job loss and investor status. Investor status reduces MPC by 4 to 6 cents, while each standard deviation higher (log) income reduces MPC by 2 to 7 cents. These findings are consistent with past academic and Institute research documenting that wealthier households have relatively lower MPCs.

Local labor market conditions

We also explore whether local labor market conditions influence the spending response to job loss. Where unemployment is elevated, households may expect that finding a job will be more difficult and adjust spending downward. The Bureau of Labor Statistics county-level unemployment rates are used as a proxy for conditions. We find that the connection between unemployment and spending is very minor, after controlling for household characteristics. Higher unemployment is correlated with modestly higher baseline spending, but also slightly more income sensitivity. This makes the net effect on spending ambiguous for income declines. Household characteristics are more impactful than local labor market differences in our framework. A possible confounding factor preventing a more intuitive relationship is that areas with high local unemployment may have already experienced spending pullbacks, reducing space for further cuts around job loss events.

Appendix 2: Spending sensitivity in our model including race

Table 5 shows coefficient estimates of our regression framework, augmented to test heterogeneity by race. It illustrates how sensitivity to income shocks varies by race and by financial indicators. This model pools the observations from the first month of UI receipt to five months after job loss (six months total).

The regression results indicate that White households have a MPC of about 44 cents per dollar, before accounting for the effect of liquid balances and other factors. Meanwhile, Black households have an additional statistically significant effect of 3 cents (total MPC of 47) and Latinx families of 1 cent (total MPC of 45). For White families, increasing liquidity by 1 standard deviation decreases the MPC 11 cents, increasing income by 1 standard deviation up the income distribution decreases the MPC by 1 cent, and being an investor decreases MPC by 2 cents. For Black and Latinx families, the marginal effect of balances is slightly dampened, with a decrease in 1.6 cents and 1.9 cents, respectively, less in MPC for each month of spend held in liquid balances. For Latinx and Black households, the addition of income and investor status is not significantly different from the effect of White households.

Regression-predicted MPCs that appear in Figure 10 (Finding 4) use household attribute values shown in Table 6. These represent the median values within each bucket. Each group is determined by terciles in liquid balance and income level, respectively, consistent with the procedure in Finding 1.

Table 5: Model-predicted sensitivity to income by race.

MPC	Estimate	Marginal effect of moving 1 standard deviation - balance scaled distribution	Marginal effect of moving 1 standard deviation - income distribution	Marginal effect of investor status
White	0.442***	-0.105***	-0.007**	-0.020**
	(0.006)	(0.005)	(0.003)	(0.010)
Marginal effect				
Black	0.027***	0.016**	-0.009	-0.010
	(0.010)	(0.008)	(0.006)	(0.019)
Latinx	0.006	0.019**	-0.002	0.017
	(0.009)	(0.008)	(0.006)	(0.020)

Standard errors in parentheses. *p< 0.1 **p< 0.05 ***p< 0.01

Model includes year fixed effects, demographic controls, investor controls.

N	124,872
R-squared	0.33

Source: JPMorgan Chase Institute

Table 6: Values of archetypes used in MPC prediction.

		High income, High liquidity	High income, Low liquidity	Low income, High liquidity	Low income, Low liquidity
Balances	**Median**	1.97	0.12	4.60	0.17
Income level	**Median**	$8,876	$7,121	$2,736	$2,394
Investor status	**Share**	0.50	0.31	0.21	0.10

Source: JPMorgan Chase Institute

Appendix 3: Customer counts by archetype

Income and liquidity indicators are positively correlated. Table 7 reports the share of the unemployment sample used in this report by each archetype. About 40 percent of the population falls in either the low-income, low-liquidity group or in high-income, high-liquidity. The seven other categories contain the remaining 60 percent. While low in total population count, we include the low income, high-liquidity and high income, low-liquidity archetypes in our main analysis to sketch the limits of the distribution of the groups, the middle income and middle liquidity groups fall in between the corners.

For each race group used in this report—Black, Latinx, and White—Figure 14 shows the sample's share of households that fall into each archetype. Black and Latinx households tend to overwhelmingly be in the low income and low-liquidity category, while White household tend to be more evenly distributed between low income, low-liquidity status and high income, high-liquidity status, similar to the larger sample of households experiencing job loss as in Table 7. In addition, Table 8 shows the contents of Figure 14 in table form, in addition to the excluded archetypes.

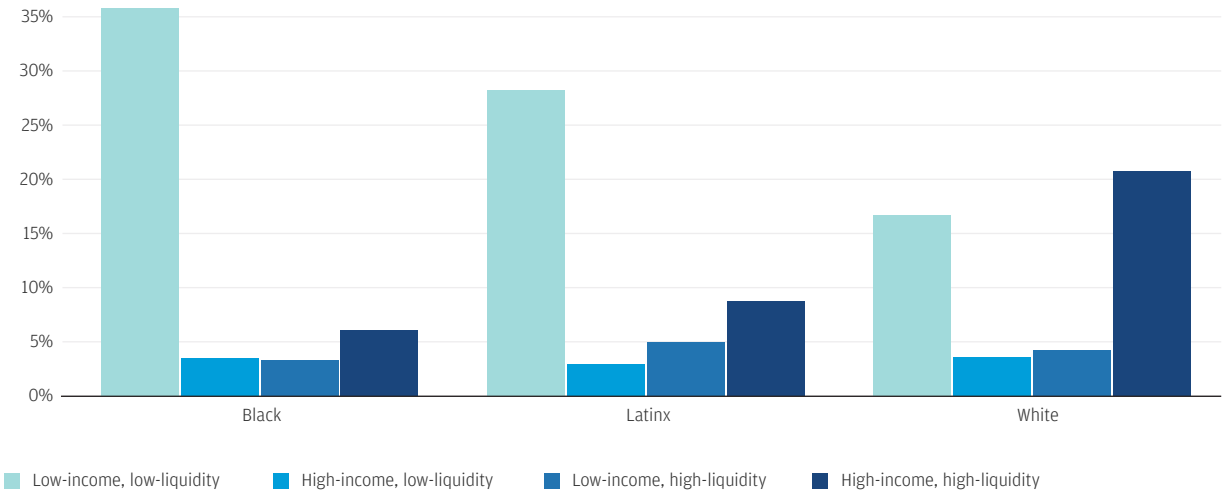
Table 7: The distribution of the archetype used in the analysis shows households tend to be in high income, high-liquidity or low income, low-liquidity archetypes.

	High liquidity	Middle liquidity	Low liquidity
High income	**21%**	10%	**4%**
Middle income	11%	13%	9%
Low income	**3%**	10%	**19%**

Note: The bolded archetypes are the groups utilized in prior figures and findings, while the non-bolded groups are the omitted categories.

Source: JPMorgan Chase Institute

Figure 12: Black and Latinx households tend to fall more in the low income and low-liquidity archetype than White households.



Note: For each race, the figure shows the percent of households in our sample that falls into the four selected archetypes. For example, the figure indicates that approximately 36 percent of Black households in our sample fall in the low-income, low-liquidity category, versus only 17 percent for White households. The bars for each race do not sum to 1, because the categories for mid-income and mid-liquidity are omitted for readability.

Source: JPMorgan Chase Institute

View text version

Table 8: Percent of households falling into each category, by race.

Income archetype	Liquidity archetype	Black	Latinx	White
High	**High**	**6%**	**9%**	**21%**
High	Middle	6%	7%	12%
High	**Low**	**3%**	**3%**	**4%**
Middle	High	5%	8%	10%
Middle	Middle	13%	13%	14%
Middle	Low	15%	13%	10%
Low	**High**	**3%**	**5%**	**4%**
Low	Middle	11%	13%	9%
Low	**Low**	**36%**	**28%**	**17%**

Note: The bolded archetypes are the groups utilized in prior figures and findings, while the non-bolded groups are the omitted categories. Columns may not add to 100 percent due to rounding.

Source: JPMorgan Chase Institute

Data Explanation

Figure 1: Increases in payments during the pandemic boosted spending and income for those on UI.

Line graph of event studies around job loss at t = 0, spanning from 5 months before job loss to 5 months after job loss. The lines show year-over-year median total inflows change and year-over-year median spend change, split into three time period-based sub groups: the Great Recession, the expansion, and the COVID-19 pandemic. The lines for the expansion and the Great Recession show inflow and spending decreases after job loss, while the line for COVID-19 shows inflow and spending increases due to different government policies including expanded unemployment insurance.

View chart version

Figure 2: Spending of the unemployed was supported by supplements during the pandemic, contrasting with the Great Recession.

Line chart plotting predicted values for median change in spending around a job loss event. The predicted median spend change is negative from the start of the exhibit in 2008 until the first half of 2020. The line chart diverges into two lines in March of 2020. One line shows the median predicted spend change in March 2020 onwards using realized monthly observations for inflows, with predicted spend change rising sharply, becoming positive, and surpassing 10 percent in October of 2020. The other line uses the pre-COVID-19 median change in income to predict spend change during March 2020 onwards to serve as a counter-factual example had there been no positive income shocks from policies during the COVID-19 period. The counter-factual line predicts a drop in spend change of over -10 percent and remains negative for all of 2020.

View chart version

Figure 3: The spending gap between the employed and unemployed was fairly stable from 2008 to 2019.

Line chart plotting the 6-month rolling average of year-over-year spend change for two groups of clients from 2008 to 2019. One line represents the spend change for those who have received unemployment insurance and another line represents the spend change of those who have not (e.g. the employed). The gap between the two lines remains stable over time, with the spend change for the unemployed above that of the spend change of the unemployed. Both lines illustrate stable spend change during the expansion and drops in spend change during the Great Recession. With the exception of the financial crisis, the spend change of the employed generally remains positive, while the spend change for those receiving unemployment insurance remains negative.

View chart version

Figure 4: Regression estimates suggest relatively stable propensity to spend out of UI across eras.

Bar plot showing three marginal propensities to consume (MPCs) by time periods. The Great Recession era has an MPC of 39 cents per dollar, the expansion era of 40.5 cents per dollar, and the COVID-19 era of 35.2 cents per dollar.

View chart version

Figure 5: Income sensitivity after job loss is relatively constant across varying local unemployment conditions.

Bar plot illustrating marginal propensities to consume for two groups around three differing local labor market conditions. From left to right the local labor market conditions represents a low local unemployment rate, the median local unemployment rate, and a high local unemployment rate. For the two groups, one represents the marginal propensity to consume (MPC) estimated with local labor market conditions, while the other group represents an MPC estimated with local labor market conditions held constant. With local labor market conditions, the MPCs for low and high local unemployment are respectively 1 cent below and above the MPCs where they are held constant.

View chart version

Figure 6: Higher income and higher liquidity predicts lower income sensitivity.

Bar plot showing four marginal propensities to consume (MPCs) by archetypes of consumers. The high income, high-liquidity households have an MPC of 23.7 cents per dollar; high income, low-liquidity households have an MPC of 28.2 cents per dollar; high income, low-liquidity households have an MPC of 45.8 cents per dollar; high income, low-liquidity households have an MPC of 52.1 cents per dollar.

View chart version

Figure 7: Lower liquidity predicts higher MPCs across income shock sizes.

A panel of two exhibits. The left exhibit is a line chart illustrating the non-linear relationship between income change (x-axis) and spend change (y-axis) across a combination of four income-liquidity archetypes (e.g. low-low, low-high, high-low, high-high). The line chart illustrates around smaller income declines spend changes may look similar, but with larger spend declines (e.g. 30 percent or more) one can observe a gap between low-liquidity groups, who experience steeper spending cuts, and high-liquidity groups. The right exhibit is a set of marginal propensities to consume (MPC) bar plots by income change. For each income change there are four bars representing one of the four income-liquidity archetypes. The income changes are -33 percent, -25 percent, -10 percent, and 0 percent. Across the four income changes the MPC of low-liquidity groups is persistently higher than that of high-liquidity groups, be they high or low income.

View chart version

Figure 8: Racial heterogeneity in median spending change and total inflow change around job loss from 2008 through 2019.

Line graph of event studies around job loss at t = 0, spanning from -5 months before job loss to +5 months after job loss from the period of 2008 through 2019. The lines show year-over-year median total inflows change and year-over-year median spend change, split into three race sub groups: White, Black, and Latinx. The lines show spending decreases after job loss for all three groups, but overall Latinx and Black households had deeper spending cuts than White households. However due to unemployment insurance replacement rates, Black households have slightly lower inflow drops.

View chart version

Figure 9: Racial heterogeneity in spending and income dynamics around job loss from January 2020 to October 2020.

Line graph of event studies around job loss at t = 0, spanning from -5 months before job loss to +5 months after job loss from the period of January 2020 to October 2020. The lines show year-over-year median total inflows change and year-over-year median spend change, split into three race sub groups: White, Black, and Latinx. The lines show spending increases after job loss for all three groups, but overall Latinx and Black households had higher spending and income incomes then White households, showing the importance of unemployment insurance for Black and Latinx households.

View chart version

Figure 10: Financial factors drive most heterogeneity in MPC across race from 2008 through 2019, although some gaps remain.

Bar plot showing twelve marginal propensities to consume (MPCs) by race— Black, White, and Latinx—and by archetypes of consumers— high income, high liquidity; high income, low liquidity; low income, high liquidity; and low income, low liquidity. Overall, differences in the values of the MPCs of the groups are driven more by the archetypes through holdings of income and liquidity than by race of the group. However, Black and Latinx households have higher occurrence in the low income, low-liquidity group, while White households tend to have higher occurrence in the high income, high liquidity.

View chart version

Figure 11: Heterogeneity in balances and investor status by race underscores racial inequalities present in household financial health.

This plot shows two panels of line plots. On the left is the median percent of household investor status by median income buckets, on the right is the median average balance in dollars of households by median income buckets. The lines are split by race: Black, White, and Latinx. Overall, White households tend to have higher percentage of investor status and higher dollar amounts of balances than Black and Latinx households.

View chart version

Figure 12: Black and Latinx households tend to fall more in the low income and low-liquidity archetype than White households.

This plot shows bar plots of the percent in each archetype bucket by race. Black and Latinx households tend to have much larger occurrence in the low income, low-liquidity bucket than White households, while White households tend to have a higher occurrence in the high income, high-liquidity bucket.

View chart version

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Endnotes

1 The outstanding number of unemployed individuals in the U.S. has not fallen below five million since the 1970s. Most of these cases involve job loss within the previous twelve months. Source: FRED, series UNEMPLOY.

2 The Black unemployment rate rose by as much as 9 percentage points around the Great Recession, compared with 5 percentage points for White individuals. (FRED series: LNS14000006 (Black); LNS14000003 (White))

3 Bhutta, Chang, Dettling, and Hsu (2020) provides a review, leveraging data from the Federal Reserve's Survey of Consumer Finances.

4 See, for example: Farrell, Ganong, Greig, and Noel (2016) and Kroft and Notowidigdo (2016).

5 In this section, we consider absolute spending changes, rather than spending changes relative to the control group. Changes in control group spend over the business cycle—slower growth during the Great Recession, and faster growth in the late stages of the expansion—are depicted in Appendix 1.

6 The replacement rate concept measures the amount of lost income that is "replaced" by UI payments. A measure of 100 percent, for example, signifies that benefit payments matched each dollar of lost earnings over a period. See, for example, Ganong, Noel, and Vavra (2020) for a discussion of statutory replacement rates during the pandemic.

7 See, for example, Congressional Research Service report "Unemployment Rates during the COVID-19 Pandemic" (May 2021).

8 To represent the "typical" household, we consider those with average values of financial and demographic factors that appear in our analytical framework, which is presented fully in Finding 1.

9 Compositional change comes from two main sources: (1) changes due to differences in the households losing their job at different points of the economic cycle; and (2) evolution of Chase's retail footprint over time.

10 See, for example, Sahm, Shapiro, and Slemrod (2010) and Tullio and Pistaferri (2014).

11 Higher unemployment conditions are associated with lower median household incomes, lower liquid balances, and lower share of the sample classified as investors. As described in Appendix 1 and Finding 3, these characteristics contribute to higher MPCs.

12 Havranek and Sokolova (2020) present a survey of prominent academic and policy studies on MPCs. Typical MPC values used for analysis of fiscal policy range between 20 to 50 cents per dollar.

13 We use the race of the primary individual authorized to use an account.

14 See Bhutta et al. (2020) and Farrell et al. (2020a)

15 A gap of over 20 cents per dollar exists in the MPCs of households with high-versus-low income and liquidity characteristics. But after grouping households with similar income and liquidity profiles, no racial gap exceeds 5 cents per dollar.

16 Kroft and Notowidigdo (2016) provide a survey of these views. Petrosky-Nadeau and Valleta (2020) and Gangong et al. (2020) found that the $600 UI supplement did not significantly discourage job search during the peak of the pandemic.

17 See Farrell et al. (2020b).

18 See Farrell and Eckerd (2021).

19 See Farrell et al. (2020a).

20 See, for example, Carroll, Slacalek, Tokuoka, and White (2017) and Farrell et al. (2020).

Acknowledgments

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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