Family cash balances, income, and expenditures trends through 2021

JPMorgan Chase & Co. Institute

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A distributional perspective

MAY 2021

Abstract

The COVID-19 pandemic resulted in unprecedented economic changes that impacted families' financial positions. In this report, the JPMorgan Chase Institute uses administrative banking data to assess checking account balances in conjunction with household income and spending. We analyze activity from 1.7 million families who were active checking account users between December 2018 and January 2021 to understand changes in household finances during the COVID-19 pandemic. We find that cash balances temporarily increased by roughly 70 percent after the arrival of stimulus payments in April 2020 and January 2021, with lower-income and younger account holders experiencing the largest balance increases on a percent basis. Balances fell continuously after the stimulus payments, with faster spend-down for families that are lower-income, younger, or working in essential industries. Furthermore, the mechanisms for initial pandemic balance increases differed by family income. Despite greater job losses, low-income families experienced balance increases driven by increases in income, due in part to government supports. High-income families, in contrast, experienced balance increases despite decreases in account inflows because of large concurrent decreases in account outflows. Altogether, our results offer new insights into families' financial lives and cash balances during the COVID-19 pandemic, and contribute to the ongoing understanding of the economic impacts of the pandemic and associated government supports.

About the Institute

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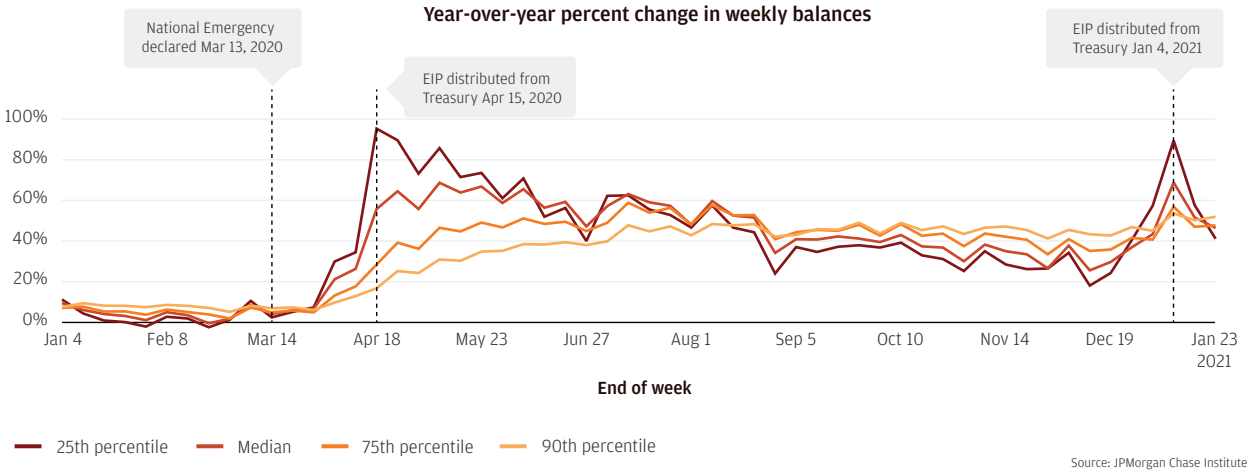
Executive Summary

Finding 1: Cash balances increased temporarily by roughly 70 percent in April 2020 and January 2021, after the arrival of stimulus payments, but fell continuously after those payments.

Balances increased across the distribution, with greater relative percent changes at the low end



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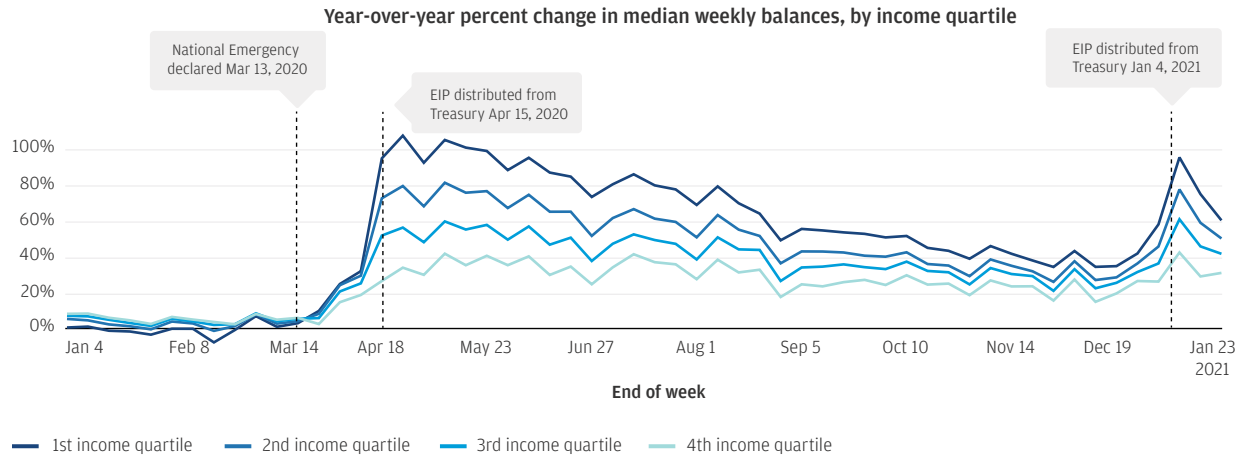
Finding 2: Households with lower starting liquid balances—lower-income and younger account holders—experienced the largest balance increases on a percent basis, but lost those initial balance gains the fastest.

Low-income families saw the greatest year-over-year percent balance gains, but depleted those gains faster than high-income families



Note: We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

Source: JPMorgan Chase Institute

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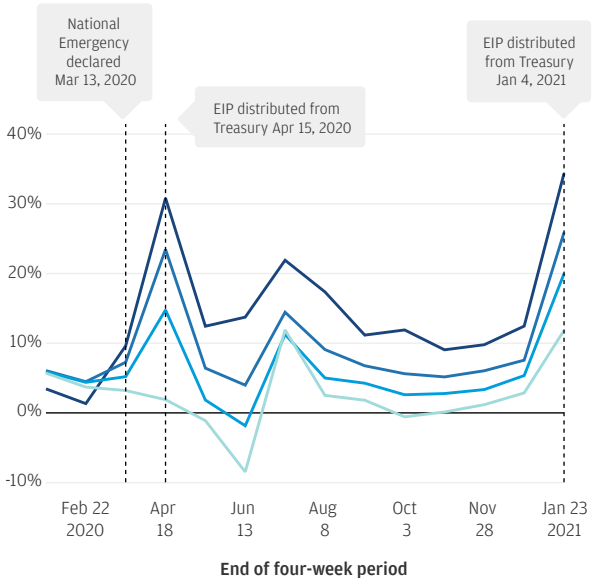
Finding 3: We see faster spend-down in liquid assets among families with essential workers.

Finding 4: Initial pandemic balance increases for low-income families were driven by increases in account inflows, while high-income families offset decreases in inflows by larger decreases in outflows.

Balances grew initially due to increased account inflows and decreased outflows

Year-over-year percent change in median account inflows, by income quartile (four-week periods)



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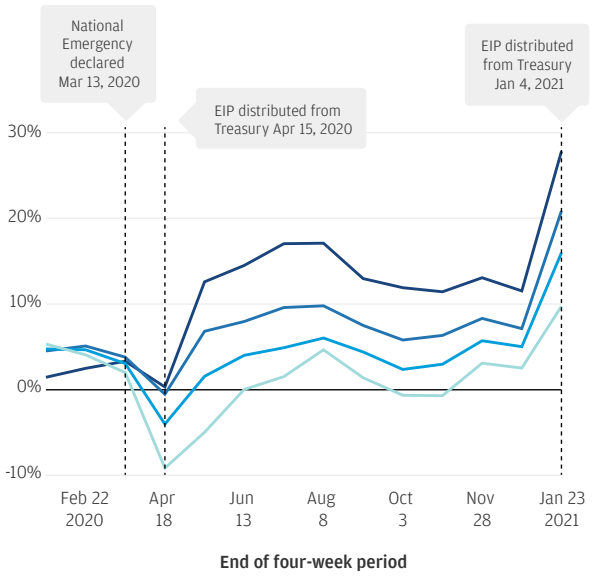
Year-over-year percent change in median account outflows, by income quartile (four-week periods)



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1st income quartile 2nd income quartile 3rd income quartile 4th income quartile

Note: We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

Source: JPMorgan Chase Institute

Finding 5: Income increased for low-income households despite greater job losses, due in part to government supports.

Finding 6: After initial spending decreases across the income distribution, low-income families rebounded to higher-than-usual spending while high-income families remain roughly at parity with prior trends.

Introduction

More than a year after the declaration of national emergency on March 13, 2020, the COVID-19 pandemic continues to constrain economic activity in unprecedented ways. Restrictions on group gatherings and non-essential outings make certain businesses untenable, leading to layoffs and closures. In other industries, remote working has become the new normal, leading to dramatic shifts in daily needs and routines for employees. Schools have likewise struggled to reopen, with some forced back into remote instruction after increases in infections.

As families work to adapt to these frequently-changing conditions, economic health and stability are top of mind for policymakers. The most vulnerable among us have been impacted the most, with lower-income earners facing higher unemployment rates than their higher-earning counterparts (Ganong et al. 2020). The government responded with massive interventions to support households financially by funding stimulus checks, expanding and supplementing Unemployment Insurance (UI), and providing relief on debts.

In this report, we shed light on families' financial positions during the pandemic, and how changes in behavior and policy have played a role. Using patterns in liquid balances as a lens into household finances, we aim to understand how the pandemic has affected financial vulnerability. Specifically, we focus on two main questions. First, **how have liquid asset balances changed for families during the COVID-19 pandemic, and how does this differ across families—by demographic characteristics and industry of employment?** And second, **what are the drivers of these observed changes in balance? Specifically, how have consumer income, spending, and debt payments changed during the pandemic?**

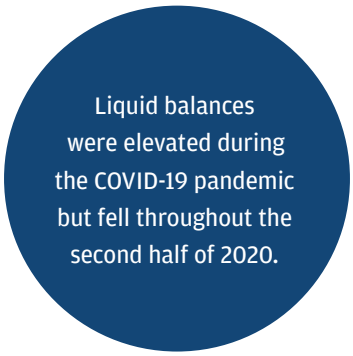
To answer these questions, we use a data asset based on the daily balances, inflows, and outflows of Chase personal checking accounts[1], from January 2019 through January 2021. We focus on a sample of 1.7 million families who have been active checking account users since December 2018[2].

Administrative banking data provides a unique, high-frequency lens into consumer finances, with transaction-level views into income and expenditures. Our ability to categorize those transactions enables us to observe family-level income, which we can use to show our results across the income distribution. Furthermore, we are able to isolate labor income and UI payments from other account inflows and observe industry of employment for a subset of our sample. So too, are we able to distinguish between spending and debt payments among outflows.

We emphasize two main caveats to our data asset: First, we use checking account balances as a window into families' liquid balances but acknowledge that a full liquid balance picture would include additional types of accounts, including those at other financial institutions.

Second, we rely on direct-deposited paychecks to measure labor income and industry of employment. Income received via other channels will not be captured in our measurements of these concepts. In addition, our primary income metric reflects take-home income, different from gross or pre-tax measures of income reflected in most public data sources.

Overall, we find that liquid balances were elevated during the COVID-19 pandemic but fell throughout the second half of 2020. Balances rose again with the second round of Economic Impact Payments (EIP) in January 2021. These patterns exist across the distribution of balances, but with a larger initial rise followed by a faster subsequent decline in liquid balances for families with lower starting balances, mainly lower-income families, or those with younger primary account holders. For most families, balances grew despite elevated outflows because of even larger increases in inflows, but high-income families experienced the reverse: balances grew despite decreases in inflows because of concurrent cuts in outflows.



Finding One

Cash balances increased temporarily by roughly 70 percent in April 2020 and January 2021, after the arrival of stimulus payments, but fell continuously after those payments.

Figure 1a shows weekly[3] mean and median checking account balances for two series: February 2019 through January 2020 and February 2020 through January 2021. Balance levels reflect a family's purchasing power, and changes here shed light on changes in ability to procure additional goods and services. Average balances rose throughout the spring, stabilizing after April 15, when families started receiving Economic Impact Payments[4]. Average balances remained steady throughout the remainder of 2020, increasing again in January 2021 to $6,900, more than $2,000 higher than the previous January. In contrast, median balances show a similar increase through May 2020, but a clear downward trend throughout the remainder of the year before increasing again in January 2021. Compared with 2019, median balances were up by about $900 at their highest point last spring, but those balance cushions decreased to roughly $400 by the end of December. Put differently, by the end of the year, median balances had lost 55 percent of the initial balance gains in April. Balance increases in January 2021 again had medians nearly $900 elevated relative to the prior year, but that quickly declined to less than $600 two weeks later.

To account for seasonal fluctuations, Figure 1b shows year-over-year percent changes, highlighting the large year-over-year increase in balances in April 2020. This account balance growth was driven initially by sharp declines in consumer spending in March and April during the shutdowns (Cox et al. 2020). Balances then increased steeply after April 15, when families started receiving EIP. Gains in average balances continued throughout the year, ending roughly 40 percent elevated in late December. Year-over-year changes in median balances follow a different trajectory, showing a clear downward trend after the arrival of the stimulus payments. Specifically, median balances peaked at 69 percent higher than 2019 balances the week of May 3 and then decreased throughout the rest of 2020, ending 30 percent higher than 2019 balances in December. While median balances were again elevated by 69 percent the week of the second EIP disbursement in January 2021, those gains seemed to diminish even more quickly: by the end of January 2021, median balances were up only 47 percent relative to the previous year. One likely reason for this is that the second round of stimulus payments was much more compressed than the first, with 96 percent of payments delivered by January 8.[5]

The stark difference between the evolution of mean and median balances implies that averages alone do not capture the full picture of balance changes. The distribution has shifted higher overall, as shown in Figure 2a. The largest dollar gains occurred at the upper end of the distribution, with the 90th percentile increasing by more than $4,000 between January 2020 and January 2021. On a percent change basis (Figure 2b), the year-over-year changes were largest for the lower end of the distribution, owing to the progressive nature of the stimulus payments, with the 25th percentile elevated by 95 percent at its peak in April 2020. The lower end of the distribution also reverted the most by year's end: in late December, the 25th percentile was 32 percent higher than it had been in 2019, whereas the 75th percentile was still elevated by 39 percent. This change in rank-ordering occurred twice: at peak balances in April 2020, the lower ends of the distribution had greater year-over-year percent gains than the higher ends, but that reversed by the end of 2020, when the 90th percentile had the greatest gains over the prior year and the 25th percentile had the least. With the arrival of the second EIP, positions were once again reversed, though quickly reverting to the original ordering by month's end.

Figure 1a: Balances increased through early 2020, with averages remaining elevated throughout the year and medians falling from May onward; January 2021 saw additional balance upticks

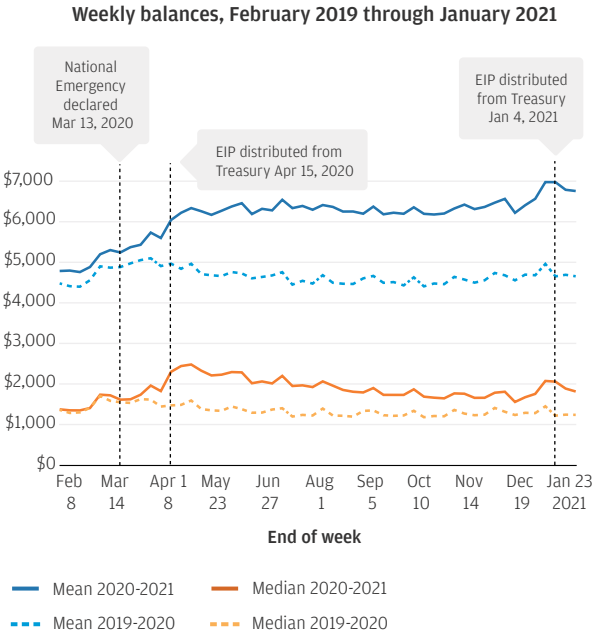


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Figure 1b: Year-over-year percent change increased sharply for both mean and median balances in April, followed by increasing mean and decreasing median trends throughout the year

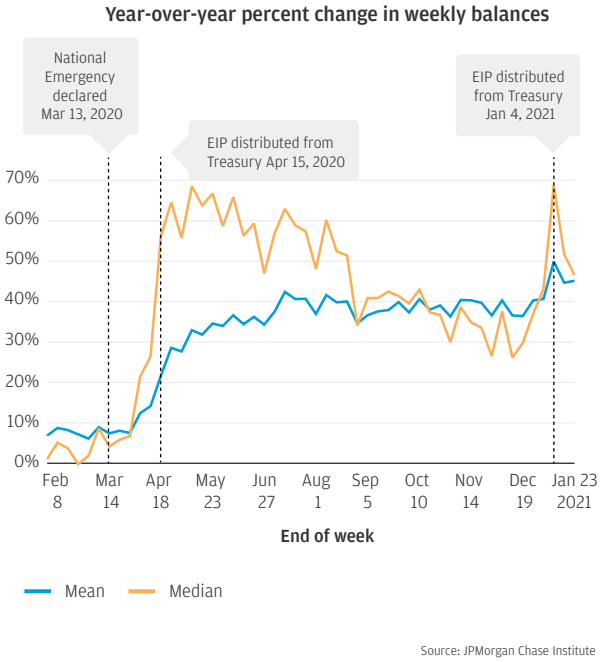

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Figure 2a: Balances increased across the distribution, with greater dollar changes at the high end of the distribution

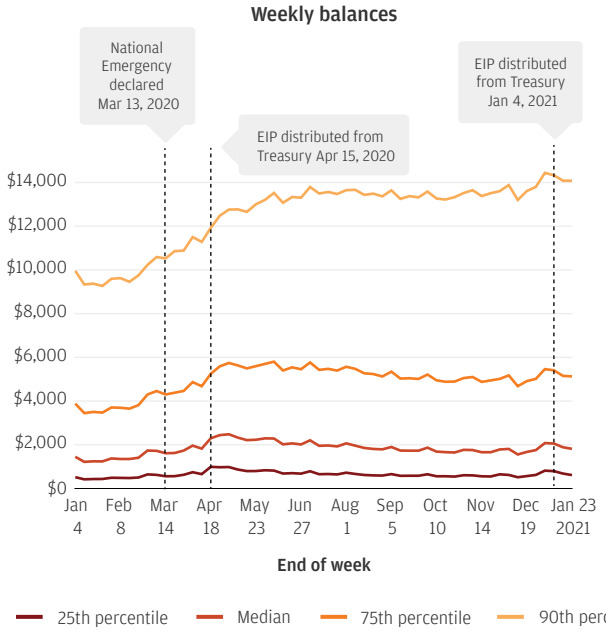

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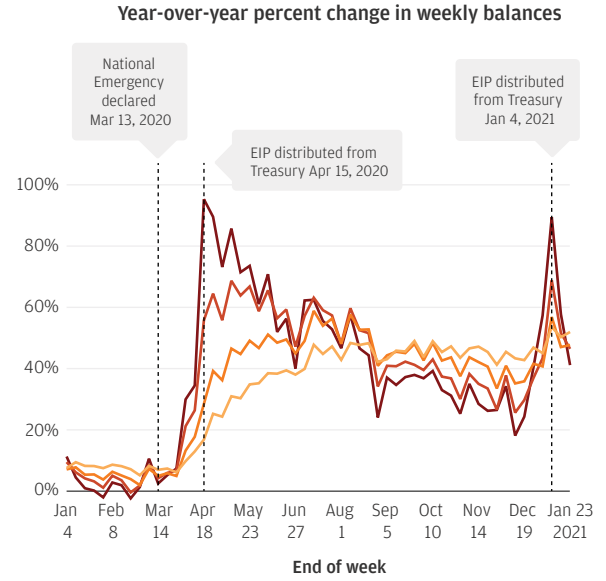
Figure 2b: Balances increased across the distribution, with greater relative percent changes at the low end



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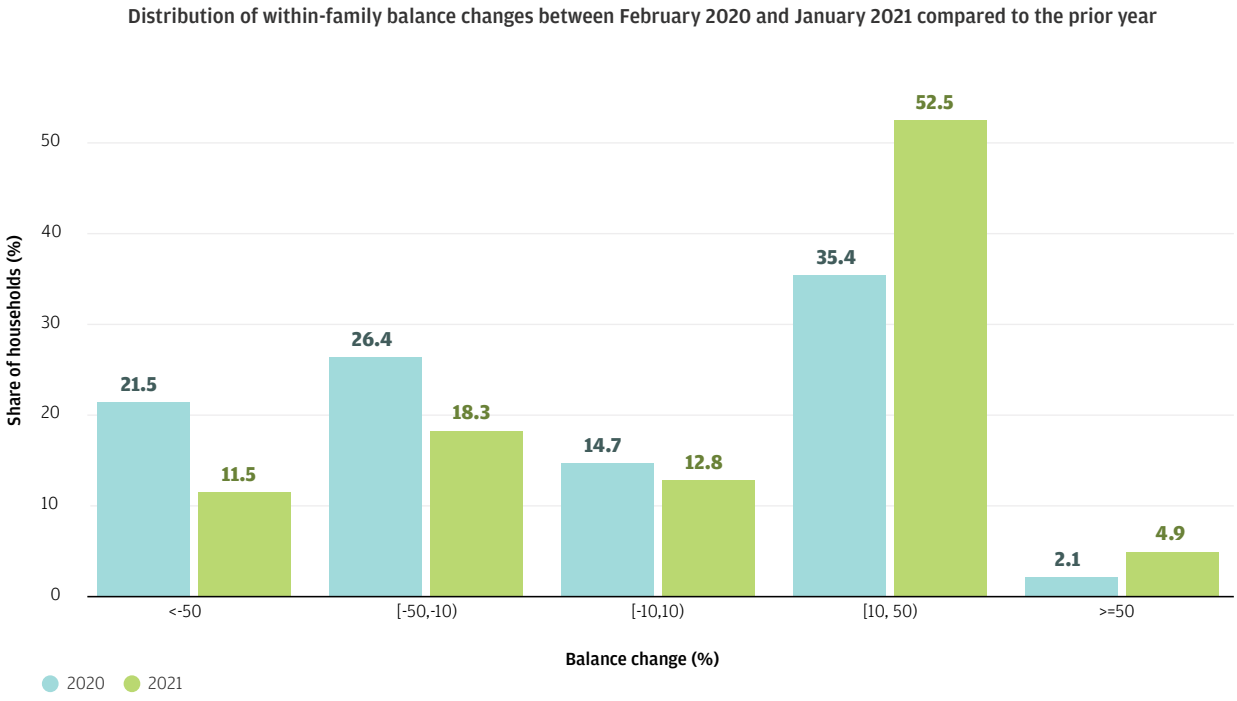
These significant distributional dynamics are not visible in public datasets that report only aggregate statistics. Reported statistics often rely on averages, which we have shown to follow very different trajectories than medians. While the typical household steadily depleted their cash buffer throughout the second half of 2020, that pattern gets obscured in aggregate public statistics due to the influence of high-balance households in driving the means. Moreover, aggregate statistics on total deposits do not isolate the outcomes of households as distinct from other sectors, such as commercial customers.[6] This separation is critical to understanding the impacts of the pandemic and policies on the typical family, as trends differ for businesses.[7]

To understand what these overall increases mean for individual families, we further explore within-family balance changes. Even with median balances elevated, some families could experience balance decreases and face economic hardship as a result. We calculate family-level balance changes between February 2020 (just before the pandemic) and January 2021 (the latest data in our sample). Figure 3 shows the distribution of those balance changes compared to the prior year.

We find that, consistent with Figure 1b, more families experienced balance growth over the course of the pandemic than during the same months in the prior year. Even with spending declines and government supports, roughly 30 percent of families experienced a 10 percent or more decline in cash balances, but this share was lower in the pandemic than in the prior year. In other words, while some families do experience balance declines during the pandemic, there were fewer such families than prior to the pandemic, likely due to several government interventions and changes in spending patterns.

Figure 3: Fewer families experienced balance declines during the pandemic (between February 2020 and January 2021) than in the prior year



Source: JPMorgan Chase Institute

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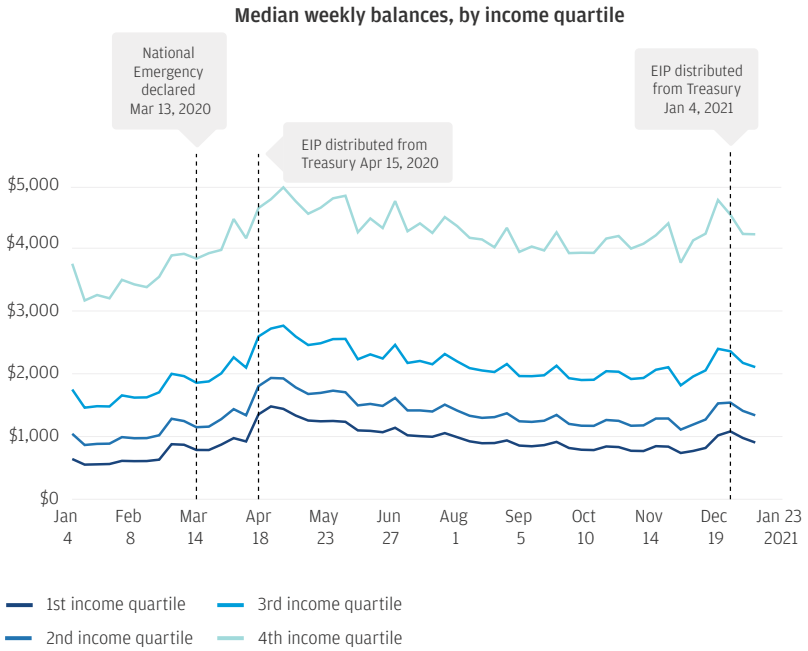
Finding Two

Households with lower starting liquid balances—lower-income and younger account holders—experienced the largest balance increases on a percent basis, but lost those initial balance gains the fastest.

Given that the pandemic resulted in greater job losses among low-income workers (Cajner et al. 2020) in particular, we further explore liquid balance changes by income and age.[8] Separating first by income, Figure 4a shows balance increases for all income quartiles.[9] The highest income quartile (families with take-home labor income greater than $68,896 in 2019) posted the largest dollar gains, with balances roughly $1,400 higher in May 2020 than May 2019 (Figure 4c). The lowest income quartile (families making less than $30,296 in 2019) increased balances by half as much, peaking at a gain of $700 relative to 2019[10].

Due to their lower balance levels, the lowest-income families saw the largest year-over-year gains in percentage terms despite having the lowest dollar gains (Figure 4b). At the peak in May, low-income families had doubled their balances relative to 2019, compared with the highest-earning families who were up by roughly 40 percent. However, these gains were more quickly depleted for low-income families, losing 70 percent of their 2020 balance gains by the end of December. In contrast, the highest-income families lost 48 percent of their 2020 balance gains by the end of December. By the end of 2020, balances were up year-over-year by 37 percent for low-income families, compared to 21 percent for high-income families—a considerably narrower gap than when balances were at their peaks in the spring. With the delivery of the second round of stimulus payments in January 2021, balances were up 96 percent for the lowest earners, and 43 percent for the highest. Though the gap appears to narrow more quickly this time: low-income families ended January with balances 61 percent elevated, compared with 32 percent for their high-income counterparts. In sum, low-income families' balances have been the most impacted by stimulus payments, experiencing the largest percentage increases and fastest declines.

Figure 4a: All income groups experienced similar balance trends during the pandemic, though balance levels vary significantly by income



Note: This chart shows the median checking account balance by income quartile. We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

Source: JPMorgan Chase Institute

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Figure 4b: Low-income families saw the greatest year-over-year percent balance gains, but depleted those gains faster than high-income families

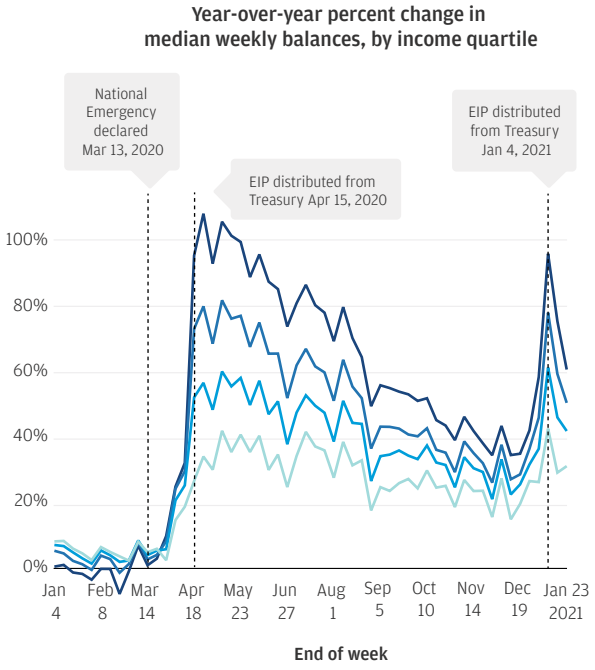
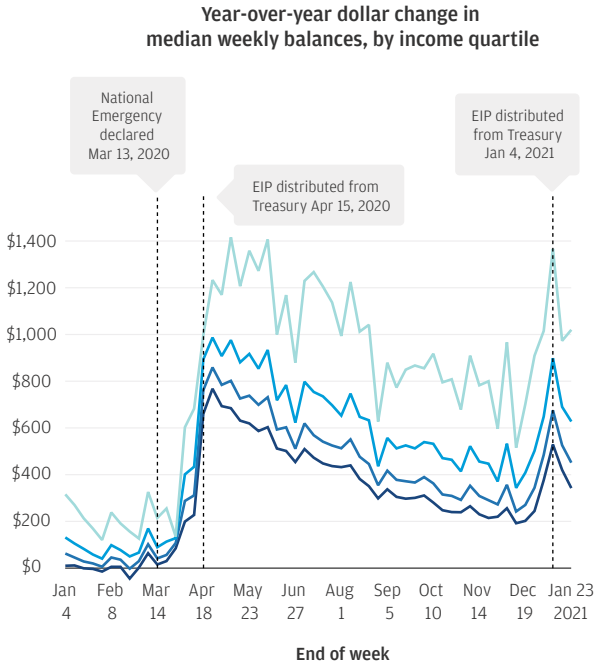


Figure 4c: High-income families saw the largest dollar gains during the pandemic



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We see a similar pattern for balance changes by age. Figure 5b shows that younger age groups have higher year-over-year percent growth in liquid balances in the spring of 2020 than older age groups, deplete their gains the most throughout the remainder of 2020, and then see higher gains again in January 2021. These differences across age groups are driven by differences in underlying balance levels. Median starting balances increase with each increase in age group (Figure 5a). Note that this is not merely an artifact of older account holders having higher income than their younger counterparts: the age gap in balances holds within each income quartile.

Figure 5a: All age groups experienced similar balance trends during the pandemic, though balance levels vary significantly by age

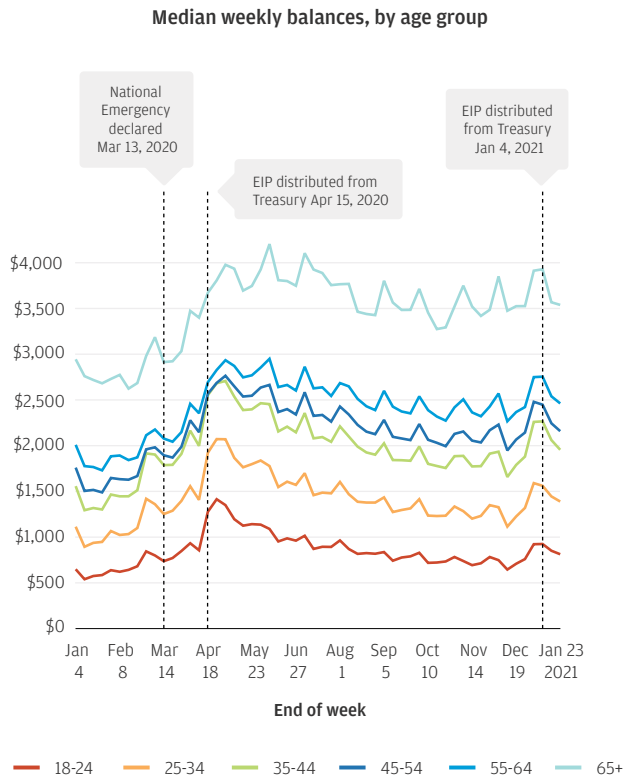

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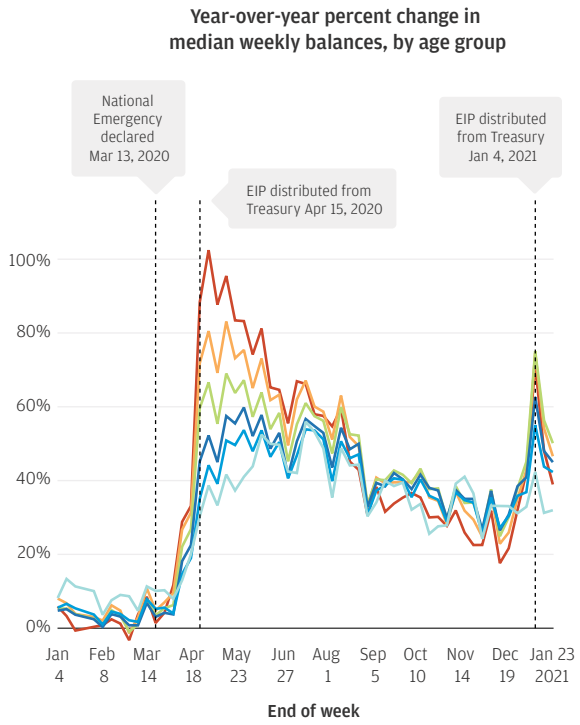
Figure 5b: Younger families saw the greatest year-over-year percent balance gains, but depleted those gains faster than older families



Source: JPMorgan Chase Institute

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Finding Three

We see faster spend-down in liquid assets among families with essential workers.

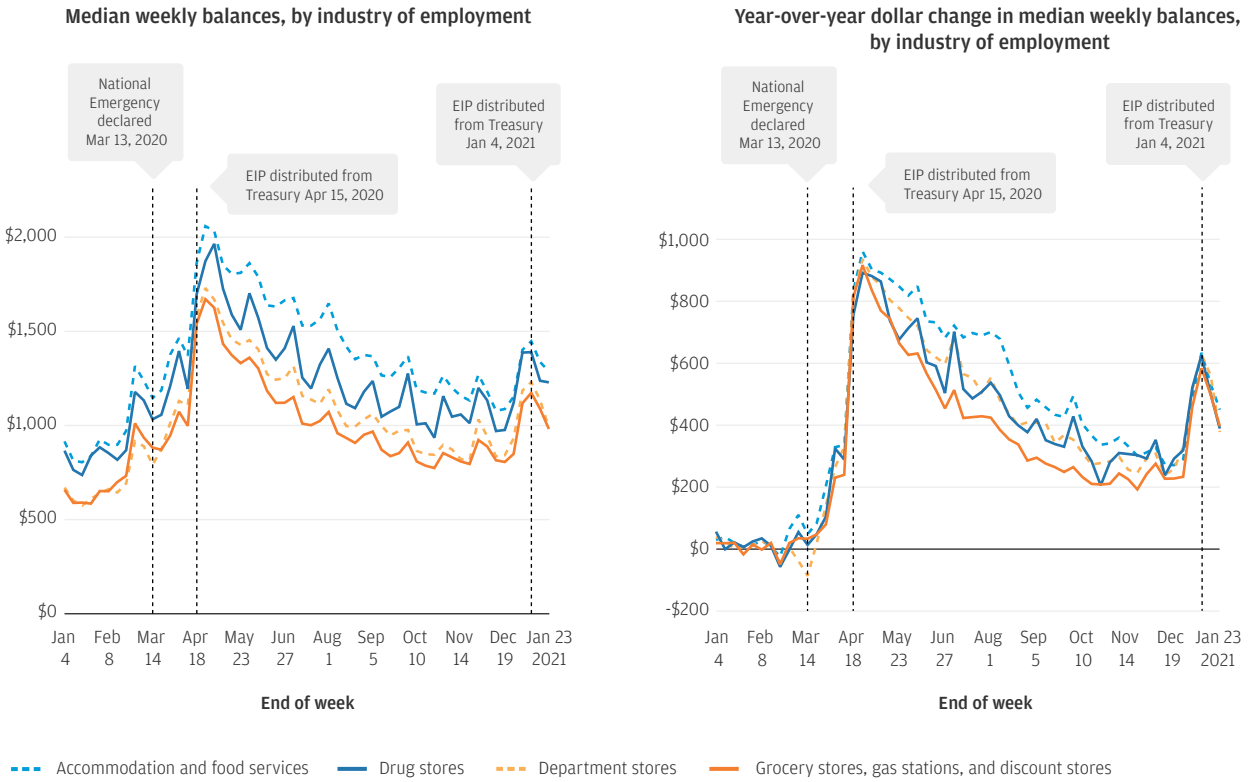
Another key aspect impacting a family's experience of the pandemic is, of course, employment. The pandemic has impacted working hours, working conditions, and layoffs, with changes distributed unevenly across different types of employment. Restaurant and retail employees saw widespread layoffs and unemployment, while workers in information-based office jobs remained largely employed, able to shift to telework (BLS 2020). And of course, workers in essential jobs—from healthcare professionals to grocery store cashiers—faced entirely different changes during the pandemic.

Workers in essential industries spent down their cash balances faster than workers in non-essential industries.

By observing earnings directly deposited into a family's checking account, we can classify the industry in which that family is employed.[11] We focus here on two industries commonly deemed non-essential in public health ordinances—accommodation and food services, and department stores—in comparison with two essential retail sectors—drug stores, and a category comprised of supercenters, grocery stores, and gas stations.

We find these four sectors interesting because they offer two pairs of industries with employees who have similar levels of account balances prior to the pandemic but who work in an essential (solid lines) versus non-essential (dotted lines) industry. The first pair, in blue, is accommodation and food service workers versus drug store workers. The second pair, in orange, is department store employees versus other retail employees (grocery stores, gas stations, discount stores). Each pair begins with comparable account balances and sees similarly sized increases in their account balances as a result of the first round of EIP. However, in both cases, workers in the essential industry—drug stores, grocery stores, gas stations, and discount stores—spent down their cash balances faster than workers in non-essential industries—accommodation, food services, and department stores. Given that job losses were more concentrated in non-essential industries, the slower depletion in cash buffers among non-essential workers is likely due to the generous unemployment benefits that workers received through July as a result of the CARES Act and Lost Wages Assistance, which more than replaced typical earnings and led to considerable savings (Ganong et al. 2020; Greig et al. 2021). On the other hand, it is a stark reality that families with essential workers exhibited a faster depletion of liquid assets. With the arrival of the second round of stimulus payments in January 2021, balances were again comparable for each essential and non-essential pair.

Figure 6a: Employees working in essential industries depleted their balance gains faster than those in non-essential industries



Source: JPMorgan Chase Institute

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Figure 6b: Employees working in essential industries depleted their balance gains faster than those in non-essential industries

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Finding Four

Initial pandemic balance increases for low-income families were driven by increases in account inflows, while high-income families offset decreases in inflows by larger decreases in outflows.

In Finding One, we document a large increase in household checking account balances at the start of the pandemic, followed by a depletion of gains during the remainder of 2020, with an increase again in January 2021; in Finding Two, we show that balance increases were greatest for high-income families, and low-income families depleted their balance gains the fastest. In order to explain these trends, we turn our attention to the mechanisms that determine balance levels and separately assess changes in account inflows (labor income, government supports, transfers in from other accounts) and changes in account outflows (spending, debt payments, transfers out of the account).

We show trends in median inflows (Figure 7a) and outflows (Figure 7b) in four-week intervals through January 2021, by income quartile. We see marked differences in these trends by income level, with the highest income quartile displaying distinct trends compared with the remainder of our sample.

All three of the lower income quartiles exhibit an inflows peak in April 2020, coinciding with the first round of stimulus payments. Inflow levels remain elevated for the remainder of the summer before gradually falling close to pre-pandemic levels by the end of the year, before peaking again in January 2021. In contrast, account inflows for families in the highest income group decrease relative to 2019 in April and May. We observe a pronounced spike in total inflows in late June for all income groups, due to irregularities in the alignment of paycheck timing for families with different pay cadences.[12] Inflows stabilize $265 above 2019 levels by the end of the year, roughly 50 percent lower than pre-pandemic status, when families started the year with inflows $540 greater than 2019 levels. As with the lower-income families, January 2021 brings an inflow spike to the highest earners.

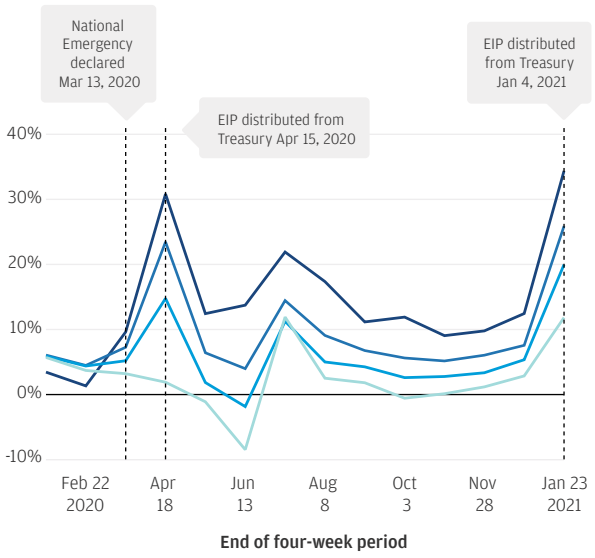
Account outflows show a marked decrease in April 2020 for each income group. Given that a national emergency was declared on March 13, and most states went into lockdown by the end of the first week of April, these trends may represent decreases in spending based on the constraints imposed by public health measures. Outflows rebounded in the following periods, peaking in July[13] for every income group before decreasing to settle at a lower steady state for the remainder of the year.

These trends vary somewhat by income group, however: among the lowest-earning families, outflows were elevated above their pre-pandemic baseline through the end of 2020. In contrast, outflows for the highest-earning families remained depressed throughout the spring and summer, peaking in July, and ending the year slightly elevated relative to 2019, though less so than at the start of 2020. In January 2021, with the receipt of the second round of EIP, all income groups exhibited large spikes in outflows.

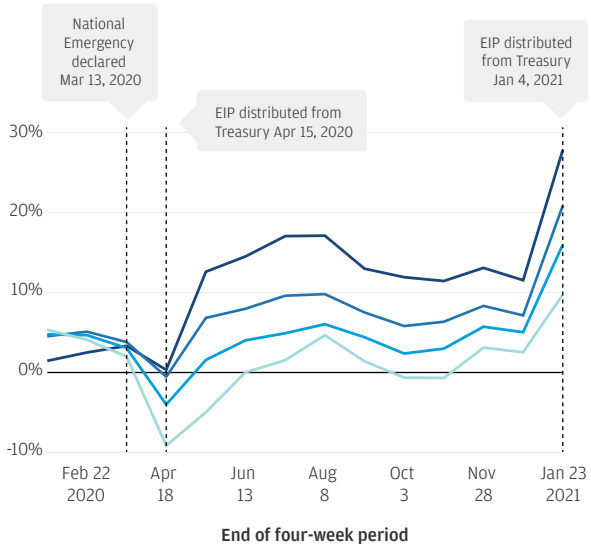
In summary, while liquid balances increased for families across the income spectrum during the early period of the pandemic, the ways in which inflows and outflows contributed to those balances differed across the income spectrum. For most families, balances grew despite elevated outflows because of even larger increases in inflows. But high-income families experienced the reverse: balances grew despite temporary decreases in inflows because of concurrent cuts in outflows. After the second round of stimulus payments in January 2021, across the income spectrum, families increased outflows. The remaining findings will further decompose inflows and outflows into key sub-categories to understand which factors drive these distinctions.

Figures 7a & 7b: Balances grew initially due to increased account inflows and decreased outflows

Year-over-year percent change in median account inflows, by income quartile (four-week periods)



Year-over-year percent change in median account outflows, by income quartile (four-week periods)



1st income quartile 2nd income quartile 3rd income quartile 4th income quartile

Note: We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

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Finding Five

Income increased for low-income households despite greater job losses, due in part to government supports.

We define a measure of total income as all non-transfer inflows into a family's checking accounts. This consists of labor income from direct deposit paychecks, UI income, tax refunds, and all other non-transfer inflows. (See Figure A1 in the Appendix for detail on each income category by income quartile.) Figure 8a shows that median total income follows similar trends as median total inflows in Figure 7a: highly elevated in April 2020 relative to 2019, depleting most of those initial gains by the following month, and continuing downward before reaching a steady state throughout the fall and winter of 2020. The lowest-income families experienced the greatest increase in total income in 2020, relative to their earnings in 2019; at the upper end of the income distribution, median income was roughly at parity with 2019 levels from May 2020 through year's end. In January 2021, families across the income distribution experienced a marked increase in total income with the arrival of the second round of stimulus.

Labor income—defined as income received via paychecks direct-deposited into a family's checking accounts—follows a different pattern[14]. At the start of the year, median labor income was elevated 3 to 4 percent relative to 2019 levels for families in the highest three income quartiles, but somewhat depressed for the lowest earners (2 percent down). In late March, labor income began to decrease relative to 2019 levels for all income groups, reaching a low of 10 to 15 percent below 2019 income in late May. By late July, labor income reached a steady state for the remainder of the year, with the lowest three income quartiles slightly below 2019 levels (1 to 2 percent down), and the highest-income families somewhat more depressed relative to 2019 (2 to 4 percent down). Along with the observed decrease in labor income relative to 2019, the rate of direct deposit UI recipiency[15] in our sample increased sharply following the national emergency declaration in March (Figure 9a). This increase was most dramatic for the lowest-earning families, though even families in the highest income quartile saw substantial increases. This is evidence that lower-income households faced a greater risk of job loss. This may also be evidence that lower-income households disproportionately benefited from the CARES Act expansion of unemployment eligibility to self-employed and "gig workers" via the Pandemic Unemployment Assistance (PUA) program. Large numbers of previously ineligible families in the low-income group could contribute to the larger increases in UI recipiency rates we observe for low-income families.

Direct deposit UI recipiency in our sample increased sharply following the national emergency declaration in March.

Figure 8a: Low-income families experienced the greatest year-over-year percent increase in total income during the pandemic

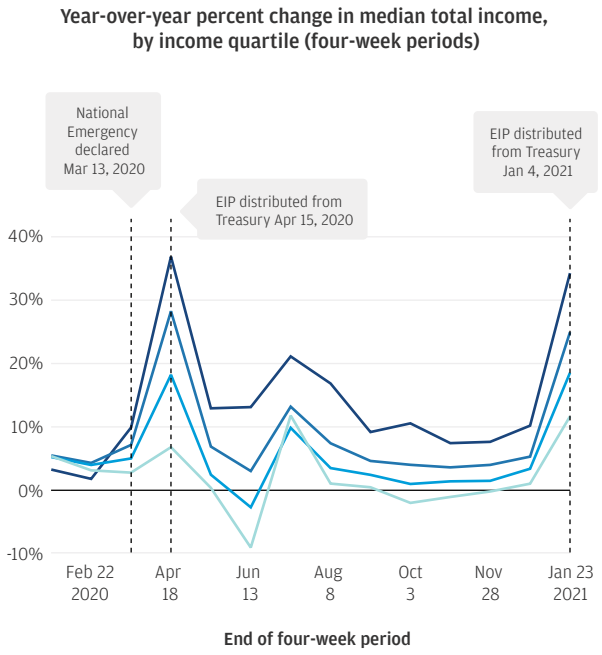

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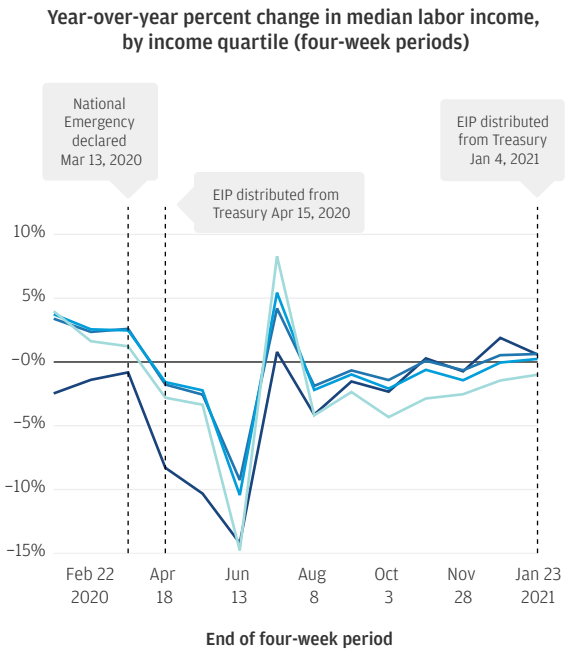
Figure 8b: Low-income families experienced the greatest year-over-year percent decrease in labor income during the early months of the pandemic



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Note: We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

Source: JPMorgan Chase Institute

Conditional on receiving UI payments, median payment amounts are roughly equal across income groups, with only the lowest income quartile distinct, at a slightly lower conditional median level (Figure 9b). The CARES Act expanded unemployment benefits via the Federal Pandemic Unemployment Compensation (FPUC) legislation, which provided a supplement of $600 per week from April through July for everyone receiving unemployment benefits. While FPUC originally expired on July 31, 2020, states paid out an additional $300 per week in Lost Wages Assistance in September and October, and the Coronavirus Response and Relief Supplemental Appropriations Act of 2021 reauthorized the $300 weekly supplement beginning after December 26, 2020. We observe changes in UI amounts consistent with these policy changes: conditional median UI payments increased in May 2020, reverted to pre-pandemic levels in August, and increased slightly again in January 2021.[16]

Figure 9a: UI recipient rate increased dramatically between March and May 2020, and has been slowly falling since

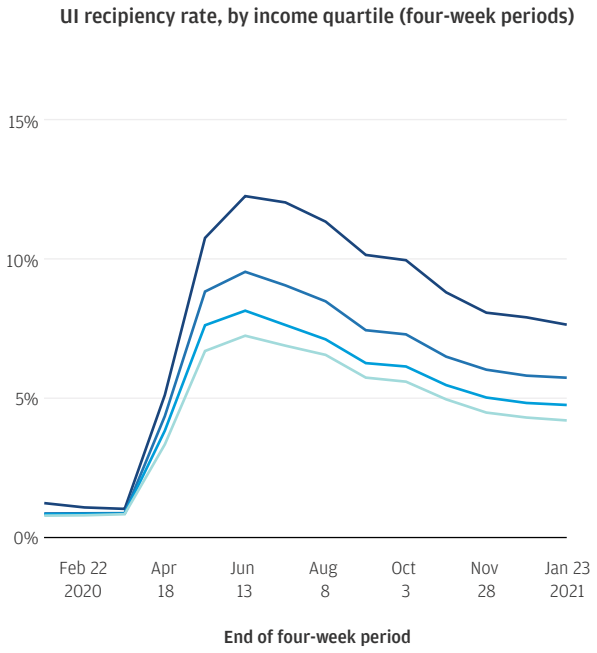

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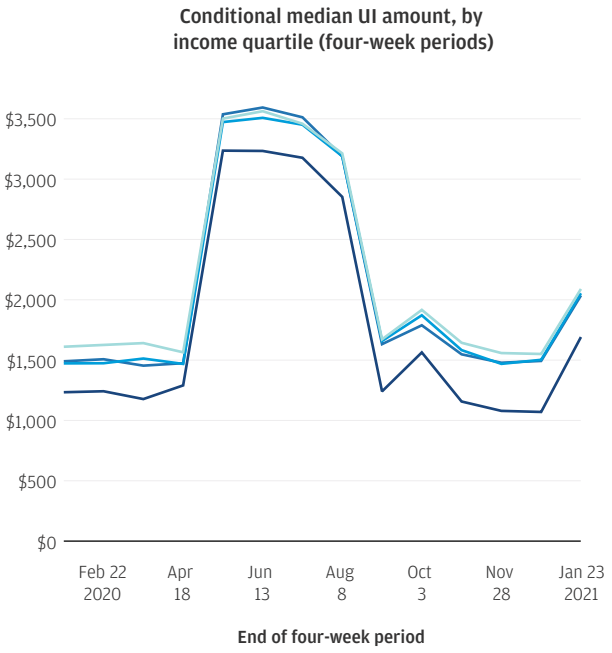
Figure 9b: UI amount for recipient families was elevated May through July 2020, and again in Jaunary 2021



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Note: We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

Source: JPMorgan Chase Institute

Finding Six

After initial spending decreases across the income distribution, low-income families rebounded to higher-than-usual spending while high-income families remain roughly at parity with prior trends.

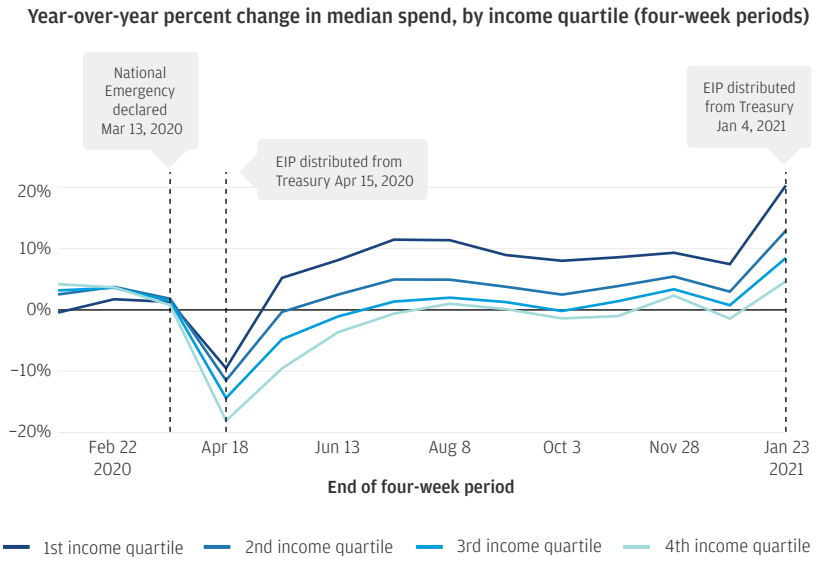
In Figure 10, we track household spending in four-week intervals. We define spending as checking account outflows to cash, paper checks, utility or telecom payments, school fees, debit card purchases, and other spend excluding tax payments. This measure differs from card-based spending measures publicly available from other administrative data sources (e.g. Opportunity Insights) in that it includes cash, checks, and electronic payments but excludes credit card transactions, which we treat separately. In Box 1, we show a card-based measure of spending in two-week intervals, which includes debit and credit card transactions, as a benchmark to those sources.

In February 2020, families were spending slightly more than they did over the same period in 2019: median spending was up roughly 2 percent for the lowest-earning families and 4 percent for families in the remaining income quartiles. Across the income distribution, families decreased their spending dramatically in April, with the highest-income families dropping the most relative to 2019. Spending was down 10 percent in April 2020 for families in the bottom income quartile, and 18 percent for the highest-earning families.

Spending for all income groups began to rebound in May, after the arrival of the first round of stimulus payments. Over the course of the summer, families in the lowest income quartile surpassed pre-pandemic spending, peaking at levels more than 10 percent greater than the prior year in June and July, decreasing slightly though still elevated by year's end at 7 percent over 2019 spend. The highest-earning families gradually achieved parity with 2019 levels, but ended the year with spending depressed relative to both 2019 and their pre-pandemic activity.

Spend increased for all income quartiles in January 2021, after the arrival of the second stimulus payment in the first week of January. Families in the lowest income quartile increased their spending to 20 percent higher than the previous year. In contrast, this increase boosted the spending of the highest-income families to roughly 4 percent above the prior year. (For a full decomposition of the categories of spend by income quartile, see Appendix Figure A2.)

Figure 10: After initial spend decreases, spend increased after both sets of stimulus payments, especially for lower-income families



Note: We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

Source: JPMorgan Chase Institute

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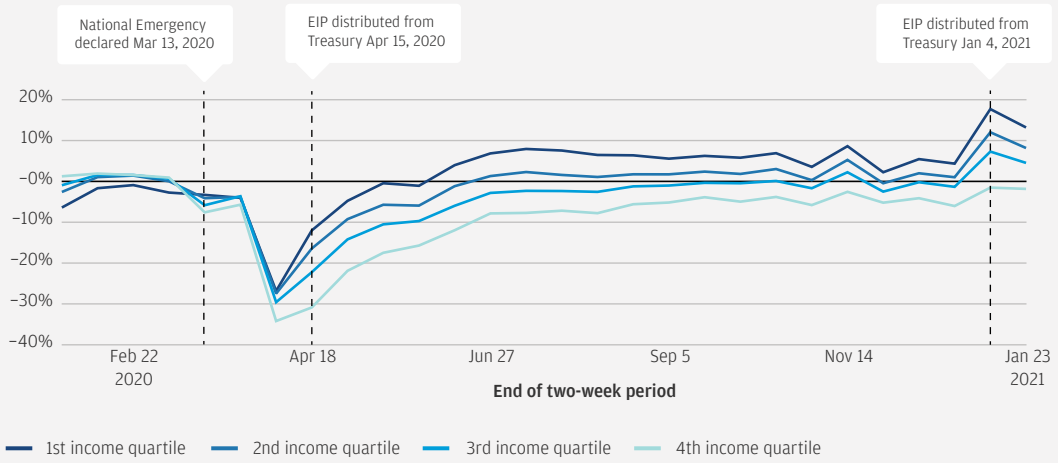
Box 1: Benchmarking our spend measure

In an effort to explain changes in families' liquid balances, the spend metrics we report in this finding represent money flowing directly out of checking accounts. This can make for difficult comparisons with external benchmarks that rely on a combination of debit and credit card transactions.

While our checking-account-based metrics include purchases made via debit card, they do not capture the spending that families conduct via credit card—only the payments made to those cards from the checking account. To compare our trends with external benchmarks, we plot a series of total card spend (i.e. debit card and credit card transactions) for our sample, in two-week intervals. Results are qualitatively consistent with trends captured in other administrative datasets based on debit and credit card spending.[17]

Year-over-year percent change in credit card and debit card spend, by income quartile (two-week periods)



Note: We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

Source: JPMorgan Chase Institute

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Given public health measures that implicitly restricted many types of discretionary spending, it is perhaps not surprising that spending decreased in the wake of the national emergency declaration. And yet, many families' spending, particularly that of low-income families, exceeded pre-pandemic spending levels throughout much of 2020 and particularly in January 2021. This is consistent with the trends in total income, and, in particular, the generous government supports through stimulus and unemployment insurance, which disproportionately benefited low-income families.

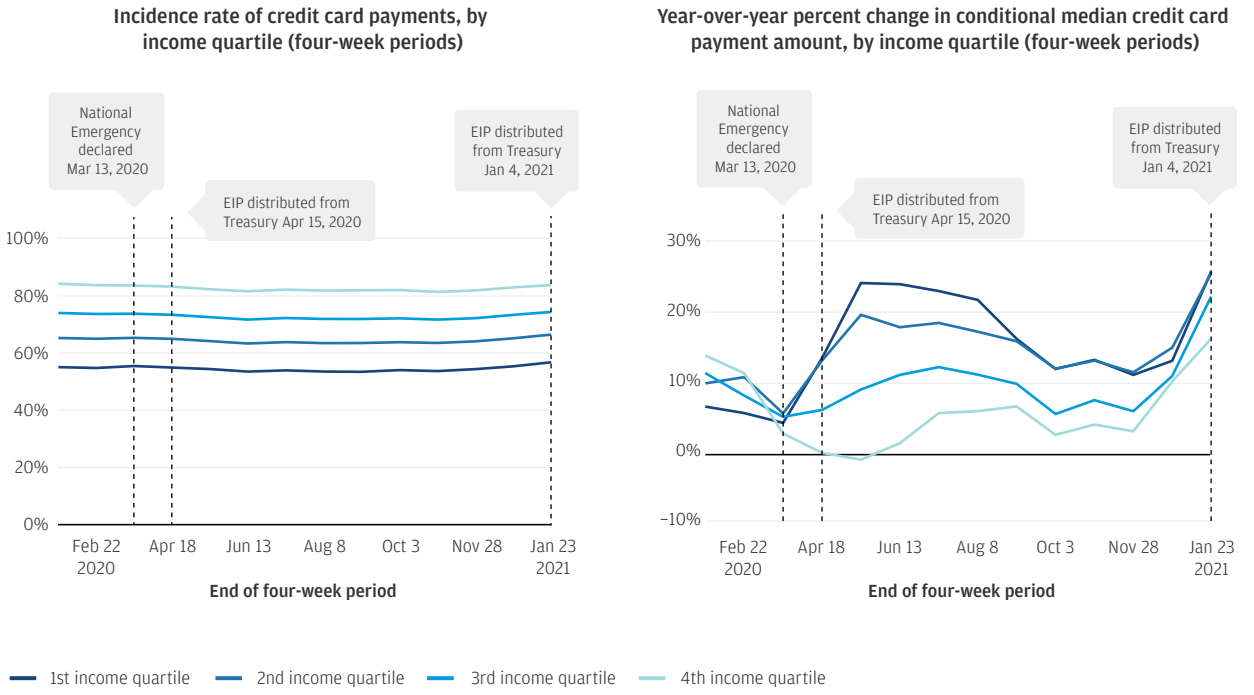
Next, we turn to trends in credit card payments, which reflect trends in both spending and credit card debt repayment. In Figure 11a, payment incidence rates were relatively steady throughout the year, though we observe very minor and gradual decreases for each income group over the course of the year: roughly 1 percentage point for the bottom two income quartiles, and 2 percentage points for the top two quartiles by the end of November. The decreases reversed in December 2020 and January 2021, adding roughly 2 percentage points for each income quartile. Trends in median payment amount for families making credit card payments[18] in a given month (Figure

11b) diverge by income: families in the lowest income quartile started the year 7 percent higher than 2019 payments, increasing to peak at 24 percent by May before decreasing again to end the year 13 percent up relative to December 2019. In January 2021, payments from the lowest-earning families were 26 percent elevated, after the arrival of the second stimulus payment, echoing the peak in May after the first round of stimulus. Families in the highest income quartile, in contrast, started the year 14 percent higher than in 2019, but reversed to slightly below 2019 values in May, when the low-income families hit their post-stimulus peak. Payment amounts rebounded somewhat to end the year 10 percent elevated, and in January they were again elevated by 16 percent after the second round of stimulus.

Interpreting these trends, we note that changes in payment amount can indicate a family changing their spending behavior (how much they transact on their credit card), or changing their paydown behavior (what proportion of the balance they pay each month). We cannot precisely distinguish between these in our data. However, our card-based spending measure in Box 1 shows that combined debit and credit card spend was down year-over-year for high-income families, but elevated for low-income families. For each income quartile, year-over-year credit card payments in Figure 11b are elevated more than year-over-year card spend in Box 1, suggesting that families are paying down their debt more rapidlly. Indeed, evidence of improved credit health—including declines in credit card utilization and past-due debt—has been documented more broadly (e.g., Urban Institute 2021).

Figure 11a: Credit card payment rate was relatively steady during the pandemic

Figure 11b: Conditional credit card payment amount was depressed during the pandemic for the highest earners and elevated for the rest; all income groups experienced further elevation by the end of 2020



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Source: JPMorgan Chase Institute

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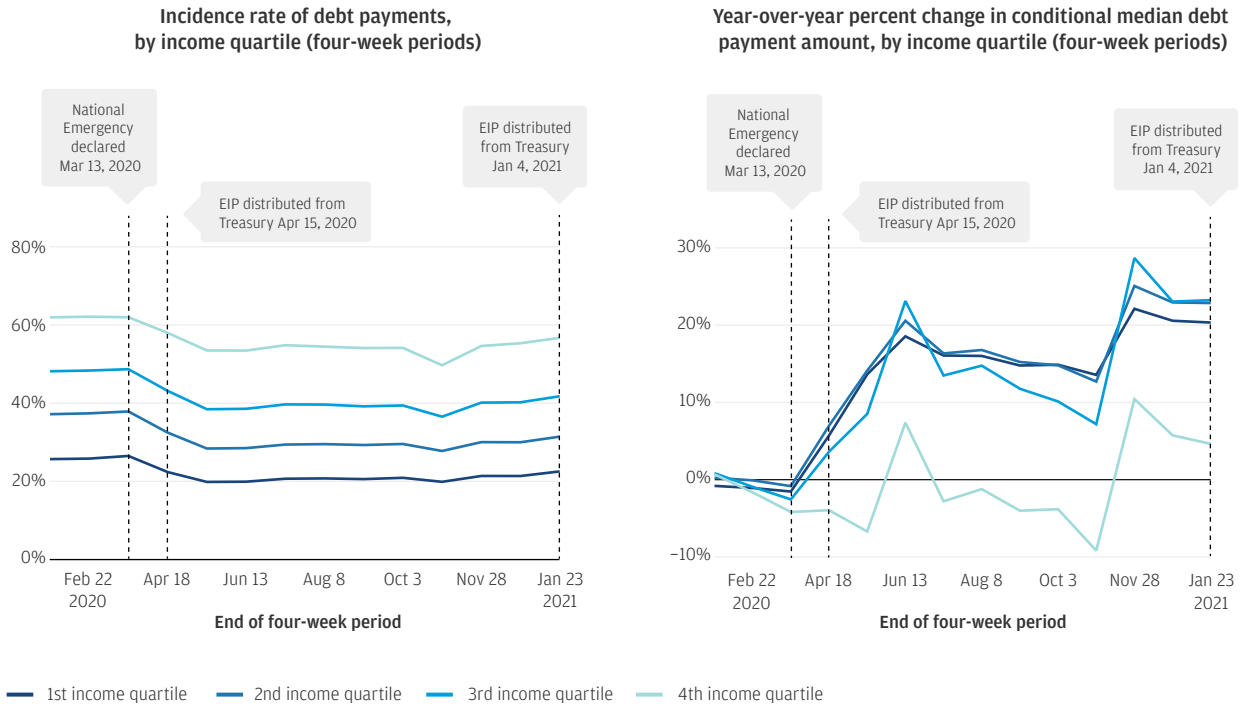
Next, we turn to other debt payments, which includes payments to mortgages, auto loans, student loans, and other installment loans (excluding credit card payments). During the pandemic, forbearance was offered for most types of household debt. Loan servicers implemented forbearance protocols in different ways for two key types of debt—mortgages and student loans—resulting in different outcomes. Mortgage forbearance was made readily available to homeowners experiencing self-reported COVID-related hardship. Despite the lack of documentation requirements, fewer than 10 percent of homeowners enrolled in mortgage forbearance, and roughly one third of homeowners in forbearance continued to make payments (Farrell et al. 2020). In contrast, forbearance on federal student loans was proactively implemented, automatically stopping electronic student loan payments for borrowers unless they opted out. In short, while a variety of forbearance options were available during the pandemic, the ease of enrollment and resulting uptake rates varied by debt type, so the extent to which families used forbearance to reduce their debt payment burdens during the pandemic likely varied by their debt compositions.

In our sample, the incidence of debt payments was steady at the start of the year, with 62 percent of families in the highest income quartile making payments compared with 26 percent of families in the lowest income quartile (Figure 12a). Payment rates began falling in late March, reaching a new steady state by May, at roughly 53 percent for the highest-earning families, and 20 percent for the lowest-earning families for most of 2020. Notably, debt payments increased in January 2021 after the arrival of the second stimulus payments.

Figure 12a: Debt payment rate decreased in the spring of 2020 for all income quartiles

Figure 12b: Conditional debt payment amount was depressed during the pandemic for the highest earners and elevated for the rest; all income groups experienced further elevation by the end of 2020



Note: We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

Source: JPMorgan Chase Institute

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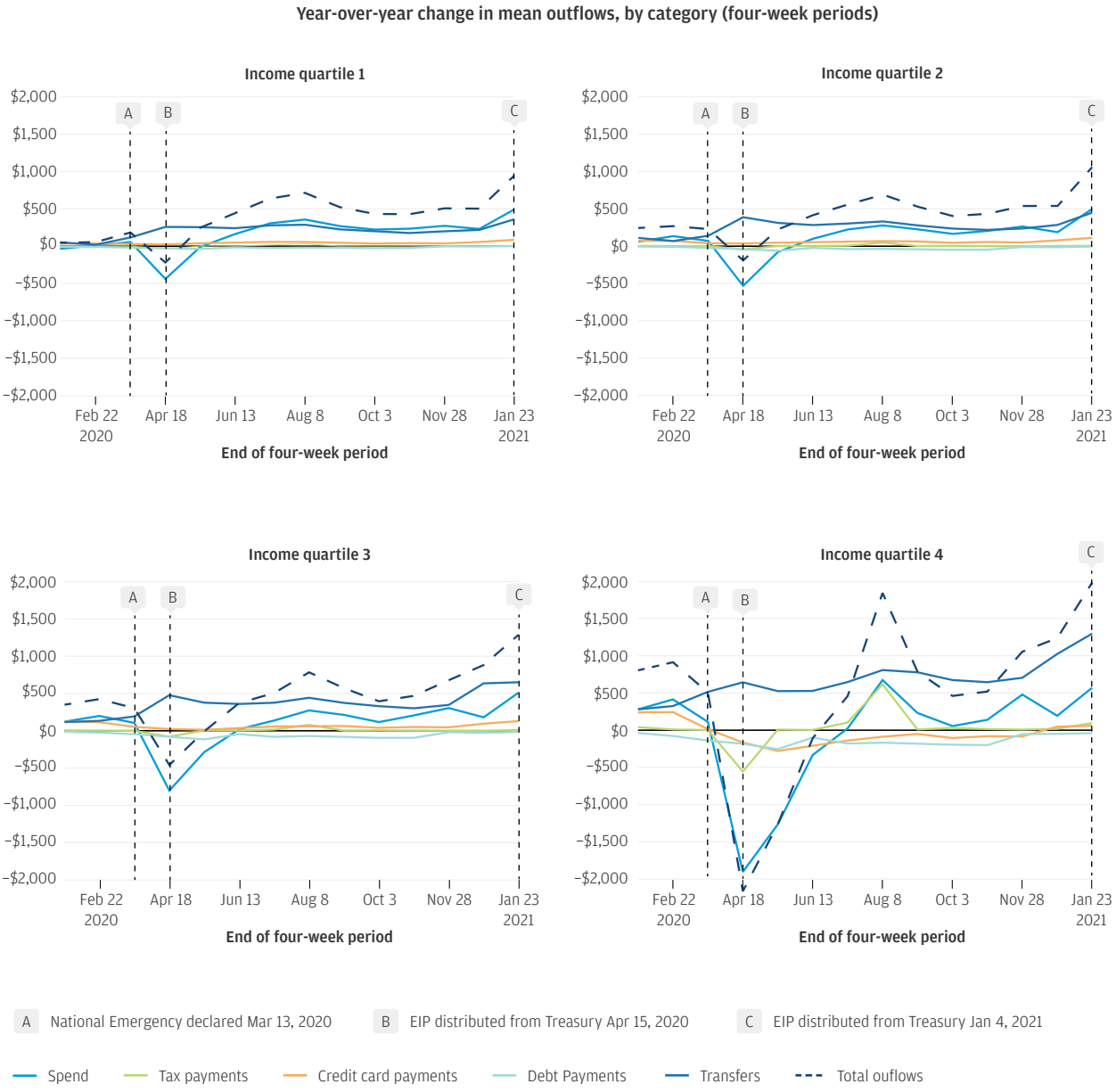
Conditional on making a debt payment, median payment amounts were steady at the start of the year, at parity with 2019 amounts (Figure 12b). Conditional payment amounts began rising in late March for the bottom three income quartiles, in coordination with payment incidence decreases. In contrast, families in the highest income quartile decreased their debt payments in April to 7 percent below 2019 levels. Across the income spectrum, payment amounts peaked in late May after the arrival of the first stimulus payments in April, suggesting that families used some of their stimulus funds to make larger debt payments. Throughout the rest of 2020, payments for the lowest three income quartiles remained elevated by at least 10 percent relative to 2019, rising further in November to roughly 20 percent elevated through January. High-income families also finished the year with elevated debt payments, by roughly 5 percent in January 2021.

Higher payment amounts among lower-income families could represent families using their excess cash to pay down debt. Alternatively, it could reflect a selection effect rather than actual payment changes, if families with lower debt payments were disproportionately likely to pause payments during the pandemic. Indeed, balancing the sample to include only families who made payments in December 2020 results in relatively steady conditional medians throughout the year, confirming that selection effects play a dominant role in the increase in conditional payment amount for the bottom three income quartiles. In other words, the increasing trend in conditional payment amounts reflects the fact that, among lower-income families, those with higher debt payments were more likely to continue to make their payments while families with lower debt payments were more likely to stop making payments altogether.

Finally, Figure 13 decomposes average outflow changes into changes in outflow components, including spend, transfers, and debt payments for each income quartile. We see a clear increase in spend for families in the highest and lowest income quartiles, mirroring median results from Figure 10. In addition, we see that outflow transfers, while marginally elevated relative to the prior year throughout the pandemic, see an additional increase in January 2021. These transactions represent transfers out of families' checking accounts into another account—possibly into some form of savings or investment accounts, or checking accounts at another bank. Overall, the second stimulus disbursements in January 2021 appear to have been used fairly soon upon receipt—either on spending (Figure 10), credit card paydown (Figure 11b), or transfers out to fund savings or other accounts.

Figure 13: Relative to the prior year, spend and transfers out of checking accounts experienced upticks in January 2021



Note: We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

Source: JPMorgan Chase Institute

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Implications

Families had elevated cash buffers at the end of 2020, boosted again in January 2021 by a second round of stimulus. As we show above, the two rounds of stimulus boosted family cash balances to roughly 70 percent above the prior year in April 2020 and again in January 2021. Typically, families experience a further increase in cash balances during tax season, when most families receive tax refunds worth, on average, six weeks' of income, fueling spending and saving for more than half the year (Farrell et al. 2019). Thus, cash buffers may remain elevated for some families into the first half of 2021, even without a third round of stimulus checks.

The spike in cash buffers after the second round of stimulus at the beginning of January 2021 appeared to be shorter-lived. While the balance gains following the first round of stimulus tapered off slowly throughout the remainder of the year, the balance gains from the second disbursement seemed to revert within the following weeks. There could be several factors contributing to the different patterns. First, the disbursement timeline for the second round was much more compact than the first. Second, spending—and outflows in general—were depressed during the spring of 2020, contributing positively to balances, absent a corresponding decrease in inflows. Given that outflows had mostly returned to typical levels by the end of 2020, that could partially explain a faster depletion of January 2021 balance gains. Finally, the second stimulus disbursement occurred when cash balances were still elevated, enabling families to use the stimulus funds more immediately rather than maintain them to further shore up cash buffer. We observe this via increases in spending, debt and credit card payments, and transfers to savings—all of which may have been on hold during the higher uncertainty of the early pandemic.

Social safety net and stimulus are playing a key role in boosting the cash buffers of families, especially low-income families, showing the importance of targeted support. On a percent basis, increases in cash balances were most pronounced for families in the lower income quartiles. Low-income families also experienced the largest increase in median total income during the pandemic, despite having the highest rate of job losses. Supplemental increases to UI benefits contributed to these increases in total income.

Stimulus payments, increases in UI, and changes in household spending and debt management all contributed to pronounced changes in household cash balances.

While liquid balances increased during the early period of the pandemic for all income quartiles, the ways in which income and expenditures contributed to those balances differed across the income spectrum. For most families, balances grew despite elevated outflows because of even larger increases in inflows, but high-income families experienced the reverse: balances grew despite decreases in inflows because of concurrent cuts in outflows. Families in the lowest three income quartiles exhibited year-over-year increases in spending and conditional debt and credit card payment amounts. They also experienced year-over-year increases in total income, supplemented by increases in unemployment insurance. The latter factors outweighed the former, resulting in growth in median checking account balances. In contrast, the highest-earning families had total income at parity with 2019 for most of the pandemic, representing a decrease relative to pre-pandemic elevation over the prior year. At the same time, their spending was below or at parity with 2019 levels, as were their debt payments. These decreases in outflow behavior were large enough to allow continued elevation in median balances for the highest-earning families, despite stable inflows.

A distributional view of the household sector is crucial to understanding the financial outcomes of the typical family during the pandemic. As shown in Finding One, balance trends differ by metric: means often remain steadily elevated while medians steadily decrease. This means that relying on aggregate average statistics alone may mask important changes in financial outcomes of the typical family. Moreover, aggregate statistics on the deposits of households and nonprofits as well as commercial banks do not isolate the outcomes of households as distinct from other sectors. This separation is critical to understanding the impacts of the pandemic and policies on the typical family.

Appendix

Figure A1: Year-over-year dollar change in total inflows and inflow sub-categories[19]

Note: We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

Source: JPMorgan Chase Institute

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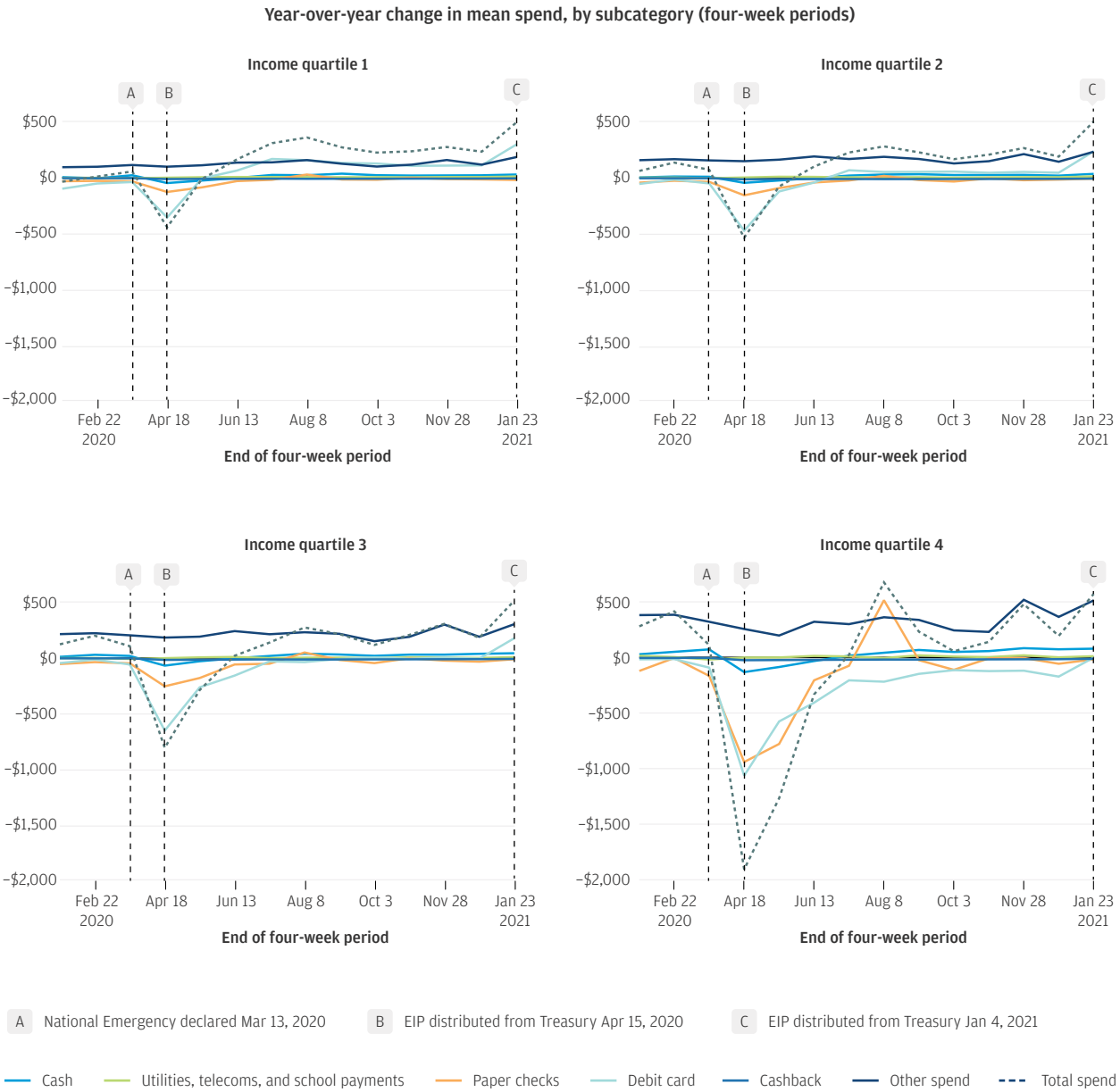
Figure A2: Year-over-year dollar change in total spend and spend sub-categories



Note: We assign households into income quartiles based on their total labor income from 2019. Households in income quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.

Source: JPMorgan Chase Institute

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Data Explanation

Executive Summary: Weekly balances, February 2019 through January 2021

Line graph showing the mean and median weekly checking account balances for 2019 and 2020, February through January of the following year. The trend of this graph shows the average balance rising throughout the spring, stabilizing after April 15, remaining steady throughout the remainder of 2020, and increasing again in January 2021. The median balance was up in the spring and then decreased.

View chart version

Executive Summary: Year-over-year percent change in median weekly balances, by income quartile

Line chart showing the year-over-year percent change in median weekly checking account balance by income quartile. The trend shows the lowest-income families saw the largest year-over-year gains in percentage terms and a quicker depletion of the gain in balance. In contrast, the highest-income families had the lowest year-over-year percent gains in balance. In January 2021, balances were up the most for the lowest earners in percent change terms.

View chart version

Executive Summary: Year-over-year percent change in median account inflows by income quartile (four-week periods)

Line plot showing the year-over-year percent change in median account inflows by income quartile. Income quartiles 1-3 exhibit an inflows peak in April 2020. Inflow levels remain elevated for the remainder of the summer before gradually falling. In contrast, account inflows for income quartile 4 decrease relative to 2019 in April and May. January 2021 brings an inflow spike to all income groups.

View chart version

Executive Summary: Year-over-year percent change in median account outflows by income quartile (four-week periods)

Line graph showing year-over-year percent change in median account outflows by income quartile. Account outflows decrease in April 2020 for each income group, and then rebound in the following periods, peaking in July before decreasing to settle at a lower steady state. In January 2021, we see large spikes in outflows.

View chart version

Figure 1a: Weekly balances, February 2019 through January 2021

Line graph showing the mean and median weekly checking account balances for 2019 and 2020, February through January of the following year. The trend of this graph shows the average balance rising throughout the spring, stabilizing after April 15, remaining steady throughout the remainder of 2020, and increasing again in January 2021. The median balance was up in the spring and then decreased.

View chart version

Figure 1b: Year-over-year percent change in weekly balances

Line chart showing the year-over-year percent changes of mean and median weekly checking account balances. The trend of this graph highlights the large year-over-year increase in balances in April 2020, and the continued gains in average balances throughout the year. In contrast, year-over-year changes in median balances show a clear downward trend after the arrival of the stimulus payments.

View chart version

Figure 2a: Weekly balances

Line chart showing the year-over-year percent change in the median, 25th, 75th, and 90th percentiles of weekly checking account balances. The 90th percentile has the largest dollar gains between January 2020 and January 2021.

View chart version

Figure 2b: Year-over-year percent change in weekly balances

Line chart showing the year-over-year percent change in the median, 25th, 75th, and 90th percentiles of weekly checking account balances. The 25th percentile has the largest percent gains between January 2020 and January 2021.

View chart version

Figure 3: Distribution of within family balance changes between February 2020 and January 2021 compared to the prior year

Bar chart showing the distribution of within-family balance changes between February and the following January. The plot shows that more families experienced balance growth over the course of the pandemic than during the same months in the prior year. Roughly 30 percent of families experienced a 10 percent or more decline in cash balances, but this share was lower in the pandemic than in the prior year.

View chart version

Figure 4a: Median weekly balances, by income quartile

Line chart showing the median weekly checking account balances by income quartile. The median balances of all income quartiles rose throughout the spring and decreased after April 15. All income quartiles have a short-lived increase in median balance in January 2021.

View chart version

Figure 4b: Year-over-year percent change in median weekly balances, by income quartile

Line chart showing the year-over-year percent change in median weekly checking account balance by income quartile. The lowest-income families saw the largest year-over-year gains in percentage terms and a quicker depletion of the gain in balance. In contrast, the highest-income families had the lowest year-over-year percent gains in balance. In January 2021, balances were up the most for the lowest earners, in percent change terms.

View chart version

Figure 4c: Year-over-year dollar change in median weekly balances, by income quartile

Line chart showing the year-over-year dollar change in median weekly checking account balance by income quartile. The highest income quartile posted the largest dollar gains, with balances roughly $1,400 higher in May 2020 than May 2019. The lowest income quartile increased balances by half as much, peaking at a gain of $700 relative to 2019.

View chart version

Figure 5a: Median weekly balances, by age group

Line chart showing median weekly checking account balances by age group. The median balance of all age groups rose throughout the spring and decreased after April 15. All age groups had a short-lived increase in median balance in January 2021.

View chart version

Figure 5b: Year-over-year percent change in median weekly balances, by age group

Line chart showing the year-over-year percent change in median weekly checking account balance by age group. Younger age groups, such as 18-24 and 24-35, had higher year-over-year percent growth in liquid balances in the spring of 2020 than older age groups. The gains deplete more for the younger age groups than the older groups during the rest of 2020. Younger age groups also saw higher gains again in January 2021.

View chart version

Figure 6a: Median weekly balances, by industry of employment

Line chart showing median weekly balances by industry of employment. The chart shows workers in the industries of drug stores, grocery stores, gas stations, discount stores, accommodation, food services, and department stores. The median balances of workers in all selected industries rose in spring 2020 and decreased after April 15, and then increased in January 2021.

View chart version

Figure 6b: Year-over-year dollar change in median weekly balances, by industry of employment

Line chart showing the year-over-year dollar change in median weekly balances by industry of employment. The chart shows workers in the industries of drug stores, grocery stores, gas stations, discount stores, accommodation, food services, and department stores. Workers in the drug stores, grocery stores, gas stations, and discount stores industries spent down their gain in balances faster than workers in accommodation, food services, and department stores industries in April 2020.

View chart version

Figure 7a: Year-over-year percent change in median account inflows by income quartile (four-week periods)

Line plot showing the year-over-year percent change in median account inflows by income quartile. Income quartiles 1-3 exhibit an inflows peak in April 2020. Inflow levels remain elevated for the remainder of the summer before gradually falling. In contrast, account inflows for income quartile 4 decrease relative to 2019 in April and May. January 2021 brings an inflow spike to all income groups.

View chart version

Figure 7b: Year-over-year percent change in median account outflows by income quartile (four-week periods)

Line graph showing year-over-year percent change in median account outflows by income quartile. Account outflows decrease in April 2020 for each income group, and then rebound in the following periods, peaking in July before decreasing to settle at a lower steady state. In January 2021, we see large spikes in outflows.

View chart version

Figure 8a: Year-over-year percent change in median total income by income quartile (four-week periods)

Line graph showing year-over-year percent change in median total income by income quartile. Median total income is elevated in April 2020 relative to 2019, depleting most of those initial gains by the following month and continuing downward before reaching a steady state throughout the fall and winter of 2020. In January 2021, families experienced a marked increase in total income.

View chart version

Figure 8b: Year-over-year percent change in median labor income by income quartile (four-week periods)

Line graph showing year-over-year percent change in median labor income by income quartile. In late March, labor income began to decrease relative to 2019 levels for all income groups, reaching a low in late May. By late July, labor income reached a steady state for the remainder of the year, slightly below 2019 levels.

View chart version

Figure 9a: UI recipiency rate by income quartile (four-week periods)

Line graph showing unemployment insurance recipiency rate by income quartile. UI recipient rate increased tremendously between March and June 2020, and has been gradually falling since for all income groups.

View chart version

Figure 9b: Conditional median UI amount, by income quartile (four-week periods)

Line graph showing conditional median unemployment insurance amount by income quartile. For families that received UI, amounts were elevated between May and July 2020, before dropping back down, and then rising again in January 2021.

View chart version

Figure 10: Year-over-year percent change in median spend, by income quartile (four-week periods)

Line graph showing year-over-year percent change in median spend by income quartile. Across the income distribution, families decreased their spending dramatically in April. Spending for all income groups began to rebound in May after the arrival of the first round of stimulus payments. Spend increased for all income quartiles in January 2021.

View chart version

Box 1: Year-over-year percent change in credit card and debit card spend, by income quartile (two-week periods)

Line graph showing year-over-year percent change in credit card and debit card spend by income quartile. Card spend decreases in March 2020 before gradually recovering. In the second half of the year, income quartiles 1-2 show elevated spending, while income quartiles 3-4 show slightly depressed spending.

View chart version

Figure 11a: Incidence rate of credit card payments, by income quartile (four-week periods)

Line graph showing incidence rate of credit card payments by income quartile. Payment incidence rates were relatively steady throughout the year.

View chart version

Figure 11b: Year-over-year percent change in conditional median credit card payment amount, by income quartile (four-week periods)

Line graph showing year-over-year percent change in conditional median credit card payment amount by income quartile. Families in income quartiles 1-3 saw increases in credit card payments in April and May 2020, following the first stimulus payments, while families in income quartile 4 saw depressed payments during that time. All income groups saw a spike in payments in January 2021.

View chart version

Figure 12a: Incidence rate of debt payments, by income quartile (four-week periods)

Line graph showing incidence rate of debt payments by income quartile. The incidence of debt payments was steady at the start of the year. Payment rates began falling in late March, reaching a new steady state by May. Notably, debt payments increased in January 2021.

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Figure 12b: Year-over-year percent change in conditional median debt payment amount, by income quartile (four-week periods)

Line graph showing year-over-year percent change in conditional median debt payment amount by income quartile. Conditional debt payment amount was below 2019 levels during the pandemic for the highest earners and elevated for income quartiles 1-3 starting in April 2020. All income groups experienced increases in payments by the end of 2020.

View chart version

Figure 13: Year-over-year change in mean outflows, by category (four-week periods)

Line graphs showing year-over-year change in mean outflows, by category, for each income quartile. For all income quartiles, we see a clear increase in spend after the distribution of the first stimulus payment. In addition, we see that outflow transfers, while marginally elevated relative to the prior year throughout the pandemic, see an additional increase in January 2021.

View chart version

Figure A1: Year-over-year change in mean inflows, by category (four-week periods)

Line graphs showing year-over-year change in mean inflows, by category, for each income quartile. We see a clear spike in stimulus payments in April 2020, and a clear spike in uncategorized inflows in January 2021, corresponding to the second stimulus payment. Labor inflows are depressed in the first half of the year, and recover to prior year levels in the summer.

View chart version

Figure A2: Year-over-year change in mean spend, by subcategory (four-week periods)

Line graphs showing year-over-year change in mean spend, by subcategory, for each income quartile. Cash, paper checks, and debit card spend decrease in April 2020 before gradually recovering to 2019 levels. The lower income quartiles show faster recovery and surpass 2019 spend levels in the second half of 2020.

View chart version

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Endnotes

1 See Weathering Volatility 2.0 for analysis of our income data and other outcomes relative to nationally representative benchmark data.
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2 We focus on a sample of account holders for whom their Chase checking account is likely to be their primary checking account and provide a good window into their financial life. Specifically, we select account holders who have had at least five transactions per month across their checking accounts between December 2018 and February 2020 and at least $12,000 in 2019 annual labor income.
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3 Account balances are recorded daily. Throughout this report, the weekly balance for a given family is calculated by (1) summing across all of the family's checking accounts to get their total daily balance, and (2) averaging the Sunday through Saturday daily balances; we refer to this average as their weekly balance.
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4 The Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed into law in late March 2020 with the goal of providing "fast and direct economic assistance for American workers, families, and small businesses." As part of the CARES Act, the Treasury Department and the Internal Revenue Service distributed Economic Impact Payments (EIP) to families beginning in mid-April. Eligibility was based on family income, and funds were automatically distributed to eligible families: up to $1,200 for individuals or $2,400 for married couples and up to $500 for each qualifying child. A second round of EIP, distributed in January 2021, provided up to $600 for individuals or $1,200 for married couples and up to $600 for each qualifying child.
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5 The first round began on April 15, 2020, and most payments were delivered by the end of April, but payments continued through May and June (Bitler et al. 2020). The second round began disbursement on January 4, 2021, payments were completed by the first week of February (Bureau of Fiscal Service 2021).
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6 Aggregate series either combine deposits of households and nonprofit sectors or reflect total deposits of all commercial banks.
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7 A recent JPMorgan Chase Institute report on Small Business Expenses During COVID-19 shows year-over-year median balances remaining elevated from July through September, a departure from the median balance trends observed for households in this report.
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8 We measure the age of the primary account holder, in cases with multiple individuals attached to a families' set of accounts.
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9 Quartiles are based on labor income for the 2019 calender year, where labor income is defined as income into the checking account via direct deposit paycheck. This represents take-home income, after taxes and other paycheck deductions, such as health insurance contributions. Households in quartile 1 earned between $12,000 and $30,296 in labor income; quartile 2 households earned $30,296 to $44,955; quartile 3 households earned $44,955 to $68,896; and quartile 4 households earned more than $68,896.
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10 Moreover, conclusions from Figure 3 hold for both low-income and high-income families: across the income distribution, the distribution of within-family balance changes has shifted positive. In other words, at all income levels, fewer families experience balance declines during the pandemic than prior to the pandemic.
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11 Our industry analysis sample includes only families that are associated with the the same industry for every month in our sample. Families that do not have industry information available, or are associated with more than one industry over time are removed from our analysis. Overall, our industry sample includes 635,000 families, or 37 percent of our full sample.
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12 Our choice of four-week periods results in a smooth income series for families who receive paychecks on a biweekly cadence, which results in two paychecks per period in our series. However, families receiving paychecks bi-monthly will occasionally receive a single paycheck in a four-week period, rather than two. This single-paycheck anomaly occurs in late May 2020, and late June 2019, resulting in lower-than-typical median labor inflows for those periods. When calculating changes on a year-over-year basis, the net effect is artificially depressed values in late May, rebounded by artificially inflated values in late June. This

phenomenon drives late-June spikes in our total outflows, total income and labor income views as well.
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13 There was a slight uptick in spend at this time—further explored in Finding 6—as well as an uptick in tax payments, due to the delayed tax deadline in 2020 from April to July. See Figure 13 for trends in outflow categories, including tax payments.
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14 Our labor income series does not always follow the same patterns as external data. For example, early in the pandemic our highest income quartile fell more than quartiles 2 and 3, which differs from trends in public benchmarks like CPS. This is a matter of construction: our labor income represents direct deposit take-home income, after taxes and witholdings, and is therefore difficult to compare with survey-reported measures of gross income.
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15 Our UI recipiency rate represents a lower bound of unemployment rates, because we observe only UI checks received via direct deposit to a family's Chase checking accounts. This means that our UI recipiency rate excludes unemployed households who are not eligible for UI or who receive UI via an alternative payment method (e.g. pre-paid debit cards or direct deposit to a non-Chase bank account). Data from the Federal Reserve show that the bulk of unemployment benefits nationally are paid via prepaid debit card, which we do not observe (Federal Reserve Board, 2019). If prepaid debit card recipients vary by income—e.g. if they are disproportionately lower-income workers—then our data will likely understate the gaps between recipiency rates of low- and high-income families.
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16 Note that the May increase in the conditional median falls short of the $2,400 increase expected from the FPUC supplement. This is likely driven by changes in the sample composition of UI recipients during the pandemic from the PUA program. Due to the nature of their work, PUA recipients likely have lower benefit levels, relative to the rest of the UI sample. So, the baseline median benefit amount for our sample decreased at the same time as the addition of the $600 weekly supplement, resulting in an observed increase of roughly $2,000 per four-week period, rather than $2,400.
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17 See, for example, Opportunity Insights Economic Tracker as well as JPMorgan Daily Consumer Spending Tracker.
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18 The changes in conditional medians represent changes only for the families making credit card payments. Refer to Figure 13 for the overall effect on the average dollar change in spend. Note that averages include families that do not make credit card payments in a given month, i.e. the average is a combination of payment amounts and zeroes for non-paying families.
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19 The first round of EIP inflows, in April 2020, were captured as part of the "tax refunds" category, due to the transaction descriptions associated with those direct deposit payments. The second round, in January 2021, had different formatting and fell into the "uncategorized inflows" category.
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