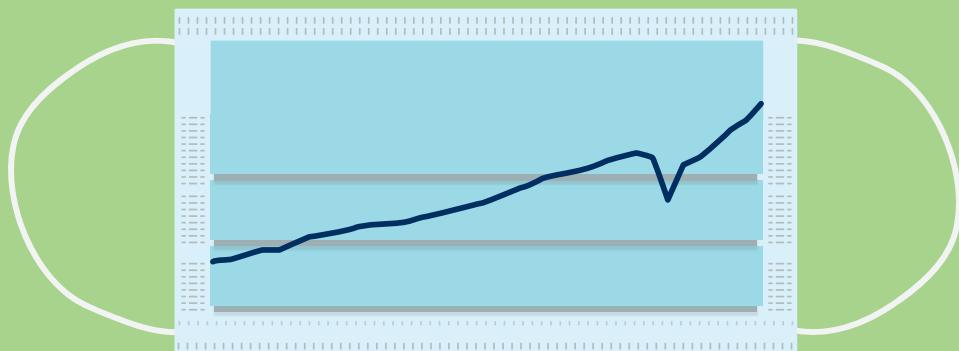


# RECESSION REMEDIES

Lessons Learned from the  
U.S. Economic Policy Response to  
COVID-19



Edited by

Wendy Edelberg, Louise Sheiner,  
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## CHAPTER 3

# Lessons Learned from Economic Impact Payments during COVID-19

*Michael Gelman and Melvin Stephens Jr.<sup>1</sup>*

## Introduction

The pandemic-induced recession that began in March 2020 led to a multitude of public health and economic policy responses from the U.S. federal government. Some, such as the Paycheck Protection Program, were novel. Others were familiar, including extending the duration of unemployment benefits and providing direct payments to households. Across three rounds spread over less than one year, more than \$800 billion in cash was distributed to households in the form of Economic Impact Payments (EIPs; also known as stimulus checks or payments).

This chapter discusses the lessons learned from the distribution of EIPs that can be applied to future recessions—including whether EIPs are an effective way to aid households who lose income in a downturn. The chapter begins by reviewing the structure of earlier tax rebate and economic stimulus payments, which were the precursors to the EIPs, followed by a discussion of the parameters of the EIPs. Next, we cover the demographic composition and economic status of EIP recipients, the timing of EIP receipt, and the extent to which EIP benefits helped offset income losses using data from the U.S. Census Bureau's Household Pulse Survey. The chapter then surveys the research that analyzes the impact of EIPs on household spending and compares the findings to the literature that examines how household spending was impacted by the prior payments. The final section turns to the lessons learned from this round of stimulus payments that can be applied to subsequent economic downturns.

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1. The authors are grateful to Mitchell Barnes and Moriah Macklin for providing excellent research assistance. The authors thank Karen Dynan, Jonathan Parker, participants in the October authors' conference, and the editors of this volume for their insightful feedback.

## Federal Rebate and Stimulus Payments

The onset of the COVID-19 pandemic in early 2020 led to numerous actions designed to protect public health and curb the spread of the disease, such as firms shifting to remote work and governments imposing stay-at-home orders, which coincided with a sharp decline in economic activity. Although novel factors contributed to this economic downturn, the federal government once again deployed the use of direct stimulus payments to combat a recession. The Coronavirus Aid, Relief, and Economic Security (CARES) Act, signed on March 27, 2020, mandated one-time stimulus payments as part of a broader package of fiscal measures constructed to address the economic challenges faced by households.

While the CARES Act marks the fourth time since 2001 that the U.S. government has provided direct payments to households, the use of this fiscal policy lever pre-dates the 21st century.<sup>2</sup> The Tax Reduction Act of 1975 (TRA 1975), signed into law on March 29, 1975, after the unemployment rate had risen nearly 3 percentage points in the prior 12 months, was intended to jumpstart an economic turnaround (Romer and Romer 2010). The law provided tax rebates to all taxpayers on income earned in 1974, ranging from \$100 to \$200 depending on the tax unit's adjusted gross income (AGI) (Internal Revenue Service 1975).<sup>3</sup> These rebate checks were disbursed by mail, primarily in May and June 1975.

Rebates were issued again following the signing of the Economic Growth and Tax Relief Reconciliation Act (EGTRRA 2001) on June 7, 2001. The Act lowered the marginal tax rate in the lowest tax bracket retroactively, to the beginning of 2001, and provided an immediate rebate to all taxpayers who filed returns for the 2000 tax year. While rebates were not originally part of the Act, concerns about an economic downturn led to the inclusion of these payments to immediately stimulate the economy (Romer and Romer 2009). The rebate amount was \$300, \$500, or \$600 depending on the taxpayer's filing status (single, head of household, or married, respectively).<sup>4</sup> The checks were delivered by mail and the vast majority were received in July, August, and September 2001, with the disbursement date determined by the tax filer's Social Security number.

The Jobs and Growth Tax Relief Reconciliation Act (JCTTAA 2003), signed on May 28, 2003, included a temporary \$400 increase in the Child Tax Credit for 2003 and 2004. Romer and Romer (2009) note that although there were

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2. We focus our discussion on stimulus payments from the U.S. federal government. Some U.S. state governments have issued rebates, as discussed by Heim (2007).
  3. Social Security recipients each received \$50 payments, as Social Security benefits were not taxed by the federal government at this time. The 1975 act also increased the standard deduction and provided a tax credit for each taxpayer and dependent for the 1975 tax year only.
  4. Those filers who earned less than the top income threshold for the first tax bracket received a proportionately smaller rebate. Johnson, Parker, and Souleles (2006) provide an overview of the EGTRRA 2001 legislation.

immediate economic concerns that motivated the design of the Act, the changes to the tax credit were intended to be made permanent. The law called for the \$400 increase for 2003 to be paid in advance, based on information provided in the 2002 tax return, which resulted in checks being mailed to 24 million households over a three-week period from July 25 to August 8, 2003.<sup>5</sup> The timing of check distribution was again based on the tax filer’s Social Security number.

Payments included in the Economic Stimulus Act (ESA 2008), signed on February 23, 2008, were intended, as stated in the text of the legislation, “to provide economic stimulus through recovery rebates to individuals.”<sup>6</sup> The Act, which provided substantially larger payments than in prior legislation, called for \$600 payments to singles, \$1,200 payments to married couples, and an additional \$300 for each qualifying child.<sup>7</sup> These benefits were based on 2007 tax returns and were disbursed electronically—for the first time ever—in the first weeks of May 2008 to those who had provided the Internal Revenue Service (IRS) with bank account information to receive a tax refund. The bulk of the remaining payments were delivered as checks through the mail from mid-May through early July.

Table 3.1 compares the features of the previous U.S. federal rebate/stimulus payments. While the TRA 1975 used a single formula to determine the payment amount regardless of marital status, the formulas for the remaining payments were based on filing status (single vs. married).<sup>8</sup> The JGTRRA 2003 and ESA 2008 payments both differed from the TRA 1975 and EGTRRA 2001 payments in that they were phased out at higher income levels.<sup>9</sup> Whereas the JGTRRA 2003 temporarily increased the existing Child Tax Credit, the ESA 2008 payments included, for the first time, higher benefit amounts for each qualifying child in the household. To compare the payment amounts over time, the final column of Table 3.1 shows the benefit amount for a family of four (married couple with two qualifying children) as a share of median monthly income for a four-person household.<sup>10</sup> This share is roughly constant across the first three stimulus episodes before nearly doubling with ESA 2008.

5. Johnson, Parker, and Souleles (2009) provide an overview of the JGTRRA 2003 legislation. Crandall-Hollick (2021) provides legislative details of Child Tax Credit changes over time. Although called a “tax credit,” these credits were already refundable by the time of the JGTRRA 2003 legislation.
6. See Economic Stimulus Act of 2008, Pub L. No. 110-185.
7. Parker et al. (2013) provided an overview of the ESA 2008 legislation.
8. Although “head of household” is another filing status that is used to determine benefits, we have omitted this information for expositional purposes.
9. The phaseout of the Child Tax Credit payments as part of JGTRRA 2003 resulted from the Child Tax Credit itself already being phased out for higher income tax filers as opposed to being an addition to the JGTRRA 2003 legislation.
10. The payment amount in the numerator of the share is the base stimulus payment amount for a married filer plus the additional amount, if applicable, for both qualifying children. For 1975, the payment amount used in this calculation is \$200, as the median annual income for a four-person household in 1975 was \$15,849. The median annual income for a four-person

**TABLE 3.1****U.S. Federal Stimulus Payments**

Legislation	Base Amount		Additional Per-Child Amount	Phaseout Region Begins		Payment Share of Monthly Income
	Single	Married		Single	Married	
Tax Reduction Act (1975)	\$100 to \$200					15%
Economic Growth and Tax Relief Reconciliation Act (2001)	\$300	\$600				12%
Jobs and Growth Tax Relief Reconciliation Act (2003)			\$400	\$75,000	\$110,500	15%
Economic Stimulus Act (2008)	\$600	\$1,200	\$300	\$75,000	\$150,000	29%
Economic Impact Payment Round 1	\$1,200	\$2,400	\$500	\$75,000	\$150,000	38%
Economic Impact Payment Round 2	\$600	\$1,200	\$600	\$75,000	\$150,000	27%
Economic Impact Payment Round 3	\$1,400	\$2,800	\$1,400	\$75,000	\$150,000	63%

Source: Internal Revenue Service 1975, 2020a, 2020b, and 2021; Johnson, Parker, and Souleles 2006 and 2009; Parker et al. 2013; U.S. Census Bureau 2020; authors' calculations.

Note: Base amounts shown in column (1) are for single and married tax filers, respectively, except for the Tax Reduction Act of 1975,

where the same payment scheme is applied to both single and married households: the highest amount was paid to households under \$20,000 AGI and the lowest amount was paid to households with over \$30,000 AGI. Column (2) shows the increase in the payment per child, where applicable. Column (3) shows the Adjusted Gross Income amount at which the phaseout region begins, where applicable, for single and married tax filers, respectively. Column (4) shows authors' calculations of the payment as a share of median monthly income for a household with married parents and two qualifying children.



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## Direct Payments to Households During the Pandemic

Whereas previous direct payments to households were designed to counteract slumping aggregate demand, the initial round of EIPs was publicly discussed as a form of insurance. For example, Senator Mitt Romney said, “While expansions of paid leave, Unemployment Insurance, and SNAP benefits are crucial, the check will help fill the gaps for Americans that may not quickly navigate different government options (Higgins and Mangan 2020).” In contrast to other social insurance programs, the EIPs did not require the majority of households to submit any new paperwork and hence had a higher chance of uptake conditional on eligibility. In addition, the historic rise in Unemployment Insurance (UI) claims caused many state UI systems to be overwhelmed leading to numerous delays in UI receipt. Furthermore, school closures and adverse

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household used in these calculations was produced by the Census Bureau using data from the March Current Population Survey and can be found on the U.S. Census Bureau website.

health events affected the ability of some individuals to work who could not avail themselves of existing insurance programs. As discussed below, the EIPs were rapidly distributed to most households, which provided an immediate source of income support for many households, particularly those that applied and were still waiting for benefits from other government programs.

The EIPs were also widely seen as a way for Americans to maintain their ability to buy necessities. Then-Senator Kamala Harris called for “emergency cash” for families, which implies they would use the money for bills and necessities rather than discretionary spending. Michael R. Strain and Scott Gottlieb (2020) wrote an opinion piece arguing that rebate checks should be targeted to low-income households in places with severe outbreaks. They maintained that such rebate checks would allow hourly wage workers to stay home if they were sick, which would help contain the spread of COVID-19.

There were three rounds of EIPs issued to households in response to the COVID-19 pandemic. The first EIP was mandated in late March 2020 by the CARES Act (Internal Revenue Service 2020a). It included \$300 billion in cash payments as refundable credits against 2020 personal income taxes for eligible individuals. Married couples with an AGI of less than \$150,000 received \$2,400 while unmarried individuals with an AGI of less than \$75,000 received \$1,200. Benefits were increased by \$500 for each qualifying child (under age 17). EIP benefits were reduced if a household’s AGI exceeded its corresponding threshold. The benefit reduction rate was 5 percent. In other words, each \$1,000 in AGI above the threshold lowered the EIP by \$50.<sup>11</sup> For those who had filed tax returns in 2018 or 2019, the information from the tax returns was used to automatically distribute payments based on the aforementioned benefit formulas. For those who had not filed tax returns, payments were still received automatically if the individual received benefits through certain federal programs.<sup>12</sup> Individuals could also request an EIP through the IRS website. Payments were first made via direct deposit on April 15, 2020, with roughly 50 percent of all EIPs being delivered by mid-April and nearly 90 percent being delivered by early June (Murphy 2021). Delivery of EIPs through other means (paper check and debit cards) began soon after.

The second EIP was mandated by the Coronavirus Response and Relief Supplemental Appropriations Act, which was signed on December 21, 2020, and included \$166 billion in cash payments. The base amounts were half the size of those in the first EIP round while the payment for each qualifying child

11. Given this benefit reduction rule, married households that had no qualifying children did not receive an EIP if their AGI exceeded \$198,000 while the corresponding cutoff for households with two qualifying children was \$218,000. For unmarried households, the AGI cutoff with no qualifying children was \$99,000 while the cutoff with two qualifying children was \$119,000.

12. Automatic payments were made to recipients of Social Security, Supplemental Security Income, Railroad Retirement, or Veterans Administration pension benefits.

increased from \$500 to \$600. The phaseout regions and benefit reduction rate did not change. Automatic payments were made to those who had filed 2019 tax returns, were beneficiaries of certain federal programs (as with the first round of EIP payments), or were registered for the first round EIP payment. Payments were first made via direct deposit starting December 29, 2020, with the delivery of paper checks and debit cards starting soon after (Internal Revenue Service 2020b).

The third EIP, which totaled \$400 billion in stimulus payments, was mandated by the American Rescue Plan Act, which was signed on March 11, 2021. The base amounts were slightly higher than in the first round of payments, equaling \$1,400 for single filers and \$2,800 for married filers. Households also received \$1,400 for each qualifying dependent, whereas in prior EIP cycles the additional amounts were limited to children under the age of 17. EIP payments to single households again began to be phased out at \$75,000, but in this round, these were entirely phased out for those with an AGI above \$80,000 regardless of the number of dependents. For married households, the phaseout began at \$150,000 and was entirely phased out above \$160,000. Automatic payments were made to those who had filed 2019 or 2020 tax returns, were beneficiaries of certain federal programs (as with the earlier rounds of EIP payments), or were registered for the first round EIP payment. Payments were first made via direct deposit starting March 12, 2021, with paper checks and debit cards being delivered in the following weeks (Internal Revenue Service 2021).

The three EIP payments differ from earlier rebate and stimulus payments in several respects. First, as shown in Table 3.1, the EIP amounts were a lot larger. Over a period of less than one year, a family of four with income less than \$150,000 received \$11,400, compared to just \$1,800 in 2008. Second, EIP eligibility did not have minimum income requirements based on tax filings which opened up payments to additional low-income households. Third, the EIP payments were distributed very soon after the legislation was signed, beginning the next day in the case of the last round of EIP payments, whereas past stimulus payments took several weeks to reach households, since paper checks were printed and then distributed through the mail. However, there is an important caveat related to the speed with which checks were distributed. Households did not automatically receive the EIP if they did not have current bank account information on file with the IRS, which occurred for households that did not need to file taxes, did not need to provide account information when filing (e.g., for households that did not receive refunds), or had a temporary account set up by a tax preparer that was closed after their refund was received (Holtzblatt and Karpman 2020). Due to the need to claim their EIP benefit (and even become aware of these requirements), households sometimes had to wait several weeks before receiving EIP payments, if they even applied for them.

## Who Received the Economic Impact Payments?

The U.S. Census Bureau's Household Pulse Survey (HPS) provides some insight into the demographic composition and economic situation of households that received an EIP.<sup>13</sup> The HPS was “designed to meet the goal of accurate and timely weekly estimates” of how American households were experiencing the pandemic (Fields et al. 2020). The first phase of the HPS was in the field between April 23 and July 21, 2020, while subsequent phases covered most weeks between August 19, 2020 through early 2022.

The HPS was designed “to accommodate anticipated lower response rates and still produce estimates at the state level as well as for 15 metropolitan statistical areas (Fields et al. 2020).” Thus, the available data has large samples with typically over 50,000 respondents despite the survey response rates being rather low. The first phase of the HPS (weeks 1–12) had weighted response rates that averaged roughly 3 percent. The response rates were higher for the second phase (weeks 13–17), averaging around 9 percent, and declined roughly to 6.5 percent through October 2021 (weeks 18–39). We use survey weights in our analysis that can account for low response rates with regard to observable characteristics. To our knowledge, there are no studies to date addressing whether the low response rates impact findings using the HPS data due to selection into the survey for unobservable reasons. Nonetheless, readers should be mindful of the HPS response rates when interpreting the results using the HPS presented below.

The HPS only collects demographic and labor market status information from an adult respondent, not the entire household. While some questions refer to the entire household, such as total annual income during the past calendar year and EIP recipiency, the HPS only provides a limited picture of the household demographic and economic situation.

Retrospective questions regarding whether households in the HPS had received payments from the first round of the EIP appeared between June 11 and July 21, 2020 (weeks 7–12 of the HPS). Respondents were asked whether they or anyone in the household had received or planned to receive the EIP (first round) and, if so, whether they had already or planned to use the EIP mostly to pay for expenses, mostly to pay off debt, or mostly to add to savings. The data do not allow us to distinguish between those who had already received an EIP and those who planned to receive an EIP. However, Murphy (2021) notes that almost 90 percent of EIPs were received by early June 2020, so most of those giving an affirmative response to the EIP receipt question

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13. Fields et al. (2020) provide a detailed description of the design and implementation of the HPS, including information about the sampling frame, questionnaire construction, editing and imputation procedures, and so on. The background information on the HPS found in this section is based on the discussion in Fields et al. (2020).

during this phase of the HPS would have already received their EIP. When similar questions reappeared on the HPS between January 6 and July 5, 2021 (weeks 22–33), with regard to the second and third round of EIPs, the question was worded differently: it only asked about receiving the EIP during the last seven days, which complicates the study of EIP recipiency. Thus, we limit our examination to the first round of EIP payments.<sup>14</sup>

Eighty-six percent of HPS respondents interviewed between June 11 and July 21, 2020 reported either having received or expecting to receive an EIP.<sup>15</sup> Of those entitled to the full EIP payment based on 2019 income (less than \$150,000 for couples and \$75,000 for singles), 93 percent reported receiving or anticipating receiving it. To examine the variation in recipiency by income, Table 3.2 shows outcomes based on calendar year 2019 household income for currently married respondents. Results for single respondents—not shown—tell a similar story.<sup>16</sup>

The results in column 1 of Table 3.2 are broadly consistent with the program parameters: very high rates of receipt reported for married couples with less than \$200,000 in 2019 income with much lower rates for households with incomes above \$200,000. The finding that some households with incomes in the above \$200,000 category reported receiving the EIP may be due to multiple reasons. First, while the EIP benefit phaseout region ends for married households with no qualifying children at an AGI of \$198,000, each qualifying child raises the endpoint of the phaseout region by \$10,000. Second, a household’s AGI, which is used to determine EIP eligibility, can differ from the total income measure used in Table 3.2 through an array of deductions (e.g., student loan interest payments, alimony, retirement account contributions, etc.) that make AGI fall below total household income. Third, it is well-known that there is some degree of error found in survey reports of earnings and income that may lead some individuals to be incorrectly categorized in this highest income group.

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14. Beginning on June 11, 2020 (week 7), the HPS has consistently asked respondents, “Which of the following did you use to meet your spending needs in the last seven days?” EIP has been on the possible listed responses to this question. However, responses to this question also do not allow us to clearly delineate between those who did and did not receive (or plan to receive) an EIP.

15. This share is higher than the 70 percent recipiency rate reported by Holtzblatt and Karpman (2020) using the first wave of the Coronavirus Tracking Study; however, their figure only includes those who received benefits as of late May 2020 and does not capture future expected (first round) EIP payments. Their sample is also limited to those between ages 18 and 64 with income less than 600% of poverty. If we examine a similar population in the HPS, we find 91 percent reported either having received or expecting to receive an EIP as of July 21.

16. Over 13 percent of the weighted HPS respondents did not provide an answer to the categorical total household income question during this period. These respondents are excluded from Table 3.2.

TABLE 3.2

## EIP Recipiency, Economic Shocks, and Spending Sources, by Income among Married Respondents

Total Household Income (2019)	Share of Household That...		Share Using Listed Source to Meet Spending Needs				
	Received EIP	Lost Employment Income	Regular Source of Income, Like Received Pre-Pandemic		UI Benefits	Borrow from Friends or Family	EIP Benefits
			Received	Pandemic			
Less than \$25,000	89%	58%	51%	13%	25%	30%	
\$25,000 to \$34,999	93%	53%	62%	14%	14%	29%	
\$35,000 to \$49,999	95%	49%	71%	15%	10%	25%	
\$50,000 to \$74,999	95%	47%	77%	13%	6%	24%	
\$75,000 to \$99,999	95%	44%	82%	13%	4%	20%	
\$100,000 to \$149,999	93%	39%	87%	10%	2%	16%	
\$150,000 to \$199,999	77%	33%	89%	8%	1%	10%	
Over \$200,000	23%	28%	93%	4%	1%	3%	

Source: U.S. Census Bureau Household Pulse Survey n.d.; authors' calculations.

Note: Tabulations using Household Pulse Survey for weeks June 11 through June 21, 2020.



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Households in the lowest income group were less likely to have received an EIP, or to anticipate receiving an EIP, than EIP-eligible higher income households. Holtzblatt and Karpman (2020) provide additional insight into those who did not receive an EIP as of late May 2020. They found that nearly 40 percent of those not receiving an EIP did not file taxes or receive Social Security benefits. This figure rose to nearly 50 percent when they focused on households below the federal poverty line. In terms of the means to receive such payments electronically, Holtzblatt and Karpman found that 40 percent of nonrecipients and 50 percent of nonrecipients under the poverty line did not have bank accounts. As a result, while many higher income families received their EIPs quite rapidly, a substantial share of low-income households were required to take additional steps before they could ultimately obtain their EIP benefits. Even by mid-September 2020, roughly nine million eligible individuals had still not received an EIP (Government Accountability Office 2020).<sup>17</sup>

17. Eligibility for the EIP was impacted for those living in households with unauthorized immigrants. U.S. citizens who jointly filed taxes with someone who did not have a Social Security number but instead had an IRS Individual Tax Identification number were ineligible for the EIP. Chishti and Bolter (2020) estimate that this restriction rendered 5.1 million U.S. citizens and green card holders ineligible for the EIP. These restrictions were relaxed to some extent

Marr et al. (2020) further examined the composition of those eligible for but not automatically receiving EIP payments. Using data from the Census Bureau's Current Population Survey, they estimated that roughly 12 million individuals did not automatically receive EIPs, because they were non-filers and did not receive benefits from a federal program that entitled them to automatically receive an EIP.<sup>18</sup> Based on modelling government benefit recipiency, Marr et al. found that 75 percent of these individuals were enrolled in either Medicaid or the Supplemental Nutrition Assistance Program (SNAP; formerly the Food Stamp Program) and had disproportionately low levels of education and were disproportionately non-white. They argue that leveraging state and local agencies that administer these benefit programs could provide a faster path for delivering EIP benefits to households that are not automatically receiving their EIP benefits.

EIP benefits were broadly targeted with eligibility based solely on income and family structure. Such widespread availability seems appropriate if a large fraction of the population was affected economically by the pandemic, because EIPs are an efficient and quick source of support for households. The HPS includes a question that can shed light on this issue. In particular, it asks "Have you, or has anyone in your household, experienced a loss of employment income since March 13, 2020?"<sup>19</sup> As shown in the second column of Table 3.2, roughly 60 percent of the lowest-income households reported themselves or someone in their household suffering a loss of employment income in the four to five months following the onset of the pandemic. While the likelihood of suffering a loss of employment income decreased as household income increased (based on 2019 income), a little more than a quarter of the highest income married-couple households reported the recent loss of employment income. Overall, the share of respondents reporting having experienced a loss of employment income was 45 percent.

Another indication that the first round of EIPs served as an important source of relief is that households who reported suffering an income loss were more likely to spend their EIP. Among households reporting at least \$100,000 in income that received an EIP, roughly 15 percent of those who experienced an income loss reported mostly saving the EIP while around 35 percent of those who did not experience a loss reported mostly saving the EIP.

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for the second round EIP and allowed some families to retroactively apply for the first round EIP (Murphy 2021).

18. Over 26 million non-filers who received Social Security, Supplemental Security Income, Railroad Retirement, or Veterans Administration pension benefits automatically received their EIP due to coordination between the IRS and the federal agencies that oversee their benefits (Murphy 2021).
19. The wording of this question was changed roughly one year later, beginning April 14, 2021, to "Have you, or has anyone in your household, experienced a loss of employment income in the last 4 weeks?"

The differences persist but are less stark for households in the lowest income group, where the corresponding shares reporting that they mostly saved the EIP was less than 2 percent for those who experienced an income loss and less than 7 percent for those who did not.

Of course, many people who suffered employment losses were also eligible for Unemployment Insurance. However, only about one quarter of the labor force actually experienced a spell of unemployment from March to July of 2020, suggesting that many people experienced income losses without being unemployed (for example, from loss of hours or tips).<sup>20</sup> Furthermore, as noted in Chapter 2 of this volume, there were significant delays in processing UI claims at the beginning of the pandemic, and the EIPs likely helped support families who would otherwise have faced significant financial distress. Lastly, early in the pandemic the EIPs likely acted as a form of insurance for recipients who hadn't yet suffered any income loss but faced enormous uncertainty.

Administrative data are another source of information on the efficacy of EIPs at addressing earnings losses during the pandemic. Larrimore, Mortenson, and Splinter (2021) combined earnings information from W2s available to the IRS along with administrative reports of UI benefit receipt and EIP receipt to examine the extent to which these government transfers helped households offset lost earnings during the pandemic. They found that between 2019 and 2020, one-third of tax filers suffered a decline in earnings of at least 10 percent, which they define as a large earnings loss. This share of large earnings losses was the same as was found during the first year of the Great Recession and was a marked increase from the comparable 25 percent figure between 2018 and 2019. When measuring earnings instead as the sum of W2 earnings plus UI benefits, this number falls from 33 percent to 24 percent, indicating an important role for UI benefits in offsetting pandemic income losses. Notably, when EIP benefits are also included as earnings, the share suffering large earnings losses declines further to 19 percent.<sup>21</sup>

The impact of EIP and UI benefits in offsetting earnings losses varied greatly across the earnings distribution. Larrimore, Mortenson, and Splinter (2021) found that 22 percent of tax filers in the highest 2019 earnings quintile suffered large earnings losses. UI benefits and EIP payments only lower this share by one percentage point each. In the lowest earnings quintile, where 51 percent suffered large earnings losses, these benefits played a much larger role. After adjusting for UI benefits, the share with a large loss falls to 37 percent, and after adjusting for the combination of UI and EIP payments, they find that 25 percent were impacted by large losses. As a point of comparison, they noted that UI benefits had essentially no role in reducing the share in

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20. Authors' calculations from the Current Population Survey.

21. As another point of comparison, Larrimore, Mortenson, and Splinter (2021) found that 26 percent of filers report declines of 10 percent or more in income from earnings and UI combined.

the bottom quintile suffering large earnings losses during the first year of the Great Recession (when 48 percent in the bottom quintile experienced a large earnings loss) or in 2019 (42 percent).<sup>22</sup>

These results indicate that EIP and UI benefits helped offset earnings losses for many households at the onset of the pandemic. Of course, households may have relied on a number of income sources during the pandemic. The HPS asks respondents, “Thinking about your experience in the last 7 days, which of the following did you use to meet your spending needs?” Households could select one or more responses from a list of potential income sources. A few months into the pandemic, when the HPS data used in Table 3.2 were collected (June 11 and July 21, 2020), the vast majority of households in the highest income group relied on regular income similar to pre-pandemic sources (column 3).

What sources of income did relatively low-income households rely on in the early months (June and July 2020) following the onset of the pandemic? Roughly one in seven households relied on UI benefits during this period across all but the highest income groups (column 4). The lowest-income households were the most likely to rely on borrowing from friends and family, with over one-quarter of these households doing so (column 5). Interestingly, two to three months after the first EIP began distribution, nearly one-third of the lowest-income households reported relying on the EIP to meet their spending needs (column 6), consistent with the particular importance of EIP benefits to the lowest-income households, as found in the IRS data. Consistent with the Larrimore, Mortenson, and Splinter (2021) results, these findings highlight the importance of the EIP payments in addressing the needs of the lowest-income households.

Other aspects of the social safety net were expanded by Congress in response to the pandemic (Bitler, Hoynes, and Schanzenbach 2020; Moffitt and Ziliak 2020). One change was to increase—for states that chose to participate—a household’s monthly SNAP benefit to the maximum monthly amount based on the household’s size. Another change was the creation of the Pandemic Electronic Benefit Transfer (P-EBT), which provided benefits to those families with children who would have received free or reduced-price school meals if schools had remained open. Rental assistance and Medicaid spending also increased during the pandemic.

Understanding the interaction between EIP payments and these additional programs is quite important. Given the broad set of households that received EIP benefits, many of those that were eligible for these other programs were also eligible to receive an EIP, thus providing an additional income source to the

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22. Larrimore, Mortenson, and Splinter (2021) found that 42 percent of those suffering large earnings losses received UI benefits in 2020, a large increase relative to the first year of the Great Recession (27 percent) and a dramatic increase from the prior calendar year (9 percent).

most vulnerable households.<sup>23</sup> At the same time, the breadth of EIP eligibility also may have played an important role in supporting households that did not immediately apply for other benefits or had difficulty obtaining other benefits. Moreover, EIP payments may have proven to be quite beneficial to households that fell through holes in the social safety net (e.g., those finding themselves ineligible for standard benefit programs due to their limited work history).

Overall, the findings discussed in this section show that the first round of EIP payments contributed to combatting pandemic-induced earnings losses, especially among low-income households. Although payments were broadly distributed, they addressed what appears to be widespread need. However, the EIPs were slow to get to many eligible low-income households whose incomes were disproportionately impacted in 2020. An important area for additional study is whether EIP payments benefitted households that fell through the holes in the social safety net, i.e., those who could not obtain benefits from other social programs, or at least could not do so in a timely manner.

## The Consumption Response to the EIP Payments

There is a burgeoning literature examining the consumption impact of EIP benefits. Most studies estimate the marginal propensity to consume (MPC), i.e. the share of the increase in income that is spent by the household. Research investigating the consumption response to the EIPs can broadly be divided into two groups based on the type of data used in the analysis. The first group used bank and credit card transaction data that can be aggregated across time to form a measure of spending for different time periods ranging from daily to monthly. The second group leveraged self-reported survey data where households are asked about spending over a fixed time horizon or about broad categories of use for their EIP (e.g., spend, save, pay off debt).

Table 3.3 provides a summary of the papers discussed in this section that examine the spending response to the EIP payments. Comparing MPC estimates across these studies is challenging due to differences in the types of data used (transactions vs. survey data), differences in sample composition, and differences in the empirical specifications employed. Comparisons to the prior literature that examined the MPC of earlier rebate episodes are also difficult for related reasons. We discuss several of these issues below in our review of this literature.

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23. However, as we discussed above, a significant share of these households may not have automatically received an EIP payment.

**TABLE 3.3****EIP Response Study Summary**

Study	Data Source	EIP Round	MPC Reference Period		Notes
			MPC	Period	
Baker et al. (2020)	Fintech bank account (SaverLife)	1	0.25–0.40	Two weeks	Lower income sample. Those with lower incomes, greater income drops, and less liquidity show largest responses.
Boutros (2020)	Household Pulse survey	1	NA	NA	Almost 75% of households receiving an EIP reported using it to mostly pay for expenses.
Chetty et al. (2020)	Various administrative Fintech sources	1	NA	NA	Only Fintech App users. They show that spending increased discontinuously upon receipt of the EIP. Low-income areas increased spending the most.
Coibion, Gorodnichenko, and Weber (2020)	Nielsen Homescan survey	1	0.4	Not specified	The MPC was derived from those who say mostly increase spending, mostly increase saving, mostly pay off debt.
Cox et al. (2020)	Chase bank account	1	NA	NA	Excludes the unbanked. They show spending rebounded in mid-April after the first EIP was disbursed.
Karger and Rajan (2021)	Fintech bank account (Facteus)	1 and 2	0.46	Two weeks	Lower income sample.
Misra, Singh, and Zhang (2020)	Fintech bank account (Facteus)	1	0.29–0.51	Four days	Lower income sample. MPCs higher in areas that were dense, high cost-of-living, and more movement restrictions.
Sahm, Shapiro, and Slemrod (2020)	Michigan Survey of Consumers	1	0.40–0.60	Yearly	MPC is backed out from questions about mostly increase spending, mostly increase saving, mostly pay off debt.
Cooper and Olivei (2021)	Fintech bank account (Facteus)	1	0.66	Sixteen weeks	Lower income sample. They control for other income receipts such as tax refunds.
Parker et al. (2022)	Consumer Expenditure Survey	1	0.11	Quarterly	The MPC is 0.73 for those who received payment via debit card.

## Comparing Transaction and Survey Data

The proliferation of new data sources is a welcome development in our efforts to better understand the consumption response to rebate checks. However, a variety of challenges arise in comparing results across the myriad of different sources. Each data source represents a unique slice of consumption behavior, and it is important to understand the advantages and limitations of each.<sup>24</sup>

The advantages of transaction data relative to survey data typically include its high frequency, low measurement error conditional on observation, large sample size, panel length, and granularity.<sup>25</sup> The limitations include measurement error in observing consumption categories; lack of account completeness; difficulty in observing large, durable purchases; and lack of representativeness of users.

The types of spending covered by transaction data and survey data also vary. Transaction data typically track debit and credit cards and will miss larger durables that tend not to be purchased with cards, such as automobiles. Transaction data may also misidentify transfers and debt repayments as spending. Lastly, transaction data will categorize spending based on the point of sale rather than the type of item purchased.<sup>26</sup> Survey data cover a wider range of consumption goods but are subject to recall error if individuals misremember exactly what they bought over the reference period, which may vary from days to months.

Another difference between transaction and survey data is the unit of observation. Transaction data capture bank and credit card accounts, and it is not always clear if these accounts represent spending for an individual or a household. On the other hand, survey data typically use households as the unit of observation.

We view transaction and survey data as complementary sources used to uncover various aspects of the consumption response to rebate checks. The high-frequency nature of transaction data allows us to better understand the speed of the consumption response. Furthermore, the larger sample sizes found in the typical transactions dataset—relative to survey datasets—allow us to better investigate heterogeneity in the response across demographic characteristics. On the other hand, the more comprehensive nature of survey data allows us to obtain a more complete picture of spending. Lastly, the carefully crafted

24. See Baker and Kueng (2021) for a detailed discussion of the advantages and limitations of household financial transaction data relative to other sources.

25. There are many different types of transaction data sources. There is generally a tradeoff between depth and breadth. For example, aggregators like Mint.com may include various accounts from different providers but will not include users who do not use the platform. The other extreme is data from credit card providers (e.g., Visa) that include the whole universe of Visa-card users but do not include other accounts that those individuals may also use.

26. For example, a purchase at Walmart can include a wide variety of goods, such as food, electronics, appliances, and clothing.

national representativeness of survey data allows us to better understand the aggregate response of consumption.

While it is hard to know exactly how estimates derived from survey and transaction data differ, there is some evidence that they provide similar estimates within the same dataset. Parker and Souleles (2019) combined transaction data (barcode level scans of items purchased) and survey data (questions about how respondents spent their rebate) for the same respondents to estimate the effects of the ESA 2008. The authors found that individuals reporting that they would mostly spend their rebate exhibit spending that is twice the amount of those reporting that they would use the rebate to either mostly save or mostly pay down debt. Furthermore, they found that estimates of the average propensity to consume are similar using both methods. Because the study used different elicitation methods within the same sample, it cannot address the concerns regarding differences in the representativeness between typical transaction and survey datasets.

## Studies Using Transaction Data

While not specifically focused on the spending response to the EIPs, the first studies using transaction data helped us understand income and spending dynamics during the early stage of the pandemic. Cox et al. (2020), using account-level data from JP Morgan Chase Institute (JPMCI), found that the weekly spending of the average JPMCI account holder fell roughly 35 percent from the second through fourth week of March 2020 relative to the same period in 2019. While the initial spending declines are roughly comparable across income quartiles, they find that, in the weeks immediately following the April 15 disbursement of the majority of EIP payments, spending mostly rebounded to pre-pandemic levels for the lowest income group while it remained 20 percent below pre-pandemic levels for the highest income group. While the study did not specifically isolate the impact of rebate checks, it was one of the first studies to imply that rebate checks played an important role in stabilizing spending.

Chetty et al. (2020) compared consumption during the pandemic to consumption in January 2020 using data on credit and debit cards collected from Affinity Solutions Inc. and cash transaction data collected from CoinOut. They found similar initial reductions in spending as the pandemic began and similarly large increases in consumption after April 15: for households in the lowest income quartile zip codes, the consumption increase was equal to 25 percent of pre-pandemic consumption and for households in the highest income quartile zip codes, the increase was 8 percent of pre-pandemic consumption.<sup>27</sup>

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27. Chetty et al. (2020) used data that was aggregated to the zip-code level for confidentiality purposes and was smoothed to a seven-day moving average to smooth out weekly fluctuations in spending. They were unable to examine heterogeneous responses at the account

Chetty et al. (2020) also found that spending on durables rose much more than spending on in-person services.

The next set of studies focus specifically on measuring the MPC out of the EIP payments. One major caveat is that the samples consist of younger and lower income individuals who may have higher MPCs because they have less capacity to borrow.

Baker et al. (2020) estimated MPCs using bank account data from the Fintech app SaverLife. The median post-tax income of \$25,824 and median balance of \$98 reflect a user base that is low income and struggling to save money. Examining daily expenditure data, they found an MPC of 0.37, with the spending response occurring entirely during the first two weeks after EIP receipt but concentrated during the first week. When weighted by demographic characteristics to account for the younger and lower income population, the implied MPC for the U.S. population falls to 0.27. Compared to previous stimulus payment episodes, the authors found less spending on durables and more spending on food and bill payments, such as rent and mortgages. When investigating heterogeneity, they find that individuals with lower incomes, greater income drops, and less liquidity show the largest responses.

A set of papers estimate the MPC out of the first round of EIP payments using transaction-level data from Facteus. The majority of the Facteus accounts are linked to prepaid cards and tend to be held by much lower income, unbanked, and younger individuals (Cooper and Olivei 2021). While these papers all use the same dataset, the actual analysis sample varies depending on the filtering criteria used. For example, median annual *post-tax* income is \$17,976 in Karger and Rajan (2021) and \$24,337 in Cooper and Olivei (2021). Karger and Rajan (2021) found an average MPC of 0.46, again concentrated in the first two weeks. Investigating those with lower and higher savings rates from January to March 2020, they found that those who only saved a little pre-pandemic had an MPC of 0.6, compared to an MPC of 0.24 for those who had saved more. Cooper and Olivei (2021) followed cardholders for a longer period. In contrast to other studies, they controlled for the receipt of tax refunds and other non-stimulus income.<sup>28</sup> They found a cumulative MPC similar to Karger and Rajan (2021) within the first two weeks, which grew to 0.66 over 16 weeks. Misra, Singh, and Zhang (2020) leveraged a publicly available version of the Facteus data that contains daily spending that is aggregated to the zip code level and found an MPC of 0.51 within a few days of receipt. All of these papers focus on the first round of EIP receipt. As of the writing of this chapter, there has been very limited work examining the spending response to subsequent rounds of EIP

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level but instead used geographic variation, such as zip code-level average income, to explore differences in the spending response across groups.

28. They find that while the initial spending reaction to the EIP payments is smaller than the reaction to tax refunds and other non-stimulus income, the cumulative spending reaction after 16 weeks is larger.

receipt. Using the same data as Chetty et al. (2020), Chetty, Friedman, and Stepner (2021) found that the response to the second EIP was lower than to the first EIP, with larger differences in the highest income quartile zip codes. Similarly, Karger and Rajan (2021) found an MPC of 0.39 from the second EIP, compared to 0.46 following the first EIP. While the MPCs are not dramatically smaller, these studies suggest that subsequent rounds of stimulus provided less of a boost than earlier rounds. While there is no clear evidence on why the response to the second EIP was smaller, one possible explanation is that households had relatively higher levels of liquidity at the time of the second EIP due to unspent portions of the first EIP, access to income from other benefits enacted during the pandemic, as well as an improvement in the labor market.<sup>29</sup>

In summary, studies using transaction data show a robust and rapid spending response to the EIPs for samples they studied. The MPCs range from 0.25–0.51 when measured over the first few weeks and 0.66 over a period of 16 weeks. Furthermore, the granularity of the data and larger samples allow the authors to investigate whether the MPCs are heterogeneous. In general, these studies confirm that individuals with less liquidity tend to have higher MPCs. This is a useful finding that can provide insight into the possible targeting of future rebate checks. The main weakness of transaction data used in many of these studies is the overrepresentation of younger and lower-income individuals.<sup>30</sup> While it is useful to understand the behavior of low-income individuals that likely benefit the most from the EIPs, we should not interpret the findings as representative of the U.S. population.

## Studies Using Survey Data

Studies using survey data are easier to compare across time relative to transaction data because they use a more consistent sampling frame and methodology. Two types of survey dataset questions are used to examine consumption responses. The first type of question asks respondents to record and/or recall recent purchases, usually prompting them to focus on (detailed) expenditure categories. MPCs are computed by comparing spending between individuals using differences in the timing of when the rebate is received, amounts that are received, and rebate eligibility status. The second type of question, pioneered by Shapiro and Slemrod (2003b), asks survey participants whether they used rebate checks to “mostly increase spending,” “mostly increase saving,” or “mostly to pay off debt.”

Coibion, Gorodnichenko, and Weber (2020) and Sahm, Shapiro, and Slemrod (2020) both surveyed participants using the Shapiro and Slemrod

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29. We discuss the evidence regarding the impact of the EIPs on household liquidity in the Longer-Term Impact on Spending section below.

30. The median post-tax income of the samples used in these studies is much lower than for the United States as a whole.

methodology. The former used the Nielsen Homescan panel in July 2020, which uses sampling weights to provide a nationally representative estimate. They found that 15 percent reported that, as of July, they had mostly spent the EIP while one-third reported that they mostly saved their EIP. When they asked households to assign dollar amounts to different categories of EIP use, they found on average 40 percent was spent, 30 percent was saved and 30 percent was used to pay down debt. The MPC is higher for those who are liquidity constrained, out of the labor force, residing in larger households, less educated, and receiving smaller amounts.

Sahm, Shapiro, and Slemrod (2020), interviewing individuals in May and June 2020 as part of the Survey of Consumers, found a nearly identical distribution of responses across spending, saving and debt repayment as Coibion, Gorodnichenko, and Weber (2020). Boutros (2020) and Parker et al. (2022) used a question that is worded slightly differently: mostly to pay for expenses, mostly to pay for debt, or mostly to add to savings. Using the Household Pulse Survey, Boutros (2020) found that roughly 75 percent of households receiving an EIP reported using it to mostly pay for expenses while only 11 percent reported using it to mostly add to savings, and 14 percent reported using it to mostly pay for debt. Parker et al. (2022) used questions from the June and July 2020 Consumer Expenditure Survey (CE) and found figures of 56 percent, 26 percent, and 18 percent for individuals reporting they used the EIP to mostly spend on expenses, savings, and paying off debts, respectively. The difference in wording makes it difficult to compare the responses in the HPS and CE with related questions in other studies.

Parker et al. (2022) used the CE Interview Survey, which contained questions about the amount of, timing of, and method of payment for the first round EIP. Examining quarterly spending changes within households, which exploit variation in the amount and timing of EIP receipt, they reported a three-month MPC of 0.10 for both nondurable and total spending. They did not find evidence of increased spending after the initial three months except for strictly nondurable goods. Although that small MPC is quite difficult to reconcile with the survey response that 56 percent reported mostly spending the EIP, the research did find an MPC that is at least double the magnitude among those that reported mostly spending their EIPs relative to those who reported mostly paying off debt and saving, respectively. The authors list a few concerns regarding the MPC estimates relative to Johnson, Parker, and Souleles (2006) and Parker et al. (2013), which studied the 2001 and 2008 rebates, respectively. Prior studies used the randomized and varied timing of rebate disbursement to estimate the MPC. However, for the EIP, timing was neither random nor very spread out.<sup>31</sup> When using the estimation method from their previous papers, they reported statistically weak and inconsistent results across specifications.

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31. Their study showed that 45.2 percent of recipients received the EIP on April 10 and 63.8 percent received the EIP in April.

Instead, to compute the MPCs for the 2020 EIP, they used a different procedure meant to better exploit the differences in spending across recipients and nonrecipients. Similar to other studies, they found that households with lower liquidity (either lower liquid wealth or due to receiving EIPs on debit cards) had higher MPCs relative to those with higher levels of liquidity.<sup>32</sup>

In summary, survey studies that directly asked recipients how they spent the payments found strong responses. Coibion, Gorodnichenko, and Weber (2020) found an MPC of 0.40 when asking individuals to assign dollar values to their rebate spending. Parker et al. (2022) estimated MPCs from the CE, which surveyed individuals about their spending. They found much smaller MPCs of 0.10 for nondurable and total spending. They provided three possible reasons for their small estimates. The first is that the pandemic limited spending opportunities; the second is that other studies overestimate the MPC due to their focus on lower-income individuals, which leads to a less representative sample; and the third is statistical issues that arise from statistical uncertainty and differences in speed of disbursement and broad eligibility of the rebate checks when compared to previous episodes.<sup>33</sup>

## Longer-Term Impact on Spending

While much of the research discussed above has naturally focused on the spending associated with EIP benefits, there is also interesting evidence on how EIPs impacted savings during the recession. Figure 3.1, which is taken from Greig, Deadman, and Sonthalia (2022), shows the impact of the EIP on checking account balances of JPMC customers over a sustained period of time, relative to the January 2019 balances, by pre-pandemic income quartile (2019 income). They found that the biggest initial percentage increase in checking account balances was in the lowest income quartile. For all income quartiles, checking balances remained elevated months after each EIP was disbursed. However, Greig, Deadman, and Sonthalia found that these balances were decreasing relatively rapidly in the weeks following the disbursement of EIP benefits. This finding is consistent with households using their EIPs over a longer period of time, although it is unclear how these funds are distributed over new purchases, covering fixed expenses (e.g., mortgages, rent, utility bills, etc.), or paying off past debts.

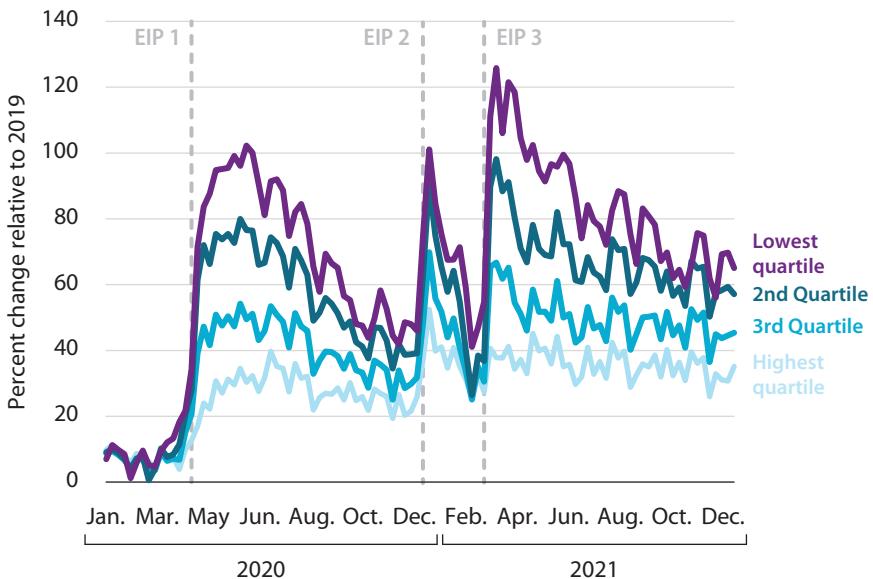
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32. As noted above, receiving a debit card is an indicator for lower-income individuals who either did not file for taxes, filed for taxes but did not receive a refund, or had an invalid banking account on file with the IRS.

33. The 2001 and 2008 rebate had much more variation in the timing of when the rebate checks were received. This helped to identify the MPC by comparing the spending of those that received the checks in certain months to those that had not yet received it but would at a future date. Because the EIPs were sent out so quickly in 2020, there is much less of this variation with which to estimate the MPC.

**FIGURE 3.1**

## Percentage Change (Relative to 2019) in Median Checking Account Balances by Income Quartile, JP Morgan Chase Customers



Source: Greig, Deadman, and Sonthalia 2022.

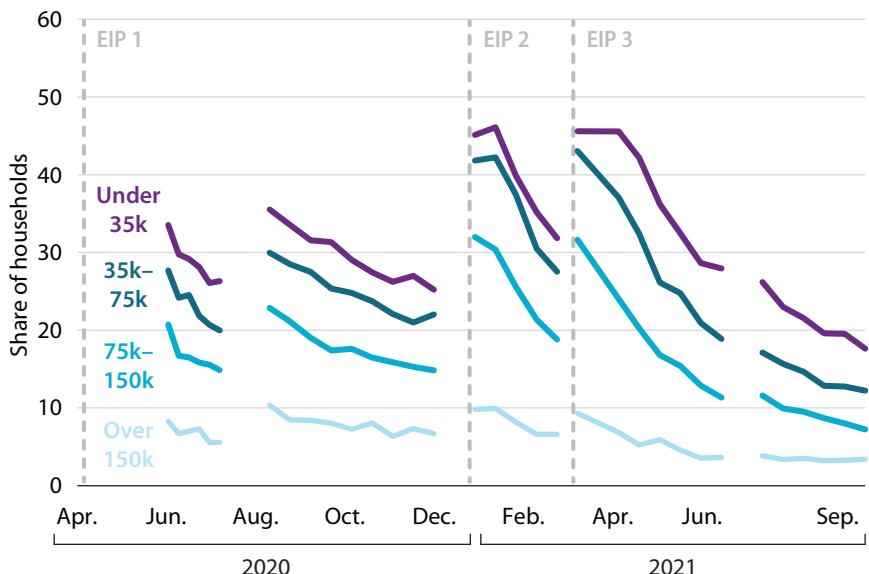
Note: Income quartiles are based on household total income in 2019, households in the lowest income quartile earned between \$12,000 and \$26,171, quartile 2 earned less than \$40,826, quartile 3 earned less than \$64,974, and highest quartile earned more than \$64,974.



The findings in Figure 3.2 are complementary to the findings in Figure 3.1 in regard to EIP spending. Beginning in week 7, households in the HPS were asked, “Thinking about your experience in the last 7 days, which of the following did you use to meet your spending needs? Select all that apply.” EIPs are one of the sources about which households are prompted to respond regarding recent spending. What is striking is that, although such funds are clearly fungible, households reported spending out of the EIPs many months after they were received. Moreover, the reported spending rates differ across income quartiles in a manner analogous to the findings for savings account balances, with the lowest income quartiles reporting the highest use of these EIPs to cover their

**FIGURE 3.2**

## Share of Households Reporting Spending from Economic Impact Payment in the Last Seven Days, by Income Quartile



Source: U.S. Census Bureau Household Pulse Survey n.d., authors' calculations.

Note: The HPS asks respondents the sources spending used to meet need over the previous seven days. This shows the share of households who reported using their EIP. HPS phases are denoted by line breaks.



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spending needs. These results suggest that the EIPs may have helped households prop up their spending many months after the benefits were received.<sup>34</sup>

Understanding the longer-term impact of EIP payments on spending is quite helpful, especially given the insurance motivation noted above for widely distributing these benefits. One issue limiting these investigations from a research perspective is the timing of the EIP distribution. While policymakers rightfully wanted to distribute benefits as rapidly as possible, the lack of

34. The across-the-board reported rise in EIP use between July 2020 and August 2020 corresponds to the switch between Phase 1 and Phase 2 of the HPS. In addition, the survey response rates increased when moving between these two phases. However, the precise reason for the observed increase in reported EIP use is unknown.

variation in the timing of benefit receipt makes it challenging to disentangle the timing of benefit receipt from other macroeconomic events. In other words, if everyone receives benefits on the same day, it is hard to separate spending even one week after the benefits were distributed to the receipt of the EIP as opposed to other changes in the economic environment (e.g., a sharp decline in stock prices).

## Comparisons to the Prior Literature

While access to and use of transaction data for research purposes has dramatically expanded in recent years, there is scant research using such data to examine prior rebate and stimulus payment responses. Agarwal, Liu, and Souleles (2007) examined the payment, spending, and debt response to the EGTRRA 2001 rebate using monthly credit card account data from a national financial institution. They found an immediate increase in payments to the credit card that was followed a few months later by an increase in card spending. While they found insignificant cumulative impacts on average nine months after rebate receipt, they found a cumulative MPC of 0.40 among those for whom the account in the sample was their most intensively used one.<sup>35</sup>

Notable examinations of prior stimulus payments made use of the CE data. These studies typically reported the MPC of nondurable and total consumption. This is useful for both testing economic theories as well as understanding which types of spending respond the most to rebate checks.<sup>36</sup> Johnson, Parker, and Souleles (2006), using CE data with added questions about the EGTRRA 2001 rebate timing and amounts, found an MPC for nondurable consumption between 0.2 and 0.4 within three months and 0.66 within (roughly) six months of rebate receipt. Using a similar approach to analyze the ESA 2008 payments using CE data, Parker et al. (2013) found a nondurable MPC between 0.12 and 0.3 and a total consumption MPC between 0.5 and 0.9 within three months. They failed to find a significant effect for the second three-month period, but with this caveat in mind, the six-month estimated MPCs are 0.4 and 1.2 for nondurable and total consumption, respectively.

Misra and Surico (2014) reanalyzed the CE data for these two stimulus episodes, allowing for heterogeneous responses using quantile regressions. They found that roughly half of households did not change their consumption when receiving the stimulus while 20 percent of households spent over half of

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35. This result also highlights one of the limitations of account data that we discussed above: having access to only a portion of a household's financial situation provides an incomplete picture of their spending decisions.

36. Economic models are based on maximizing the utility that individuals receive from consumption. While it is safe to assume that individuals receive immediate utility from consuming goods such as food or entertainment, it is not so clear how to allocate the utility received from durable purchases, such as cars or housing.

their rebate within three months. They also found smaller longer-run MPC estimates than in the earlier papers, although their findings fall within the confidence intervals of the prior point estimates.

Broda and Parker (2014) used weekly spending data from the Nielsen Consumer Panel (NCP) along with additional survey questions to measure the impact of the ESA 2008 payments. They found a spike in spending the week that the ESA payment was received, and the spending remained elevated, although by a declining amount, throughout the first quarter after the payments were received. While they cannot directly compute an MPC since the NCP only collects data on a subset of items, their rescaling of the NCP spending estimates yielded a total MPC between 0.5 and 0.75 for one quarter after disbursement.

Another set of papers in this literature leveraged the question about how the household would mostly use the payment. Shapiro and Slemrod (2003b) found that 22 percent of households would mostly spend the EGTRRA 2001 rebate while 32 percent would mostly save the rebate. When using the same approach to examine the ESA 2008 payments, Shapiro and Slemrod (2009) found very similar results of 20 and 32 percent, respectively. Shapiro and Slemrod (2003a) provided a framework to convert these responses into an aggregate MPC, which they find to be, after making some additional assumptions, around 0.35 for the EGTRRA 2001 rebate. Shapiro and Slemrod (2009) used this same methodology to estimate the aggregate MPC for the ESA 2008 payment to be under one-third.

In summary, the estimated MPCs in response to these earlier stimulus payments cover a wide range depending upon the time frame and consumption measure examined. Kaplan and Violante (2014) surveyed the prior literature and concluded that a reasonable estimate of the MPC for nondurables after one quarter is 0.25. Extending the time frame to two quarters yielded an estimate that ranges between 0.3 to 0.66 while examining total consumption for two quarters yielded estimates between 0.5 and 0.9.

## Summarizing the Evidence

Comparing the EIP MPCs to previous studies is challenging for studies using transaction data. There is no direct analogue between the nondurable and durable concepts used in the CE and the spending categories used in the transaction data. Furthermore, the sample used in transaction data studies tend to be younger, lower-income individuals. Baker et al. (2020) attempted to correct for the demographic differences and found an MPC 0.27. Interpreting this as a mix of nondurable goods and expenses, the MPC does appear to be smaller than previous rebate episodes.

The most consistent results across rebate check episodes come from the Shapiro and Slemrod (2003b) “mostly spend” type questions. These studies show slightly smaller responses to the EIP compared to previous rebate checks. While

Parker et al. (2022) attempted to keep the sample and econometric specification consistent with previous studies of the 2001 and 2008 episodes, the difference in how the rebate checks were paid out led them to deviate from earlier studies. These changes prevent us from fully knowing whether their smaller estimates are due to the pandemic or to differences in analysis methods.

In summary, the various studies analyzing the spending response to the EIPs show similar or smaller responses compared to previous rebate checks. This may be the result of fewer spending opportunities as consumers stayed home due to COVID-19 restrictions, higher liquidity from other government benefits, and increased saving due to uncertainty. Studies that use nationally representative samples, such as the CE, likely deliver the best estimates of the average nationwide increase in spending stemming from the EIP payments. They also have the advantage that they are more easily comparable to past studies that use the same survey. Because these survey data are only available with a lag, high-frequency transaction data provide a useful snapshot of the early response to rebate checks. Furthermore, the granularity and panel nature of transaction data lead to more precise estimates of the sample they cover. Unfortunately, transaction data are not designed to be representative; e.g., the transaction data used in the EIP analyses include disproportionate shares of younger and lower-income individuals. Because the rebate checks often target low-income individuals, these studies can still provide useful information to policymakers. It is important to keep in mind, however, that the results are not generally representative of the U.S. population. Lastly, because there is currently no standardization in the analysis sample, estimation procedure, or spending categories for transaction data, comparing results across these studies remains a challenge.

## Lessons Learned

What lessons can we learn from the COVID-19 stimulus payment response that we can apply to the next recession?

### Stimulus Payments Can Now Reach Most People Very Quickly

As noted in the U.S. Federal Rebate and Stimulus Payments section, earlier rebate and stimulus payments were delivered via paper checks that arrived in the mail. It was only beginning with the stimulus payments legislated by ESA 2008 that the federal government began disbursing these payments electronically. As such, these earlier payments did not arrive until several weeks after the legislation was signed.

The use of electronic disbursement dramatically shortened the period between the signing of the legislation and the initial arrival of payments. For

the first EIP, it took about two weeks for the Treasury to send the first direct deposits out. Over the subsequent EIP rounds, the gap between signing the bills enacting the EIPs and the disbursement of funds narrowed even further. The second EIP narrowed that gap to about one week while the third EIP's first batch of payments were made the day after the legislation was signed. The government's ability to inject cash into the economy quickly—whether it be intended as a stimulus or insurance, especially when compared to past reliance on mailing paper checks—shows that fiscal policy can be implemented rapidly with minimal transaction costs.

However, as noted earlier, while many households received their first EIP rapidly, there were some who had to wait a long time. In particular, the most vulnerable populations are those who are least likely to have valid account information on file with the IRS. Marr et al. (2020) noted that of their estimate of 12 million people who did not automatically receive an EIP payment, 75 percent were concurrently enrolled in either Medicaid or SNAP. They suggested that partnering with state and local governments to encourage these households to apply for these benefits—both through direct outreach as well as in the context of routine interactions with clients online, on the phone, or in person—could help increase uptake. A high priority should be to leverage the experiences from ultimately providing EIP payments to this population in order to build an understanding of how to shorten the time lag for disbursing funds to this group during the next recession.

## Stimulus Payments Can Inject Cash Into the Economy Quickly

The proliferation of studies using high-frequency administrative account data has made clear that individuals spend the rebate checks almost immediately after receiving them. Baker et al. (2020) and Karger and Rajan (2021) found an immediate spike in daily spending upon receipt of the EIPs. Cooper and Olivei (2021), who examined the longest period following EIP receipt among the studies using transactions data, found that two-thirds of the MPC response occurred within the first two weeks. Earlier research, which had been limited to examining responses at quarterly intervals—except for Agarwal, Liu, and Souleles (2007), who used monthly data—could not uncover the speed with which households responded to the rebate checks.

Prior research had suggested that households respond quickly to income receipt. Daily-level data has been used to show that individuals respond very quickly to the receipt of government benefits and paychecks (Stephens 2003; Gelman et al. 2014; Olafsson and Pagel 2018). Furthermore, daily and monthly data has been used to show that much of the consumption response to tax refunds occurs within the first month (Baugh et al. 2021; Gelman 2021).

However, until now, the necessary data had not been available to link the speed of these responses to stimulus payments.

The speed of the spending response further underlines the importance of getting checks to households that do not receive them automatically. It has been well established that low-income households have larger MPCs across a variety of domains, including prior rebate checks. When combined with the fact that the bulk of the spending occurs quite rapidly, it suggests that resolving the hurdles to getting EIPs in the hands of the households who do not receive them automatically will provide another means for quickly getting cash into the economy.

## Determining Whether Stimulus Payments Are Well-Targeted Depends on Policymakers' Objectives

The question of whether stimulus payments are well-targeted hinges crucially on how they are intended to function in the economy. If the goal of providing cash transfers is to relieve economic hardship, other programs, such as UI benefits, may be better positioned to do so. As shown in Table 3.2, households with higher pre-pandemic income were less likely to face lost employment income due to the COVID-19 recession. Yet a sizable number of households that did not experience any adverse income or employment shocks still received the EIP. However, UI benefits carry an administrative burden in being distributed while stimulus payments can provide quick relief to households although they are not well-targeted for this purpose.

If the goal of sending stimulus payments is to bolster aggregate demand, then distributing these to households with the highest MPCs should be the priority. As discussed above, many of the studies discussed in this chapter have shown that those with lower income and liquidity and who faced income shocks have higher MPCs. Under this criterion, the income phaseout rules do lead to better targeting. While stimulating the economy was not likely the main goal of the EIP payments during the pandemic, this is often the stated role of stimulus payments in a typical recession.

However, if the goal is to provide relief to the households particularly harmed by the recession, that might involve distributing EIPs to those with lower MPCs. In that sense, the policy should target those who have lost income or are in danger of losing income. Initially in a downturn, reaching everyone in danger of losing income likely entails broad distribution. Over time, that group should become easier to identify, allowing more targeted distribution. For example, in a pandemic such payments might be focused on workers in sectors, such as in-person services, that are most vulnerable to demand fluctuations. Another reason to rely on EIPs is that, because cash is fungible, EIPs can be more efficient than using different programs to target specific needs.

## Payments Such as EIPs Can Fill Holes Left by Other Programs

The social safety net was substantially bolstered during the pandemic. For example, workers who were typically ineligible for UI benefits, such as gig workers and the self-employed, became eligible. This may not occur in future recessions. Under those scenarios, EIP-like payments are likely to provide an important role in filling these holes.

Moreover, many eligible individuals do not apply for benefits. Prior research (Gould-Werth and Shaefer 2012) has shown that less educated people and racial and ethnic minorities typically have lower UI take-up rates. Some of the reasons for the low take-up include the complexity of the application process and people not realizing they are eligible for benefits. Because the EIPs have a very low administrative burden, it is likely that they reached people in a timely manner who were left out by other policies for a myriad of reasons.

There were also unanticipated ways in which the EIP payments filled gaps created by other policies. Because of the historic rise in UI claims in March 2020, many state employment systems were overwhelmed and were not able to process all claims on time. While all individuals who were eligible for UI eventually received their benefits, some had to wait months after applying as states worked through their backlogs. In contrast, the EIP checks did not encounter any system-wide delays in disbursement. Given the reliability and speed of EIP disbursement, it is likely that they will continue to fill in the gaps during future recessions as well.

Finally, some people lose income who are not eligible for Unemployment Insurance. These include business owners who remain open but are less profitable. In this recession, the government provided forgivable loans to many businesses, which likely helped provide relief, but that also may not occur in future recessions.

## Better Data Are Needed to Identify Holes in the Social Safety Net

The EIP payments were an important way Congress protected households during the pandemic. Unlike the UI benefit extensions that were designed to offset employment losses and the SNAP program extensions, which target low-income households, the EIP benefits were distributed to a broader range of households. In addition, traditional “automatic stabilizers,” such as Medicaid, offered additional sources for supporting those households that were impacted.

Piecing together a complete picture of all the benefits that a household receives remains a challenging task. While some surveys elicit program benefit information from households, researchers have noted that many widely used, publicly available datasets severely underreport the extent of government

benefit receipt (e.g., Meyer, Mok, and Sullivan 2015). Larrimore, Mortenson, and Splinter (2021) were able to use IRS data that linked information on earnings, UI benefits, and EIP receipt to provide some insight into how these payments were able to mitigate the extent of the earnings losses that were suffered by households. They noted that with their administrative data that they were able to almost exactly match published aggregate totals while estimates of total UI benefits paid based on the Current Population Survey understated aggregate totals by roughly 60 percent.

Yet the picture remains incomplete. Our understanding of who received EIPs along with other benefits is poor because of a lack of public data. One useful change would be if more federal and state government agencies made available data on program participation, administrative earnings records, and tax returns—all with appropriate privacy protections and levels of aggregation. That would provide more clarity on how well EIPs worked as relief during the pandemic, what holes in the safety net still remained, and how EIPs could be better structured in the future to support households in need.

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The COVID-19 pandemic posed an extraordinary threat to lives and livelihoods. In the United States, the pandemic triggered a sharp downturn. Yet, the ensuing economic recovery was faster and stronger than nearly any forecaster anticipated due in part to the swift, aggressive, sustained, and creative response of U.S. fiscal and monetary policy. But when the next recession arrives, it most likely won't be triggered by a pandemic.

*Recession Remedies* examines and evaluates the breadth of the economic-policy response to COVID-19. Chapters address Unemployment Insurance, Economic Impact Payments, loans and grants to businesses, assistance to renters and mortgage holders, aid to state and local governments, policies that targeted children, Federal Reserve policy, and the use of non-traditional data to monitor the economy and guide policy. These chapters provide evidence and lessons to apply to the next recession.

### Contributors

Anna Aizer • Robin Brooks • Tomaz Cajner  
Gabriel Chodorow-Reich • Wendy Edelberg • Laura Feiveson  
Jason Furman • Peter Ganong • Tim Geithner • Michael Gelman  
Kristopher Gerardi • Fiona Greig • Laurie Goodman • Ben Iverson  
Christopher Kurz • Lauren Lambie-Hanson • Pascal Noel  
Claudia Persico • Jonathan Pingle • Louise Sheiner  
Melvin Stephens, Jr. • Daniel Sullivan • Adi Sunderam  
Stacey Tevlin • Joseph Vavra • Susan Wachter  
David Wessel • Paul Willen



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